



Conference Proceedings

Annual Banking Conference 2017

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Proceedings of

ANNUAL BANKING CONFERENCE 2017

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Pre-words by the Director General, BIBM

The banking industry needs the collective efforts of academicians, researchers and practitioners to cope up with the global banking environment of growing competition and challenges. Annual Banking Conference provides a forum for bringing together researchers, bankers and academicians from all over the country to exchange and share knowledge, experience and research outputs on banking and related issues. The Annual Banking Conference-2017 organized by the Bangladesh Institute of Bank Management (BIBM) is an endeavor for addressing the need of the stakeholders of the country's banks and financial institutions.

The publication of the proceedings of the Annual Banking Conference 2017 is an attempt to capture all speeches, activities and research papers for further dissemination amongst the stakeholders. I believe the publication would benefit academicians, researchers and practitioners in their endeavour to improve the performance of the banking sector of Bangladesh. We appreciate and encourage feedback from our esteemed readers on the conference proceedings which would definitely help us in organizing the Annual Banking Conference in future more efficiently.

Professor Dr. Toufic Ahmad Choudhury

Pre-words by the Chairman, ABC 2017

The banking industry is passing through profound changes. The ongoing changes in terms of faster customer services, more efficient customer relationship management, increasing use of technology and innovations in banking have brought remarkable changes in the banking industry throughout the world. The banking industry needs combined efforts of academicians, researchers and bankers to cope up with the growing challenges. Annual Banking Conference offers a platform for interactions amongst researchers, bankers and academicians to exchange and share knowledge and research outputs on banking and related issues.

The Annual Banking Conference-2017 was inaugurated by the honorable Chairman of the Governing Board of BIBM and Governor of Bangladesh Bank Mr. Fazle Kabir. Research papers of the conference were presented in four plenary sessions: 'Macro Banking Environment'; 'Operational Issues of Banking'; 'Digital Technologies for Driving Financial Inclusion for the Last Mile-Global Perspective and Best Practices'; and 'Promoting Client Centric Approaches in DFS: Product Innovation for Low Income Groups and Small Businesses'. A total of 20 papers were presented where academicians, researchers and senior level bank executives took part in the two-day gathering.

On the occasion of the publication of the Conference Proceedings, I pay my gratitude to the honorable Chairman of the Governing Board of BIBM and Governor of Bangladesh Bank Mr. Fazle Kabir for his guidance and kind inauguration of the Annual Banking Conference 2017. BIBM is grateful to the Deputy Governors of Bangladesh Bank, Mr. Abu Hena Mohd. Razee Hassan, Mr. Shitangshu Kumar Sur Chowdhury and Mr. S.M. Moniruzzaman for their presence and for delivering valuable speeches. I would also like to pay my gratitude to the member banks for their all out support to hold the Annual Banking Conference in BIBM. I appreciate the effort and hard work of the organizing committee and the staff of BIBM for successfully conducting the conference.

The Proceedings of the Annual Banking Conference 2017 includes all research papers and write-ups presented in the conference. It also includes welcome address, speech by the chief guests for both the days, speech by the special guest, keynote paper for both the days, concluding speeches and summary of all plenary sessions. We appreciate and encourage feedback from our valued readers.

Professor Dr. Shah Md. Ahsan Habib



Programme Schedule (Day-1)

INAUGURAL SESSION

Welcome Speech on ABC 2017

- **Professor Dr. Shah Md. Ahsan Habib**, Chairman, Organizing Committee

Inauguration of the Conference

- **Mr. Fazole Kabir**, Chairman, BIBM Governing Board & Governor, Bangladesh Bank

Presentation of the Inaugural Key Note

- **Dr. Toufic Ahmad Choudhury**, Director General, BIBM

Session-1

BIBM- Q-Cash Session on
"Macro Banking Environment"

Session Chair: **Professor Shibli Rubayat Ul Islam**, Dean, Faculty of Business Studies, University of Dhaka

Panel Discussion by the Designated Discussants:

- **Mr. Anis A. Khan**, Managing Director & CEO, Mutual Trust Bank Limited and Chairman, Association of Bankers, Bangladesh
- **Mr. Md. Yasin Ali**, Supernumerary Professor, Bangladesh Institute of Bank Management (BIBM)
- **Mr. Faruq Mainuddin Ahmed**, Additional Managing Director, Trust Bank Limited
- **Dr. Khondakar Golam Moazzem**, Research Director, Centre for Policy Dialogue (CPD)
- **Dr. Prashanta Kumar Banerjee**, Professor & Director (R D&C), BIBM

Papers Presented:

1. Do Corporate Governance and Credit Risk Management have Implication on Bank Performance? An Empirical Study on the Private Commercial Banks of Bangladesh
2. Intellectual Capital and Bank Performance in India: An Application of Panel Data Quantile Regression
3. Impact of NPA on Banking Performance & Shareholder Value Creation
4. The Myth and Reality of Islamic Banking Practices in Bangladesh: New Evidence from the Structural Equation Modelling Approach
5. An Empirical Study to Assess If Islamic Banks' Assets Generate Less Revenue than Its Conventional Counterpart
6. The Causal Relationship between Financial Development and Environmental Quality in Bangladesh: An Empirical Study

Open Floor Discussion

Concluding Remarks

Programme Schedule (Day-1)

Session-2 BIBM- Enroute Session on "Operational Issues of Banking"

Session Chair: **Mr. Mohammad Muslim Chowdhury**, Secretary in Charge, Ministry of Finance, Government of the People's Republic of Bangladesh

Panel Discussion by the Designated Discussants:

- **Dr. Faisal Ahmed**, Chief Economist, Bangladesh Bank
- **Mr. Helal Ahmed Chowdhury**, Supernumerary Professor, BIBM
- **Mr. Mosleh Uddin Ahmed**, Managing Director & CEO, NCC Bank Limited
- **Dr. Sarwar Uddin Ahmed**, Dean, Business School, Independent University, Bangladesh

Papers Presented:

7. Export Development Fund in the Banking Sector of Bangladesh: Status and Challenges
8. An Analysis of Determinants of Job Satisfaction of Private Commercial Banks in Bangladesh
9. Effect of Human Resource Practices in the Employees' Intention to Stay of Nepalese Banking Sector
10. Convergent Effect of Work-Family Conflict on Job Satisfaction of Commercial Bank's Employees in Bangladesh: Does Gender Moderate the Effect?
11. Structural Equation Model: Bankers' Satisfaction on Service Quality
12. Annual Sustainability Report: A Study on Financial Services Industry in Bangladesh

Open Floor Discussion

Concluding Remarks

DAY 1 CLOSING SESSION

Speech by the Chair

- **Dr. Toufic Ahmad Choudhury**, Director General, Bangladesh Institute of Bank Management (BIBM)

Speech by the Chief Guest

- **Mr. S.M. Moniruzzaman**, Deputy Governor, Bangladesh Bank

Presentation of Crest among the Paper Presenters

Vote of Thanks

- **Mr. Dewan Hanif Mahmud**, Editor, Bonik Barta



Programme Schedule (Day-2)

The Day-2 of the 2017 Annual Banking Conference under the theme “Accelerating Digital Financial Services (DFS) to achieve financial inclusion by 2021” which was jointly organized by the Bangladesh Institute of Bank Management (BIBM) and the United Nations Capital Development Fund (UNCDF) Shaping Inclusive Finance Transformations (SHIFT) programme in Bangladesh. The conference took place on 26th and 27th November 2017 in Dhaka. Eight papers were presented during the day in two sessions.

INAUGURAL SESSION

Introductory Speech on ABC 2017

- **Professor Dr. Shah Md. Ahsan Habib**, Chairman, ABC Organizing Committee

Opening Remarks on Day Theme

- **Mr. Rajeev Kumar Gupta**, Programme Manager, SHIFT SAARC & ASEAN, UNCDF

Presentation of the Key Note Paper

- **Mr. Khondkar Ibrahim Khaled**, A.K. Gangopadhaya Chair Professor, BIBM

Speech by the Special Guest

- **Mr. Shitangshu Kumar Sur Chowdhury**, Deputy Governor, the Bangladesh Bank

Speech by the Chief Guest

- **Dr. Qazi Kholiquzzaman Ahmad**, Chairman, Palli Karma Sohayak, Foundation and Dhaka School of Economics

Speech by the Chair

- **Dr. Toufic Ahmad Choudhury**, Director General, BIBM

Special Session on "Looking into the Future: Next Frontiers of DFS in Bangladesh

Moderator: **Dr. Ananya Raihan**, Executive Chairman, dnet

Thematic Presentation by **Mr. Matteo Chiampo**, Consultative Group to Assist the Poorest (CGAP)

Moderated Discussion

- **Mr. Arijit Chowdhury**

Additional Secretary, Financial Institutions Division, Ministry of Finance, Government of the People's Republic of Bangladesh

- **Mr. Feisal Hussain**

Team Leader, Business Finance for the Poor in Bangladesh

- **Mr. Arfe Elahi**

IT Manager, Access to Information Programme, Prime Minister's Office, Government of the People's Republic of Bangladesh

- **Mr. Anirban Bhowmik**

Country Director, Swiss Contact, Bangladesh

Programme Schedule (Day-2)

Session-3

"Digital Technologies for Driving Financial Inclusion for the Last Mile-Global Perspective and Best Practices"

Moderator: **Mr. Rajeev Kumar Gupta**, Programme Manager, SHIFT SAARC, UNCDF

Papers Presented

1. Financial Inclusion in the Era of Digitalization in Developing Countries: A Dynamic Panel Analysis
2. Financial Inclusion in India- Achievements and Constraints
3. Financial Inclusion in Bangladesh through Mobile Banking
4. An Analysis of Banking Behavior of Women in Formal Institutional Environment in Bangladesh

Moderated Discussion

- **Dr. Lila Rashid**, General Manager, Payment System Department, the Bangladesh Bank
 - **Mr. Syed Mohammad Kamal**, Country Manager, Master Card
 - **Mr. S. M. Mainuddin Chowdhury**, Additional Managing Director, Southeast Bank Ltd.
 - **Md. Mohiuddin Siddique**, Professor and Director (DSBM), Bangladesh Institute of Bank Management (BIBM)
-
- Experts from South Asian Countries
 - Q & A and Closing Remarks

Session- 4

"Promoting Client Centric Approaches in DFS: Product Innovation for Low Income Groups and Small Businesses"

Moderator: **Md. Ashraful Alam**, Country Project Coordinator, UNCDF SHIFT in Bangladesh

Papers Presented

1. Digital Financial Services (DFS) as a Tool of Financial Inclusion to Build Consumer Demand
2. Interfacing Model for Superior Practices of Management Information Systems (MIS) in the Service Organization; a Case Based Approach
3. Role of IT in Promoting SME Banking: Indian Evidence
4. Potentials and Challenges of Agent Banking in Bangladesh

Moderated Discussion

- **Dr. Shahadat Khan**, Chief Executive Officer, SureCash
 - **Mr. Khondakar Shakhawat Ali**, Sociologist and Researcher
 - **Mr. Muklesur Rahman**, Managing Director & CEO, Shimanto Bank Ltd.
 - **Mr. Md. Nehal Ahmed**, Professor, Bangladesh Institute of Bank Management (BIBM)
-
- Experts from South Asian Countries
 - Q & A and Closing Remarks

Part-I



Conference Speeches and Keynote Papers

WELCOME ADDRESS

Professor Dr. Shah Md. Ahsan Habib

Director (Training), BIBM

and Chairman, ABC Organizing Committee



Good Morning, Ladies and Gentlemen.

Annual Banking Conference-ABC is an Annual Knowledge Platform for sharing information, facts, figures and their analyses on banking issues. The Two-day festive gathering is organized for the sixth time this year by the Bangladesh Institute of Bank Management. This is for your kind information that BIBM has been organizing Annual Banking Conference since 2012 aiming at bringing together experts, academicians and researchers to exchange and share knowledge, experience and research outputs on banking and related issues.

It is my pleasure to welcome you all in the Annual Banking Conference 2017. Today, we are honored by the presence of the Chairman of the BIBM Governing Board and honourable Governor Bangladesh Bank Mr. Fazle Kabir in this Inaugural Session as the Chief Guest of the ABC. We have with us on the stage, honourable DG of BIBM Dr. Toufic Ahmed Choudhury as the Key note speaker of the Inaugural Session.

We are delighted to have such a fantastic audience comprising senior central bankers, current and former chief executives of banks, bureaucrats, university professors, academicians, researchers, faculty members of different universities and institutions, senior bank executives, media personalities and journalists. We welcome you sir, and sincerely thank you all for your kind presence. We are pleased to welcome paper presenters from home and abroad who traveled all the way to BIBM to take part in the conference.

On the way to arrange the Annual Banking Conference 2017, we called for research papers on key banking areas through our website in the month of June. We are very pleased that faculty members from a number of universities and practicing bankers from home and abroad have responded and a total number of over 100 abstracts were received for consideration. Finally, a total number of 80 papers were submitted from home and abroad for taking part in the review process. From these papers, our review team selected 20 papers to present in the two-day event in four plenary sessions: The Plenary sessions are titled as 'Macro Financial Environment'; 'Key Operational Areas of Banking'; 'Digital Technologies for driving Financial Inclusion for the Last Mile'; and 'Promoting Client Centric Approaches in Digital Financial Services'. Today, i.e. on the first day, a total of 12 papers will be presented.

The remaining 8 papers will be presented tomorrow. Another special session titled 'Looking into the

Future: Next frontiers of DFS' will be organized tomorrow participated by the experts of the relevant field.

Moreover, two special keynote papers will be presented today and tomorrow in the two inaugural sessions. The conference will end with a Cultural Program and a Concluding Dinner tomorrow.

BIBM invited selected senior academicians from the universities and top level bank executives to add value to the conference sessions as session chairmen, moderator, and panelists. We are really grateful for their kind consent. We are sure that the audience and participant of the conference will be immensely benefited out of their deliberations and comments.

Distinguished guests, in this auspicious occasion, we want to take the opportunity to launch a publication titled 'Card Gallery-A Information guide on Credit and Debit Cards' which could be a useful product information source both for bankers and consumers. In the process of compiling the information and preparing the Card Gallery, the member banks of BIBM were approached to provide information with certain features on their credit and debit cards, and we are delighted that 40 banks responded to our requests. Each bank has been offered with a page and the publication could be displayed as a desk calendar for the year 2018 as well. We hope and believe that the endeavor would benefit bankers, consumers and other stakeholders of the banking industry.

In conclusion, we would like to convey our gratitude to the honorable Chief Guest of the inaugural session of the conference Mr. Fazle Kabir for his kind presence. We offer special thanks to the participants who have joined us today. We are extremely pleased to see the responses of our member banks and universities that have nominated a large number of senior level bank executives and faculty members to be present in the conference. We are grateful to the supporting organizations, UNCDF, Q Cash, Enroute, Ammra Network; and media partners Banik Barta, Dhaka Tribune, and Channel 24 for their support and cooperation. We hope, the support of all concerns and active participation of the participants will help us putting together our all efforts to make this conference a success.

Distinguish guests, ladies and gentlemen, with the kind permission of the chief guest we conclude the inaugural session of the conference.

Thank you very much.



INAUGURAL ADDRESS

Mr. Fazle Kabir

Chairman, BIBM Governing Board & Governor, Bangladesh Bank



Today's key-note speaker and Director General, BIBM, Dr. Toufic Ahmad Choudhury, Chairman of the organizing committee, Dr. Shah Md. Ahsan Habib, distinguished academics, professionals, journalists, participants, faculty members of BIBM, and other guests, ladies and gentlemen – very good morning.

It is an honor and a privilege for me to be invited to the Annual Banking Conference 2017, the sixth event in the series organized by the Bangladesh Institute of Bank Management. The main objective of this conference is to provide a unique platform for interaction between bankers and academics for

combining practical banking knowledge with recent research initiatives. A gathering like this serves as a brain-storming forum for generating new ideas and delivering innovative thoughts to address the current and emerging issues of our banking sector. A number of papers focused on different emerging banking issues will be presented in different plenary sessions and a discussion on the papers will be made by learned bankers, researchers, academicians and the participants. All of these efforts will surely enrich the knowledge base of the participants as well as the policy makers. This kind of platform will also open an opportunity for the participants to establish a network among themselves which eventually helps them to develop their knowledge and skills in their professional arena.

The banking sector in Bangladesh has grown many folds since independence in 1971, accompanied by steady and inclusive growth. The sector has undergone successive rounds of major structural and regulatory reforms, supporting the emergence of a vibrant private sector. BB has steered this transformation by promoting market-based principles and macro-financial stability. My colleagues of the banking industry and academics, you all know that banking is not limited within the boundary of a country. Most often, we are to transact across the border. Besides, banking industry of a country is very responsive to the socio-political-economic situation of other countries. In this environment, ensuring financial stability is the common goal of every country. Sharing of knowledge and experience of others will certainly help us a lot in this regard.

I appreciate the decision of holding this year's conference on two thematic issues of our common interest. First day's theme is 'Macro Banking Environment and Operational Banking Issue'. Improving banking environment and resolving operational banking problems is our priority at Bangladesh Bank. With this aim in mind, BB has introduced several guidelines, such as, guidelines on rules and responsibilities of Board and senior management, guidelines on Basel-III, prudential regulations, etc. We have also intensified on-site and off-site supervision. Second day's theme is 'Accelerating Digital Financial Services (DFS) to

Achieve Financial Inclusion by 2021' which is our national priority. A few of our initiatives like small enterprise financing, mobile banking, agent banking, school banking are absolutely aimed at achieving financial inclusion. I strongly believe that augmenting these initiatives will also help our country to achieve Sustainable Development Goals by 2030.

Dear audience, you all know that banking, now-a-days, has become knowledge-based and dynamic activities. I believe all the critical issues of our banking arena would find place in the discussion of the conference. I think that research output of the academics along with perceptions, opinions and suggestions of the participants will give effective policy inputs for the banking community as a whole. In this connection, we enthusiastically expect that this endeavor will benefit all the stakeholders of the financial sector.

I congratulate the BIBM for this excellent initiative. I am confident this conference would help generate new ideas we all can take back to our respective areas to help Bangladesh continue its forward march.

With these few words, I declare the Annual Banking Conference open and wish it all success.

Thank you all for your patient attention.



INAUGURAL KEYNOTE PAPER

A REVIEW OF THE BANKING ACTIVITIES

Professor Dr. Toufic Ahmad Choudhury

Director General, BIBM



1. Introduction

This is not a performance review, rather a compilation of operational, regulatory and structural changes that occurred in 2016 in the banking sector of Bangladesh. This has been prepared based on the findings of BIBM yearly review studies on seven (7) broad functional areas (namely, credit, trade services, treasury, ICT, ICC, HR and Islamic Banking) and research on different operational issues. The aim of this keynote paper is to offer a generic review of banking operations, before we move to the issue based discussions in the plenary sessions.

2. Structure and Regulations

With a new bank (Shimanto Bank Ltd.) added to the system in 2016, the total number of banks stood at 57 comprising 6 SOCBs, 2SDBs, 40 PCBs and 9 FCBs. Again out of 40 PCBs, 8 are full-fledged Islamic Shariah based banks. During 2016, the share of PCBs in total assets increased by 3% (from 64% to 67%), while their shares in bank branches (45%) and total deposits (64%) remain same as compared to 2015. The following notable regulatory initiatives were taken in 2017:

- a) BB revised core risk guidelines on management of credit and foreign exchange risk as well as asset-liability management, and internal control and compliance.
- b) BB introduced a uniform core banking solution (CBS) for all scheduled banks.
- c) BB amended the 'Guidelines on Risk-based Capital Adequacy - Revised Regulatory Capital Framework'.
- d) BB issued detailed guidelines on commercial paper transaction procedure for all participants in the money market.
- e) To strengthen supervision of scheduled banks, BB established a new department titled 'Integrated Supervision Management Department'.
- f) BB introduced 7 and 14 day BB bills for effective implementation of its monetary policy.
- g) BB issued revised master circular on 'SME financing' to make it more inclusive and entrepreneur friendly.

3. Credit

The BIBM review of credit operations of banks in 2016 observed that private sector credit growth was 16.8% in 2016 against a target of 14.8%, whereas public sector credit experienced only 1.3% against a target of 10.3% growth CDR was only 0.78 at the end of June – 2016. Though the proportionate share of rural credit increased to 10.03% in 2016 compared to 9.88% in 2015, the industrial term loan as well as SME loans experienced slower growth in 2016 as compared to previous year. Credit concentration in trade services, Dhaka and Chittagong divisions and large loans continued unabated. Around 36%, 86% and 35% of total outstanding loans were provided in trade services, Dhaka and Chittagong divisions and in large loan

(above Tk. 200 million). Large loan category also observed highest growth in 2016. Surprisingly, the share of large loans in total loan outstanding of SOCBs was around 48% in 2016.

One noteworthy fact relating to credit operation was the continuous sliding down of lending rate and spread during 2016. The average lending rate came down to 9.44% and average spread to 4.65% in 2016. Both deposit and call money rate also went down more than proportionately during the year.

NPL is a cause of deep concern for the banking sector of Bangladesh. During 2016, the NPL ratio crossed 10%, which was below 9% in 2015. Not only the large loan, even SME sector also experienced much higher NPL. Financing large corporate business by multiple banks is one of the important reasons of defaults by large borrowers. Moreover, poor internal governance, inefficiency in fund management, directed lending etc. are also responsible for poor credit quality.

4. Trade Services:

BIBM studies on trade and related subjects show that PCBs as a group is the most dominant player in trade facilitation. Close to four-fifth export proceeds and over four-fifth of total import payments were made through PCBs in 2016. In terms of trade facilitation, the dominance of PCBs improved in CY2016 as compared to 2015. The growth rate for SCBs remained negative for 2016. PCBs were also the most dominant as a bank group in trade financing, remittance services, and maintenance of foreign currency accounts.

Documentary credit remained the most prominent payment technique in import and export transactions in Bangladesh in 2016, not different from the previous year. This is sharp contrast to the global practice in general where most payment transactions take place through open account. Documentary collection remained the second most important trade facilitation tool in the country. In EPZs however, the situation is different where though LC and documentary collection are dominant in importation, traders heavily relied on open account and documentary credit in case of exportation. Of the different types of LC, back-to-back and transferable LC remained dominant, however, there were decreasing trend in the use of transferable LC. In offshore banking, UPAS remained the key component in the asset side.

Like 2015, of the pre-shipment finance, PC was not the main component rather SOD or Export Cash Credit accounted for about half of the total pre-shipment credit in 2016. It has also been observed that EDF facilities are becoming attractive to the traders.

Poor drafting of LC clause and inappropriate use of incoterms in LC operation became concern to many of our trading partners. Correspondent banking relationship remained a critical factor for trade facilitation for the year 2016. In some instances, there are also cases when a global bank has withdrawn its correspondent relationship from entire country. In several instances banks had to create forced LIM and LTR due to the non-compliance of the importers. Non-compliance on the part of exporters resulted in NPL in some cases. Incidences of trade based money-laundering is a growing concern for policy makers and central banks throughout the globe. ADs need to be more serious regarding legal compliance and identifying right prices for the exportable and importable products on the way to address TBM.

Enforcement of online reporting and monitoring system by the Bangladesh Bank have brought positive changes in terms of decline in irregularities by banks and improvement in data accuracy. Especially, reporting practices by banks improved remarkable in terms of accuracy.

5. Treasury Operations:

The main function of treasury department is to manage fund of the bank optimally and profitably within the acceptable level of risk. The BIBM review on treasury operations of banks in 2016 has the following observations:

Money market was stable in 2016 due to excess liquidity in the market. Banking sector witnessed a huge liquidity surplus because of lack of investment opportunity. The overnight market was also very liquid and as a result, most of the banks failed to place their funds in the market due to lower demand for fund. As a result, the market was flat throughout the year. Inward remittance growth, moderate export growth and lower import payment due to declining commodity price in the global market was the major feature of the FX market in 2016. All these caused a record high FX reserve and BOP surplus. Banks Net Open Position has increased significantly.

Secondary bond market in Bangladesh is still shallow and almost non-existent. In order to start and consequently develop the secondary bond market, Bangladesh bank may think of initiating an open market operation for Treasury Securities. It will increase liquidity and depth in the market.

Banks in Bangladesh started to implement Basel-III from 2015. The new guideline induced banks to increase the quantity and quality of the capital base in order to ensure better risk management capacity. It also introduced liquidity framework (LCR and NSFR) under which banks need to maintain higher amount of liquid assets both in short-term and long-term basis. Banks are preparing themselves in order to cope with the new regulation. One of the major challenges for the banks in implementing Basel-III is to maintain sufficient amount of quality capital (Tier-I capital). As any type of credit loss is absorbed by the Tier-I capital, it erodes banks' capital base. Thus banks should have an appropriate capital plan consistent with their business operations particularly quality of their credit portfolio.

6. Internal Control and Compliance

The prerequisite of an effective banking supervision by the central bank or by other external agencies is the existence of strong ICC on the part of individual banks. Bangladesh Bank has issued a new guideline on ICC in banks in 2016. In fact, some recommendations raised in our earlier reports have been incorporated in the revised guidelines on Internal Control and Compliance.

A number of new dimensions have been added in the revised guideline on ICC. However, all those new dimensions have not been defined or clarified adequately. The revised guideline asks banks to form a Senior Management Team (SMT) to monitor and review the adequacy of internal control system. Will it replace the existing MANCOM? Alternatively, will SMT be a separate body along with MANCOM? The issue of 'concurrent audit' has been mentioned in the ICCD organogram with no clarification about its nature and procedure. Similarly, the scope, authority, and overall, the interrelationship between Shariah audit and regular audit have not been explained in the regulations. These vaguenesses in Shariah audit and IS audit are also reflected in the revised organogram and structure of ICCD. FX audit should also been accommodated in the prescribed organogram.

Independence of ICCD is vital for the accomplishment of different objectives set for it. The current requirement of reporting by the ICCD to the CEO reduces the operational independence of ICCD. Under the ideal arrangement, the audit, monitoring, and compliance units should remain integrated within the ICCD and ICCD head should directly report to ACB for making the department independent. However, the new regulation has added one undesirable complexity by establishing two different reporting lines to two separate authorities one is in between the ICCD head and MD, and the other one is from the head of the audit unit to the chairman of ACB. This sort of dual reporting line within the same department will reduce the coordination among the different units and reduce the overall performance of the ICCD. The involvement of ICCD head with any other business areas/operations is likely to arise a conflict of interest

that may diminish the effectiveness of ICCD. However, the current regulation permits bank management to assign the responsibility of the operational department to the head of ICCD. In fact, some banks already have their ICCD head who are given the responsibility of the other operational units. The situation will be alarming for the banking sector if that trend continues in the future.

7. Information and Communication Technology (ICT)

BIBM survey on various issues of ICT reflects that still 12% banks could not meet the Category-I status as stipulated in BB guideline. Only 22% banks have ITG framework, indicating severe weakness in respect of management's active involvement in IT system management in banks.

Security awareness of both bank customers and employees' is a great concern for banking sector. It is seen over the years that online banking frauds have been increasing due to the lacking of proper knowledge regarding banking information security. Customers' awareness must be increased. Specialized training on IT security and fraud prevention can be provided to employees of banks. Auditors of BB should ensure that banks are properly following the guidelines of BB. Multi-factor/adaptive authentication method can be introduced by banks quickly.

8. Islamic Banking

The review identified several observations in the context of Islamic banking of Bangladesh. As opined in the survey over earlier years, while operating in conventional environment, Islamic finance requires a different legal and supervisor framework appropriate to its nature of business. Islamic banking comes across great challenges due to lack of awareness about Islamic banking amongst its customers. Maintaining a capable and independent Shariah Committee/Council with adequate knowledge, and expertise is a critical need for banks. And like other economies, the Islamic banks of the country also face difficulties in liquidity management due to the underdeveloped nature of money market. Moreover, Islamic banks do not get adequate Customer/counterparty to invest under PLS arrangement (Mudaraba/Musharaka). For improving efficiency of the Islamic banking services in the country, there are huge scopes of using internationally recognized Islamic banking standards like AAOFI and IFSB's standards. Apart from this, well trained personnel in the area of Shariah audit is another critical need of the industry.

Some of the challenges identified in our earlier studies, are still to be addressed. Among those, product innovation is a critical challenge in Islamic banking. The study finds that the amount of PLS (Mudaraba and Musharaka) mode of financing is considerably low in Islamic banks. Employing non-Muslim employees in Islamic banks is another critical challenge.

9. Human Resource Management

In regard to human resource management of banks, BIBM review study finds HRIS and creating central HR database, HR succession plan, psychology and ethical test, training need assessment (TNA) and post training utilization (PTU), performance review report, uniformity in job hierarchy, BB's separate cell for HR monitoring and supervision, soft skill training and career counseling are the key issues and challenges for HR management in banks.

10. Conclusion:

Overall risk exposure of the banking sector remained at a tolerable level during 2016. Though credit risk increased mainly due to higher credit growth, market risk declined and operational risk remained same during 2016. The banking sector, as a whole, appeared to be resilient, registering a moderate growth in 2016. The balance sheet size of the banking sector increased by around 13% in 2016.

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CONCLUDING SPEECH (DAY-1)

S. M. Moniruzzaman

Deputy Governor, Bangladesh Bank



Distinguished participants, guests, ladies and gentlemen.....

I am happy to be present hereto address the Day-1 Closing Ceremony of the Annual Banking Conference 2017 organized by the Bangladesh Institute of Bank Management. I congratulate the paper presenters who have contributed in the conference today on the theme 'Macro Banking Environment and Operational Banking Issues'. I believe the findings of the paper as well as the subsequent discussions will definitely help us in improving the banking environment in Bangladesh. I appreciate the unique efforts

of the researchers and active participation of the participants to sort out crucial operational problems of this sector and to offer innovative solutions to those problems.

The banking sector of Bangladesh has achieved a lot since its independence and reached to a matured state during its journey for last four decades. There are many success stories too. However, operational problems are observed as inseparable part of banks' journey towards achievement. Bangladesh Bank continues to focus on strengthening the banking system and streamlining functioning of its various segments. The initiatives along these lines included deregulation of operations of banking and financial institutions, tightening of prudential regulation and improvement in supervisory oversight, promoting transparency and market disclosure etc. Particularly, for fixing operational problems of the banking sector, BB has intensified on-site and off-site supervision through the installation of digital tool like dashboard. BB is also in the process of adoption of risk based inspection and supervision. For improving operational environment, BB has also introduced various mandatory and voluntary guidelines for compliance by the banks. Bangladesh Bank will continue to pursue these efforts in future as well for the better interest of the banking industry and the country as a whole.

BIBM has done a great job by arranging and organizing this conference. I must congratulate BIBM and its organizing team for their efforts in the successful accomplishment of today's program. I would like to give special thanks to the contributors of today's conference whose efforts made this a success. I also appreciate the efforts of co-organizers and media partners. Finally, expecting more fruitful discussion tomorrow, I declare formal closing of Day-1 of the conference here.

Thank you very much.

INTRODUCTORY SPEECH (DAY-2)

Professor Dr. Shah Md. Ahsan Habib
Director (Training), BIBM
and Chairman, ABC Organizing Committee

The ABC conference of 2017 let me take the opportunity to welcome you all in the day two inaugural session. Today we are honored by the presence of the chairman of the Palli Karma Sohayak Foundation and Dhaka School of Economics Dr. Qazi Kholiquzzaman Ahmad as the chief guest. We have also with us the honorable Deputy Governor of the Bangladesh Bank Mr. Shitangshu Kumar Sur Chowdhury as the special guest.

In this session, the day two keynote paper will be presented by the honorable chair professor of BIBM and Former Deputy Governor of the Bangladesh Bank Mr. Khondkar Ibrahim Khaled. the Director General of BIBM, Dr. Toufic Ahmad Choudhury will be chair the session. We also have with us on the stage Mr. Rajeev Kumar Gupta, Programme Manager, SHIFT SAARC, UNCDF to deliver welcome remarks on day two themes.



We are delighted to have such a fantastic audience comprising of senior central bankers, current and former Chief Executives of banks, bureaucrats, university professors, academics, researchers, senior bank executives, media personalities and journalists. We welcome you all and thank you all for your kind presence. We are pleased to welcome the paper presenters from home and abroad in the day two sessions.

Yesterday, the Chairman of the Governing Board of BIBM and Governor of Bangladesh Bank Mr. Fazle Kabir inaugurated the conference. Twelve papers were presented in two plenary sessions. Today, we will have two plenary sessions where eight selected papers will be presented. Moreover, we will have a special expert session following this inaugural event. Distinguished audience, at this stage, I would request our Honorable Director General of BIBM to formally welcome today's Chief Guest and Special Guest by handing them the 2017 Annual Banking Conference crest. May I request the Honorable Chief Guest first to kindly receive the ABC crest. Audience present now respected Special Guest. Thank you, sir. Now I would request BIBM's Director General and Chairman of the session to kindly proceed with the inaugural event.

OPENING REMARK ON DAY-2 THEME

Mr. Rajeev Kumar Gupta
Programme Manager, SHIFT
SAARC & ASEAN, UNCDF



Honorable Chief Guest of today's inaugural session, Chairperson, PKSF and Dhaka School of Economics, Honorable Special Guest, Deputy Governor of the Bangladesh Bank, Honorable Session Chair, Director General of BIBM, Honorable Key Note Presenter, Chair Professor of BIBM, and Chairman, ABC Organizing Committee, fellow delegates, participants, media, ladies and gentlemen good morning and a very warm welcome to you all on the second day of the conference on behalf of the United Nations Capital Development Fund (UNCDF).

UNCDF works in the world 47 least developed countries. Our objective is to see how public and private finance can work for the poor, the public and the private sector. We do this in two ways. The first is financial inclusion, which means we facilitate opportunities for individuals, households, and enterprises access and use finance in an enabling, affordable, and responsible manner. We work towards enabling these actors leverage the local economic development, increase incomes, and climb out of poverty. The second is localized investment.

We recognize that even when individuals, households, and enterprises have access to finance but lack the opportunities to invest then the development cannot happen. Thus, we also facilitate the local economic investments. Therefore, we work on decentralizing finance, municipal finance, and structured project finance etc. to leverage domestic capital for local investment. In 2015 we started to work in SAARC region on the issues of financial inclusion. We identified four key areas as priorities to accelerate financial inclusion and digital financial services.

The first area is the enabling environment. We wish to see adequate regulations in place that accelerate the market further and take care of consumer protection. On the other side, we aim to see ways to motivate the private sector to innovate, take risks, and conceptualize new business models that are considerate of clients' needs and perspective as well as the market. We are considering inclusion of the marginalized segments, women, low occupational segments, micro – merchant segments, as well as various geographical areas. Thus, at one side is policy and on the other is a private sector intervention.

How can we motivate the private sector to work with these market segments while maintaining commercial focus? Some answers may be hidden in the big data and research, which is our second and third area of focus when accelerating financial inclusion.

How do you leverage the big data to access these market segments and develop new business models? Data leads to information, information leads to an understanding of a context, context leads to insights, insights lead to action, and action leads to outcomes and results. We need to work on and learn from customer centricity to understand different market segments, such as women or micro - merchants. The data provides us with a platform to work on and better understand customers. The fourth area of our focus is capacity building. Due to daily innovations, our sector is dynamically changing. In early days it was sufficient to know finance, market, and people, but now we are also talking about knowing technology too. Nowadays we hear about Blockchain, Bitcoin and the like. Therefore, it is important to embrace capacity development and build knowledge in these areas. We need to ask ourselves how these technologies will advance the market as it moves forward. These technology driven solutions will need an alternative consideration by the regulators, policy makers, market actors and the customers.

UNCDF is pleased to partner with the BIBM on the second day of the conference to discuss Digital Financial Services and Financial Inclusion and how to achieve it by 2021. I hope that today we will be able to examine some of the issues I spoke of earlier as well as consider international best practices and the next DFS frontiers globally, and contextualize these to the Bangladesh scenario, for the Bangladesh people, for the Bangladesh institutions. This is critical. As we move through the day, we also must place the customer centricity at the center of our discussions and work in the financial sector, and especially within digital financial services. I hope that the today's discussion will also deliberate more into customer centricity, the risk aspect of it, consumer protection as well as consider innovations needed in DFS products and services to accelerate financial inclusion.

We have many esteemed speakers in today's conference and we look forward to fruitful discussions. Thank you once again and we welcome you to the second day of the conference. Thank you.



KEYNOTE SPEECH (DAY-2)

DIGITAL FINANCIAL SERVICES FOR ACHIEVING FINANCIAL INCLUSION

Mr. Khondkar Ibrahim Khaled

A.K. Gangopadhaya Chair Professor, BIBM



Inclusive economy is a national obligation. All sections of people joined the war of liberation in 1971. Hence our Constitution declares that all citizens of Bangladesh are the owners of the country. They deserve equal social, economic, and political rights. Economic inclusion of all citizens arises out of their Constitutional rights. Financial inclusion is not a favor. It is their right, secured through the war of liberation.

War of liberation provided four basic principles which have been described as the basic principles of the state in our Constitution. These are Nationalism, Secularism, Democracy and

Socialism. Out of these, political basic principle is democracy while economic basic principle is Socialism. Socialism was the basic economic principle in the 1972 Constitution. In 1975, some antiliberation elements under foreign patronization killed Bangabandhu and four national leaders who led the liberation war and removed 'Socialism' from the Constitution.

Bangabandhu's party Awami league gained three fourth majority in the 2008 election and brought back 'Socialism' as a basic economic principle of the State. Emerging areas in Digital Financial Services space like FinTechs, Block chain, Mobile money etc. need a different thinking, need a different way of addressing the issues by the regulators, policy makers, market participants and the people. Some political leaders belonging to different parties, including Awami League, while speaking at seminars and talk shows, felt that Bangladesh for all the practical purposes, has adopted Capitalism while Socialism remains in the Constitution. Socialism and Capitalism are poles apart and contradictory to each other. How can they co-exist? This needs a close examination. Socialism is for economic inclusion and Capitalism stands for concentration of wealth, resulting in social exclusion. Since Socialism has been adopted in the Constitution as a basic economic principle of the State, we cannot practice or opt for Capitalism, which contradicts our Constitution. Some political leaders, including some Awami Leaguers openly argue that Bangladesh has practically landed in a changed economic strategy and joined capitalist platform. Let us examine their opinion. Bangladesh has clearly opted for 'free market economy' remaining faithful to 'Socialism'.

The market economy is a continuum, containing many points in it. Extreme Socialism stands at the left-most point in the continuum. Humane Socialism or welfare economy stands in the middle, while Capitalism stands at the right-most point. Socialism, welfare economy and Capitalism, all the three belong to a market economy, but they are very different from each other. Our Constitution upholds Socialism as a basic economic principle, which necessarily means welfare economy. Communism or extreme Socialism

requires the State to take-up the control of the properties and assets under the State control and the State allows citizens to use them as per need, assessed by the State. But our Constitution, under section 13, states that properties shall be owned by the (i) state, or (ii) cooperatives or (iii) Individual citizens. So, our Socialism really means 'welfare economy' as practiced by some of the European countries, particularly the Scandinavian countries. Welfare economy, by concept and practice, uses market economy as a tool of freedom as well as inclusion. But Capitalism provides extreme freedom, neglecting inclusion. Hence, welfare economy contradicts Capitalism. Some of our leaders are under the illusion that welfare economy and Capitalism are the same. In fact, both belong to the market economy continuum, welfare economy at the middle and Capitalism at the right yet contradicting each other on the matters of inclusion and concentration of wealth. Capitalism clearly stands for concentration, consequently negating inclusion. On the other hand, the welfare economy (humane Socialism) advocates diversification of wealth, resulting in the inclusion. Our Constitution stands for Socialism as the basic economic principle of the State, which may be explained as humane Socialism or welfare economy, standing in the middle of 'market economy continuum' implementing a model which ensures inclusion through diversification of wealth and at the same time resisting high concentration of wealth (i.e. Capitalism). It is evident that inclusion is our Constitutional obligation. Let us try to understand how we can proceed towards the obligation of inclusion. To achieve this objective, we need an appropriate policy, a strategy, and an implementation plan. It is a very hard task, if we ponder over the present position of concentration of wealth. Gini commonly measures financial inequality co-efficient, which stood at 0.24 in 1974, 0.46 in 2016 and 0.48 in 2017. Inequality is growing at a fast rate and stands at an alarming level. Social happiness indicators will be grossly affected if we fail to reduce inequality. At this stage, halfhearted measures will not yield results. Because, wealth is power. Few wealthy groups may counter diversification measures however, the scope of this paper is limited to accommodate digital financial services and allied areas. Without policy commitment, only financial services measures may yield modest results. For financial inclusion, Banks, NBFIs and micro-credit organizations may play vital roles. They may act in their traditional way. They may also join the digital platform. Most of the banks and NBFIs are now providing online services throughout the country. Government banks are lagging but catching up quickly. All banks are expected to be fully automated by the next two years.

Most of the banks are providing ATM services in the city areas. Service provider banks have formed a platform to ensure that customers of all banks may use the ATM booths of any bank. Banks may stretch ATM services in the non-urban and rural areas if a demand can be created there with proper strategy for financial inclusion. Opening and operation of bank branches involve high expenses and therefore are prohibitive in the vast rural areas. This is a big challenge for financial inclusion. Some banks have taken some innovative steps to face this challenge. It includes agent banking, phone banking and low-cost



operating center. Low cost operating center is yet to become effective. Let us take stock of other two innovations. Agent banking involves selection of agents who will handle small transactions on behalf of a bank. Agents have their own other business. They must enjoy good reputation in the area, so that bank customers have faith in them. Transaction ceiling is given depending on their wealth and activity. Agents are connected with their principal bank through the phone system. The internet connection is also available with some agents. Gradually, we envisage a platform of agents with digital system.

Now in Bangladesh, there are 13 crore subscribers of mobile telephone. The cell phone is quickly transcending as a vital instrument for financial inclusion. Since every adult citizen possesses a cell phone, dramatic financial inclusion is possible through mobile phone banking. Mobile phone banking has already opened a new era in spreading banking activities throughout the country. The central bank has authorized, a good number of banks to introduce mobile phone banking through the Agents. Two banks are doing mobile phone banking in a large scale. BRAC Bank and Dutch-Bangla Bank are the pioneers. Other authorized banks are following. Last year, cell phone companies applied to the Central Bank for a permission to go to mobile phone banking. License to open mobile phone companies is given by BTRI who are not authorized to regulate financial dealings. On the other hand, the financial regulator, the Bangladesh Bank, has no authority to regulate mobile phone companies. Hence Bangladesh Bank had no way but to reject the proposal. The Central Bank has entrusted these responsibilities on the banks only. Banks are operating through selected agents. Mobile phone companies remain tied to banks. This chain is being strengthened gradually towards achieving financial inclusion. We have a word of caution. Some allegations are coming against mobile phone companies in matters of money laundering and illegal financial transactions. The Central Bank has recently closed more than three thousand accounts, operated through mobile phone banking. Financial Intelligence is closely watching alleged transactions. We must find out ways to stop illegal transactions which are great hindrances towards sound mobile/agent banking and consequent financial inclusion.



SPEECH BY THE CHIEF GUEST (DAY-2)

Dr. Qazi Kholiquzzaman Ahmad
*Chairman, Palli Karma Sohayak Foundation &
Dhaka School of Economics*

Chairman of the session, Dr. Toufiq Ahmed Chowdhury, Special Guest Mr. S.K. Chowdhury, Deputy Governor of Bangladesh Bank, Keynote Speaker, Khandakar Ibrahim Khaled, and Mr. Rajeev Gupta of UNCDF, participants, guests, ladies and gentlemen. I think everything that needs to be said has been said firstly by Mr. Ibrahim Khaled and then by Mr. Sur Chowdhury.

Let me go over a few conceptual issues as I see them. First, of course, what is financial inclusion? Mr. Ibrahim Khaled has given his take on it, but I have a slightly different take. Just an amount of money (i.e. 10tk, 20tk, 20000tk) is not financial inclusion in my judgment. “Just keep some money and that’s financial inclusion”. No, it is not unless you give money either as credit or arrange that someone earns that money. But if that is the only amount available to a person, what will happen after that s/he uses that money and then what? So, there must be an arrangement for continuous earning of income or a continuous flow of money to whatever means you are giving transfer payment. And that’s not feasible even for the poor, which is 40 million! Therefore, it must be financial inclusion defined with reference to income-earning opportunity. Therefore, it includes training, skills training, access to technology, access to market information and access to marketing assistance. So, money plus all these things—that must be a package. Then it will be inclusive. Otherwise inclusion means you give some money, you have an amount of money and we distributed to 10tk to everybody, we are all included! But to what end? So, I think one must think through. We should not be carried away by some of the concepts that have been developed here and there; particularly in the West. We must ground our thinking about our own realities. I traveled through the country, throughout the villages and I see that unless you provide a package of services that I have just described or may be a different one, financial inclusion will mean very little. Okay, that's the first point.

The second point is about obligation that Mr. Ibrahim Khaled has talked about at length. Yes, Constitutionally we are obligated that everybody should be included but not just with financial services but in the development itself. They must be a party to develop both in terms of contribution and in terms of sharing the benefits. Constitution for basic principles has been mentioned. But if we go back a little, not just They have no trade declaration and do not know what is there if they have seen it. These two words are, and I am first mentioning these words and then I will say how important they are. First, human rights, is mentioned and the second is human dignity. Say human rights and human dignity for whom? Not for us here, not for people who are at the top of the society, top echelon of all the services and economic units, but all the people, everybody! To Nijhum Dwip, to Kutubdia, to Satkhira, to Sunamgonj Haor, to Kishoregonj,



everybody who is at the bottom of this scale, everybody should enjoy human rights and should live in a humanly dignified manner. So that is the obligation and of course democracy, Socialism. Socialism was in the Constitution and it was taken out and then put back. But this is a descriptive definition of Socialism, what we have now in the Constitution, it is in terms of proper judgment. It does not express the issue of ownership, etc. It just protects your rights somehow without going to deeper issues. So that is the way it has been defined, but it is there. We have handled the equality of people there. Now there is a debate among political circles and as well as among economists for a long time and that is about which one is first, rights or Development? Particularly in the developing countries, the politicians claim that development is first, and we have to develop. And then the lights will come afterwards. Among economists also there is a division. Some say yes, development must be first, rights will come later. Some say no, the rights first and then development and there are still others like Amartya Sen; saying that both rights and development can go hand in hand. This is an issue which has been debated and debated and still being debated. But I agree with Amartya Sen that, both rights and development can go hand in hand. There are many others with the same thought, I am just mentioning one name because he is the most well-known and we have proven that at local spaces.

Khandaker Ibrahim Khalid and I, we share a governing body which is of PKSF, and we are implementing what is called ENRICH. ENRICH is a programme where we address all the issues of human living because human life is multi-dimensional. Just addressing finance or money and giving them some money is not sufficient. It was claimed that if we give them some money and all other problems should take care of themselves and poverty will be eliminated from the face of the Earth. That was claimed, but it has not happened. Therefore, all aspects of human living must be addressed and provided in our reach, we have included everything: education, health services, training, skills training, social capital, and you think of whatever one needs. Now we have a climate change impact, that is another one which is a very crucial issue, so we addressed that as well. If we go to the ENRICH unions, it is an area development also, area and totality, total people there. So, we, that is about one hundred and fifty-three unions throughout the country-from Ireland, from Ireland to the coast to inside the country. Where development is going on and we have ensured educational right and we have ensured health rights. We have ensured other rights also at that level. And I believe the development is a political process. It is not for the PKSF, it is not for the Bangladesh Bank, and not for any other organization. To see that development will take place throughout the country; no, it is a political process. The political process has reached everywhere. And therefore, we have included Union Parishad as a partner in this process. I was told by many that do not do that. If you include Union Parishad, your program will collapse. Mr. Ibrahim Khaled and we on the board decided that, we will and see. Now our experience is very good.

Our partnership going well. They are the people who can mobilize the local forces. You ignore them you ignore the reality. By ignoring the reality, how can you achieve development? You cannot. So, I invite an open invitation to everybody on behalf of the board and myself that you go anywhere you want what I have just said. If I am going to tell you the whole it will last about one hour, so I am not going into that I will just give you the very broad outline what we are doing there. There both developments are taking place and human right is also being protected. I would not say a lot about the political right that is not our area actually. But when you have the economic strength, you also enjoy some political rights and eventually that will all happen. But this is only in local spaces, hundred and fifty-three unions including forty-five lakh people. So, the whole country remains there, but it is possible that what I am saying. Now, inequality is the reason why poverty is persisting. In a statement Mr. Khalid has said that very well. There are three types of inequality we are concerned with, one is income inequality, one is consumption inequality and wealth

equality. Globally, only 1% of the richest people control half of the wealth and the 99% the other half. Bangladesh is not that bad. But it is quite high in inequality. Income inequality has been mentioned as 0.48 Gini coefficient, which is not actually bad enough, but not as bad as globally or even in the United States where it is 1% controlling 40% of the wealth. Also, the consumption inequality is similar. It is 0.32 and it has been there for some time now. It has tended to an increase a bit in last 2 to 3 years. It was going down. But I am very concerned about the wealth inequality. We do not have data for that. Wealth inequality is becoming worse in Bangladesh also. And this is not by earning money legally, in large measure illegally: usurpation in the case of rivers, water, banks and way more. Then there is no justice, that is another problem. So, if these people are not brought to the law, then others will be encouraged to do it. If wealth inequality becomes worse and worse, whatever else we do, these people will control everything- the policy, economy, politics as well. So, financial inclusion by providing few thousand taka, few hundred taken to the down-trodden to the people is not the solution, but it is important! But money must go, it must go along with other elements which will help them move forward, particularly education and health services, these two are extremely important. Unless these two are ensured it will be very difficult to move forward. And moving forward is dependent on the human capability approach to poverty alleviation and development. So, if we are going to have a development which is inclusive, it is not just finance! It includes development then we must give importance to these aspects of human capability development along with providing financing. It is not one dimensional, it is multi-dimensional. Just money does not help that much. The next thing is about digitization. We have done, of course, tremendously well in that. And both Mr. Ibrahim Khalid, Mr. Sur Chowdhury, they have described where we are today, particularly Mr. Sur Chowdhury and what we are going to do. And the Government is developing its policy and its strategy. Then we will do enough within the next few years to be recognized, we have already been recognized. Recognized as moving towards our goals fast, fast enough. But of course, challenges have been mentioned, Sur Chowdhury has mentioned one challenge which is the use of this technology may be inclusive, we are trying to do inclusive financing, but it could be a divider also. So, we must be careful that we do not have a digital divide. We have income divide, we have consumption divide, and we are going to have a bad enough, I think unless we stop it, wealth divide.

Now, on top of it if you have a digital divide, then you have a country which is not included, which is not going on a sustainable path. And sustainable development which we have embarked on like the globe- all other countries in the globe- the first thing is nobody should be excluded, everybody should be included, must be included otherwise it is not sustainable development. If a beggar in Kutubdia is left out, that is it! Ultimately, we do not have a sustainable development here, everybody should be included. But that requires not just finance, it requires a whole lot of other things. It requires a great deal of organizing, it requires a great deal of getting people together, it requires a great deal of making all the other available services along with the finance and a whole lot of things. So, therefore if we want an inclusive society, a sustainable society which is inclusive, equitable and everybody's rights and it also talks about human dignity. So, human dignity of everybody must be ensured. One other thing I will mention and then I will finish. That is about the Artificial Intelligence that Mr. Sur Chowdhury has mentioned. This is developing very fast and I think an American politician, or somebody said, I cannot remember properly, that the future wars will be fought with the Artificial Intelligence. We have seen drones being used. And there are many other ways of future wars. The nuclear bomb was based on a development that was to be for peace, for helping people, but that has degenerated into a nuclear power supposed to be useful for human development, but it has become a human threat. One of the two or three greatest threats, this is the one. So, all technologies have upsides and downsides. So, we must be clear about the upsides and the downsides; promote upsides and control downside. And, when we use technology, some other thing come up, cybercrime for example. That is



coming up no. So, you must control that. So, it is not just a one-way street. Say, digitalization: from mobile phone and then the cost of it. In Bangladesh 20 taka per thousand; in India it is 250taka up to 10,000. And 10,000 to 20,000 it is a 5taka transfer. So, we have these aspects to investigate - the cost of transfer of money. I do not know why it should be so costly. One, there is monopoly there, almost virtual monopoly. And now two, Dutch Bangla and BRAC, they control 85% to 90%. So, where there is a monopoly, this is the result. So, how are we allowing that monopoly to continue? That is one of the questions. And we have examples from our neighboring country. There are a whole lot of issues. So, just saying that we have so many mobile phones with so many people, crores of people, and then transfer the money. We must think about what the results will be; what the ultimate results will be; who will benefit. If it all comes back to the few groups of people, one way or another, the inclusion will mean nothing to most of the people. So, that is what inclusion means, everybody! So, if a large group of people becomes prey to other kinds of exploitation, then maybe we do not do it, unless we can control that. Now, market economy, neo-liberalism. So, the Government cannot do anything, the Ministries cannot do anything because it is a market economy. But the Constitution says Socialism. So, you are not acting Constitutionally. If you do say that, you must be able to control that or change the Constitution. No Socialism-meaning inclusive; define in a loose way including everybody. So, I have been thinking and we are trying to act locally, trying to resolve some of the issues I have indicated and there are many others. We cannot resolve it at our level, but that must be done by some, by the Bangladesh Bank, others by the Ministry, others by the Government together soon. So, these are the issues as I see it. As we move forward on a sustainable pathway and there is a political commitment, a very strong political commitment to sustainable development. Bangladesh participated in the process of developing of the agenda and started very well in terms of trying to implement the agenda. Even before the start of the agenda on 1st January 2016; a committee was set up in the Prime Minister's office to investigate how we can implement these, how finance can be raised and so on. So, that reflects the strong commitment to it. But we should not deflect from the main course as we go along, that everybody should be included.

SPEECH BY THE SPECIAL GUEST (DAY-2)

Mr. Shitangshu Kumar Sur Chowdhury
Deputy Governor, Bangladesh Bank

Distinguished participants, guests, ladies, and gentlemen. I am really pleased to be present here today to address the inaugural session of the second day of the Annual Banking Conference 2017 organized by BIBM. The papers presented at today's conference by academicians and practicing bankers will help us in identifying many critical issues and challenges confronting the banking industry in Bangladesh. I am confident that the collective wisdom of the distinguished paper presenters and discussants will generate valuable inputs for the policymakers.

Today's conference theme is 'Accelerating Digital Financial Services (DFS) to Achieve Financial

Inclusion by 2021'. I believe digital financial services will not only help in financial inclusion, but also accelerate the growth of much-needed rural economic activities by quickly transferring funds from urban to rural areas. Moreover, digitalizing financial services are our national priority. In this case, Mobile Financial Services (MFS) and Agent banking have already initiated a revolution in the country. Through the multifaceted financial inclusion initiatives, the Bangladesh Bank is enhancing the intermediate target of reducing financial inequality with an ultimate objective of slimming income inequality down with job creation among the un-served and under-served population segments. It is my immense pleasure to recall in front of you that the Bangladesh Bank was awarded in the recent past for its contribution in a substantial expansion of Mobile Financial Services (MFS) in Bangladesh.

A countrywide massive modernization of the financial sector IT infrastructure, including fully automated online settlement of paper based and electronic fund transfers, online credit information and supervisory reporting, etc. have spawned the exponential growth of mobile banking, vastly benefitting the underserved poor. The rapidly digitized banking enabled mobile financial services to encourage the women to participate more in the financial services narrowing down the gender disparity. With the progress already achieved in online interbank settlements and in mobile telephony, banks can and should now move fast in expanding mobile phonebased banking services reaching out to new depositors in rural and itinerant urban populations. As a part of the financial inclusion, the Bangladesh Bank has been promoting mobile banking which will certainly bring unprecedented change in financial inclusion. School banking and financial literacy programmes are also notable development by the Central Bank. The Bangladesh Bank is also focusing on full digitization of the banking operations. All these aimed at building a viable, dynamic, and efficient financial infrastructure which would ensure financial stability and lead the nation to achieve the sustainable development goals ahead of time.

I must congratulate the Director General of BIBM and his team and UNCDF for accomplishing the conference programme on digital financial services. With these few words, wishing all the best for the day-2 conference activity, I would like to conclude here. Thank you very much.



SPEECH BY THE CHAIR (DAY-2)

Professor Dr. Toufic Ahmad Choudhury
Director General, BIBM



It was a very amazing delivery by our honorable chief guest Dr. Qazi Kholiquzzaman Ahmad. Now we are at the end of this inaugural session of the second day's programme and let me extend my thanks to our keynote speaker Mr. Khondkar Ibrahim Khaled, who said that Inclusive Finance should be the Constitutional obligation on the part of our financial system. I also extend my thanks to our special guest Mr. Shitangshu Kumar Sur Chowdhury for his delivery on the Central Bank's responsibility as well as the Central Bank's initiatives explaining what the Central Bank is doing and finally we have heard our honorable chief guest Dr. Qazi Kholiquzzaman Ahmad, who has really said that for an inclusive society, we need a lot of inclusive tools and one of the tools is the financial inclusion. He also wants us to be

careful so that digitalization does not become a digital divide instead of inclusion. We are also thankful to Mr. Rajeev Kumar Gupta for his very nice remarks and we are very thankful to UNCDF for sponsoring today's program.

So, now, we are at the end of the programme. So, therefore, I extend again our heartfelt thanks and gratitude to our honorable chief guest, special guest, keynote speaker and everybody present here. So, with this, we conclude this inaugural session.

Thank you all.



CONCLUDING SPEECH (DAY-2)

Abu Hena Mohd. Razee Hassan
Deputy Governor, Bangladesh Bank

Distinguished participants, guests, ladies and gentlemen.....

I am happy to be present hereto address the closing ceremony of the two-day long Annual Banking Conference 2017 organized by the Bangladesh Institute of Bank Management. I think the papers presented in the conference by academicians and practicing bankers will help us in identifying many critical issues and challenges confronting the banking industry of Bangladesh. I appreciate the efforts where academia and practitioners meet together to sort out crucial problems of this sector and come out with innovative solutions to those problems. I am confident that the collective wisdom of the distinguished paper presenters and discussants will generate valuable inputs for the policymakers.



In recent time banking sectors of the entire world are coming across a number of newer risks and Central Banks have become very active than ever before to address these risks. In our country, Bangladesh Bank continues to focus on strengthening the banking system and streamlining functioning of its various segments. The initiatives along these lines included deregulation of operations of banking and financial institutions, tightening of prudential regulation and improvement in supervisory oversight, promoting transparency and market disclosure etc. In addition to mainstreaming central banking, Bangladesh Bank initiated a comprehensive financial inclusion campaign to ensure the availability of banking services to the un-served and under-served population segments through various support services. As a part of the financial inclusion, Bangladesh Bank has been promoting mobile banking which will certainly bring unprecedented change in the area of financial inclusion. School banking and financial literacy programs are also notable development by central bank. Bangladesh Bank is also focusing on full digitization of the banking operation. All these aimed at building a viable, dynamic and efficient financial infrastructure which would ensure financial stability and lead the nation to achieve the sustainable development goal.

No doubt, BIBM has done a magnificent job by arranging and organizing this conference. I must congratulate BIBM and its competent team on accomplishing such a difficult assignment. I would like to give special thanks to the BIBM's partner organization in this conference whose efforts made this conference a success particularly, UNCDF, Q-cash, Enroute and media partners Channel 24, Banik Barta, Dhaka Tribune and Amra Network Ltd..

With these words, I declare formal closing of this program.

Thank you very much.



Part-II



Plenary Sessions: A Summary

The first plenary session titled “BIBM- Q-Cash Plenary Session on “Macro Banking Environment”” was presided by Professor Shibli Rubayat Ul Islam Dean, Faculty of Business Studies, University of Dhaka. The panelists of the session were Mr. Md. Yasin Ali, Supernumerary Professor, BIBM; Mr. Faruq Mainuddin Ahmed, Additional Managing Director, Trust Bank Limited; Dr. Khondakar Golam Moazzem, Research Director, Centre for Policy Dialogue (CPD); Dr. Prashanta Kumar Banerjee, Professor & Director (R,D&C), BIBM.

Six papers were presented in this session. The papers were (i) “Do Corporate Governance and Credit Risk Management have Implication on Bank Performance? An Empirical Study on the Private Commercial Banks of Bangladesh” by G. M. Wali Ullah, Lecturer and Nafiz Ul Fahad, Lecturer, of Independent University, Bangladesh (IUB); (ii) “Intellectual Capital and Bank Performance in India: An Application of Panel Data Quantile Regression” by Santi Gopal Maji, Assistant Professor and Tapan Kumar Chakrabarty, Associate Professor of North Eastern Hill University, Shilong, India; (iii) “Impact of NPA on Banking Performance & Shareholder Value Creation” by Dr. Chitra Gounder, Assistant Professor, Payal Mogre, Assistant Professor and Vimmy, Assistant Professor of Thakur Institute of Management, Mumbai, India; (iv) “The Myth and Reality of Islamic Banking Practices in Bangladesh: New Evidence from the Structural Equation Modeling Approach” by Md. Mizanur Rahman, Lecturer, North East University, Sylhet, Mohammad Ashraful Ferdous Chowdhury, Assistant Professor, Shahjalal University of Science and Technology and Md. Mahmudul Haque, Doctoral candidate and Research Assistant, INCEIF, Kuala Lumpur, Malaysia; (v) “An Empirical Study to Assess If Islamic Banks’ Assets Generate Less Revenue than Its Conventional Counterpart” by Md. Nurul Islam Sohel, Senior Officer, Islami Bank Training and Research Academy and Dr. Md. Mizanur Rahman, Director Research, Islami Bank Training and Research Academy; and (vi) “The Causal Relationship between Financial Development and Environmental Quality in Bangladesh: An Empirical Study” by Dr. Sakib Bin Amin, Assistant Professor, A.M. Muhib Morshed, Lecturer and Aroni K. Porna, Lecturer of North South University.

Plenary Session 1:

BIBM-Q-Cash Plenary Session on “Macro Banking Environment”

Chair:	Professor Shibli Rubayat Ul Islam Dean, Faculty of Business Studies, University of Dhaka
Panelists:	• Mr. Md. Yasin Ali, Supernumerary Professor, BIBM • Mr. Faruq Mainuddin Ahmed, Additional Managing Director, Trust Bank Ltd. • Dr. Khondakar Golam Moazzem, Research Director, Centre for Policy Dialogue (CPD) • Dr. Prashanta Kumar Banerjee, Professor & Director (R D&C), BIBM

Title of the Papers:

Paper-1:	Do Corporate Governance and Credit Risk Management have Implication on Bank Performance? An Empirical Study on the Private Commercial Banks of Bangladesh
Paper-2:	Intellectual Capital and Bank Performance in India: An Application of Panel Data Quantile Regression
Paper-3:	Impact of NPA on Banking Performance & Shareholder Value Creation
Paper-4:	The Myth and Reality of Islamic Banking Practices in Bangladesh: New Evidence from the Structural Equation Modeling Approach
Paper-5:	An Empirical Study to Assess If Islamic Banks’ Assets Generate Less Revenue than Its Conventional Counterpart
Paper-6:	The Causal Relationship between Financial Development and Environmental Quality in Bangladesh: An Empirical Study

Paper-1: Do Corporate Governance and Credit Risk Management have Implication on Bank-Performance? An Empirical Study on the Private Commercial Banks of Bangladesh: This empirical research was aimed to investigate the relationship between the bank's corporate governance attributes (board size, board independence, number of board meetings), credit risk and financial performance of the private commercial banking sector of Bangladesh. Over the last few years, more and more proofs are coming to lights on the huge amount of loan defaulting, primarily by the state-owned commercial banks (SOCBs). The stylized evidence of growing fraudulence and default in the banking sector gives rise to a critical question, whether these banks are governed effectively by their boards or not – which in turn should result in sound risk management and sustainable profitability. Despite immense number of existing literature being present on the impact of corporate governance on bank's credit risk and performance, very few have actually examined that from the context of developing countries. Using a panel data regression model on all the listed private commercial banks listed in Dhaka Stock Exchange (DSE) for 8 years, this study examined how traditional corporate governance variables impacted the credit risk management and financial performance of these banks. Empirical findings strongly suggested that private commercial banks should look to effectively employ audit committee and pack up bigger boards with experienced members to guarantee sound risk management and administer the managers. Outcome of this research offers valuable information for regulatory authorities, stakeholders, policy makers and academia.

Paper-2: Intellectual Capital and Bank Performance in India- An Application of Panel Data Quantile Regression: The purpose of this study was to explore the impact of intellectual capital on the financial performance of listed Indian commercial banks for the period 2000 to 2016 by employing quantile regression model in panel data set up. The study proposed that the panel data mean regression model is inadequate to explore the true impact of intellectual capital and a set of quantile regression models is necessary to explain adequately the effect of intellectual capital at different locations of the conditional distribution of bank performance. The results suggested that panel data mean regression model provided a partial view of the relationship between intellectual capital and bank performance after controlling the effect of physical capital, specifically in a situation when some out-performers or non-performers are present in the data set. In this situation, the results of quantile regression indicated that the positive impact of intellectual capital is significant only at upper tails of the distribution of bank performance. The results of quantile regression for panel data also showed that the impact of intellectual capital becomes stronger with higher degree of precision when the banks' value goes up.

Paper-3: Impact of NPA on Banking Performance & Shareholder Value Creation- In the developing economy Banking Sector plays a vital role. The economic progress of a nation and development of banking is invariably interrelated. A major threat to banking sector is prevalence of Non-Performing Assets (NPAs). NPA represent bad loans, the borrowers of which failed to satisfy their repayment obligations. NPA in loan portfolio affects operational efficiency which in turn affects profitability, liquidity and solvency position of the banks. Keeping this in view, this study has been carried out to study the causes and effects of the Non-Performing Assets on banking performance and shareholder value creation. For studying impact of NPA on bank performance, Bank performance measures such as ROE, EPS, DPS has been used. For studying the impact of NPA on shareholder value creation, EVA has been used as measure for shareholder creation. For studying the impact of NPA on market performance of equity share of Indian banks, MVA has been used as measures. In short this study has examined overall impact of NPA on bank performance, share value creation and market response. The study emphasized the period of 2005-2017 for Indian commercial banks. Data Collection has been done from secondary sources such as the websites of RBI, CMIE, Prowess, and Ace Equity etc and data analysis and interpretation has been done through Panel data regression. This analysis will be useful to the investors of the banking sector of equity, regulators of banking, bankers and investment bankers.

Paper-4: The Myth and Reality of Islamic Banking Practices in Bangladesh- New Evidence From The Structural Equation Modeling Approach: With 15-20% growth annually, Islamic banking has widened in more than 75 countries and has been emerged as an alternative financial system in many Muslim countries. Whatever the degree of success of Islamic banking, it's not clearly distinguishable to its counterpart from both the customer and regulators aspect. The objective of this research was to feature some significant factors that are necessary for the fulfillment of the expectation of Islamic banking practices in Bangladesh. For testing the expectation and reality of Islamic banking practices, the study conducted of 375 customers. This study found that both practitioners and customers were driven to Murabaha and Mudaraba (savings) product rather than the equity based Musharaka financing. Factor analysis reduced the variable which influences the customer experiences towards banking and financial provision, and Sharia-compliant banking. The study used mediating factors for the first time (perception on relative advantage, perception on perceived risk, perception on compatibility) with the reality of Islamic banking. The Structural Equation Modeling (SEM) approach suggested that mediating factors have a strong relationship with the reality of Islamic banking. It is evident that mediating factors influenced the reality of Islamic banking thus the management authority can transform their constraints into competitive advantage.

Paper-5: An Empirical Study to Assess If Islamic Banks' Assets Generate Less Revenue than Its Conventional Counterpart- Islamic banks, being guided by the principles and rules of shariah, have some inherent limitations in selecting the operational sectors and securitized instruments for financing compared to their conventional counterparts. This study aimed to bring to light whether Islamic banks, a growing subset of banking industry in Bangladesh, have further opportunities in generating revenue through deploying their resources. Six Bangladeshi Islamic banks and 12 of its conventional counterparts were purposively selected for this study. Five years (2011-2015) secondary data were used to assess the asset turnover ratio to compare the earning efficiency of Islamic banks with that of conventional ones. Results found that Islamic banks' assets generate less revenue than its conventional counterparts. The results also found that Islamic banks have further scope of enhancing their income from some sources like, income from shares and securities and other operating income. The paper recommended some measures for the concerned stakeholders like, Islamic banks themselves, Government, and the Central Bank for introducing shariah compliant securitized instruments, level playing policy support, and technology based products and services which can help minimize the gap of income generation opportunities between Islamic and conventional banks.

Paper-6: The Causal Relationship between Financial Development and Environmental Quality in Bangladesh: An Empirical Study: This paper examined the causal relationship between financial development and environmental quality in Bangladesh over a period of 1980-2015, using a multivariate model. This model used trade and economic growth as control variables and considered two financial indicators based on previous literature to capture the overall impact of financial development. Researchers employed the Augmented Dickey-Fuller (ADF) test and found that all the variables were stationary at first differences. Next, upon applying the Johansen cointegration method followed by the Granger causality test and Vector Error Correction Model (VECM) analysis, the empirical findings indicated that there exists a long-run cointegration between financial development and CO2 emissions. Upon the use of Dynamic OLS approach, the results confirmed that financial development leads to an increase in CO2 emissions in the long-run. However, no short-run relationship was found between the concerned variables. The results open up valuable insights for the policymakers, since they may fall into the trap of enacting policies that are based on the short-run phenomenon only. The financial development in Bangladesh could lead to rapid industrialization and infrastructure development to boost economic growth and thus degrade the environment in the long-run.

Plenary Session-2

BIBM-Enroute Business Session on “Operational Issues in Banking”

The second plenary session titled BIBM-Enroute Business Session on “Operational Issues in Banking” was presided by Dr. Faisal Ahmed, Chief Economist, Bangladesh Bank. The honorable panel discussants for this session were Mr. Helal Ahmed Chowdhury, Supernumerary Professor, BIBM, Mr. Mosleh Uddin Ahmed, Managing Director & CEO, NCC Bank Limited and Dr. Sarwar Uddin Ahmed, Dean, Business School, Independent University Bangladesh.

In this session six papers on different issues related to banking sectors have been presented. The first paper in the session was titled “Export Development Fund in the Banking Sector of Bangladesh: Status and Challenges”. The authors of this paper were Antara Zareen, Assistant Professor, Tofayel Ahmed, Lecturer of BIBM and Md. Morshed Anwar, Export Import Bank of Bangladesh Limited. The title of the second paper was “An Analysis of Determinants of Job Satisfaction of Private Commercial Banks in Bangladesh” and the authors were Md. Fazle Fattah Hossain, Janata Bank Limited, Md Abdul Wadud, Professor, Department of Economics, Rajshahi University and Mohammad Zahid Hossain, Professor, Department of Finance, Rajshahi University. “Effect of Human Resource Practices in the Employees Intention to Stay of Nepalese Banking Sector” was the title of the third paper which was composed by Yogendra Adhikari, Pokhara University, Nepal. The fourth paper in the session was titled “Convergent Effect of Work-Family Conflict on Job Satisfaction of Commercial Bank’s Employees in Bangladesh: Does gender Moderate the Effect?” and the authors of this paper were Md. Saidur Rahman, Lecturer, Mohammad Jamal Uddin, Assistant Professor, and Mohammad Mizanur Rahman, Assistant Professor of Metropolitan University, Sylhet. The title of the fifth paper was ‘Structural Equation Model: Bankers’ Satisfaction on Service Quality’ written by Mia Muhammad Mustafiz Munir, Manager, BASIC Bank Limited, Dhaka. ‘Annual Sustainability Report: A Study on Financial Services Industry in Bangladesh’ was the sixth paper in the session and it was prepared by Dr. Md. Mahabbat Hossain, Assistant Professor of BIBM.

Plenary Session-2

BIBM-Enroute Business Session on “Operational Issues in Banking”

Chair: Dr. Faisal Ahmed
Chief Economist, Bangladesh Bank

Panelists:

- Mr. Helal Ahmed Chowdhury, Supernumerary Professor, BIBM
- Mr. Mosleh Uddin Ahmed, Managing Director & CEO, NCC Bank Limited
- Dr. Sarwar Uddin Ahmed, Dean, School of Business Independent University Bangladesh

Title of the Papers:

Paper-1:	Export Development Fund in the Banking Sector of Bangladesh: Status and Challenges
Paper-2:	An Analysis of Determinants of Job Satisfaction of Private Commercial Banks in Bangladesh
Paper-3:	Effect of Human Resource Practices in the Employees’ Intention to Stay of Nepalese Banking Sector
Paper-4:	Convergent Effect of Work-Family Conflict on Job Satisfaction of Commercial Bank’s Employees in Bangladesh: Does Gender Moderate the Effect?
Paper-5:	Structural Equation Model: Bankers’ Satisfaction on Service Quality
Paper-6:	Annual Sustainability Report: A Study on Financial Services Industry in Bangladesh

Paper-1: Export Development Fund in the Banking Sector of Bangladesh: Status and Challenges- The focus of this research was on the importance, present status and future challenges on EDF. As export finance system can play a significant role in pursuance of Government's export-led growth strategy, the Government of Bangladesh has introduced several financial incentives for increasing export of our country over past several years, along with Bangladesh Bank (BB) through undertaking various initiatives like Export Development Fund (EDF). Supporting the exporters, who are trying to diversify their products into higher value ones, is the main goal of the EDF facility; through making interest rate more competitive on foreign currency loans for them. With the growth of the demand for EDF, challenges like, malpractice by bankers, willful default of clients, and fund diversion risk have also risen causing operational obstacle at proper utilization of the fund. Absence in quantification of Value addition of export products, lack of monitoring and information gap of criteria for being in EDF list have aggravated the situation more; disclosure of data for proper monitoring and motivation, along with the integration of the stakeholders' are required for better utilization of the EDF facility. Authors have emphasized on some actions like lower lead time to get EDF, Minimization of EDF's Fund Diversion Risk, proper monitoring for malpractice under EDF, integration among stakeholders etc. which need an intense considered from regulatory body for better utilization of the EDF facility.

Paper-2: An Analysis of Determinants of Job Satisfaction of Private Commercial Banks in Bangladesh- This paper had examined the determinants of job satisfaction of the employees of three private commercial banks (PCBs) chosen based on purposive random sampling technique. Contrary to the popular believe that, supervisor support plays the most important role in ensuring the satisfaction towards an employees' working life; has been found to be the least motivating factor, and working environment ranked the highest job satisfaction motivator among the employees of the private commercial banks, who were subject to the study. Of the many other factors, prize distribution, promotional opportunity, job security, timely vacation, salary, financial benefits other than salary etc., and co-worker relation, branch computerization, job fit, monotonous job nature, job knowledge and corporate social responsibility (CSR) were found significant. The study report suggested that, the private commercial banks should enhance working environment and increase productivity of the employees through proper prize distribution system for their good works.

Paper-3: Effect of Human Resource Practices in the Employees' Intention to Stay of Nepalese Banking Sector- The main objective of the study was to examine the relationship of HR practices with the employees' intention to stay in Nepalese banking organizations. With the help of exploratory factor analysis, various factors contributing to HR practices were identified and established as the independent variables and attempted to observe how they had impact in the long-term stay plan of the employees with their current banks. While studying on this issue, concluded that, only established factors that were usually used to measure the retention of employees could not be generalized for the Nepalese banking sector. His work focused the contradiction from well-established studies that, training and employee relation practices did not work as an effective tool to retain employees in Nepalese banking organizations; whereas complied with other theories that, compensation and benefit plans, and practices aligned with the career development plans of the employees had an influence on their intention to stay in the current job.

Paper-4: Convergent Effect of Work-Family Conflict on Job Satisfaction of Commercial Bank's Employees in Bangladesh- Does Gender Moderate the Effect?: This study had explored the effect of Work-Family Conflict (W-FC) on employee's job satisfaction of commercial banks in Bangladesh. Convenience sampling method has been used for this research. Different statistical measures such as descriptive statistics, zero-order correlation, Confirmatory Factor Analysis (CFA) and multiple regression analysis had been used to explore the convergent effect of WFC/FWC on the job satisfaction and other research observations. Results of the investigation confirmed the

significant negative relationship between WFC/FWC and job satisfaction. But, in terms of effect, WFC had a negative effect on job satisfaction and it was statistically significant. Though the FWC had also negative effect on job satisfaction but it was not statistically significant. This study suggested that higher authorities in banking organizations should take necessary action to minimize the work-family conflict experienced banking employees to ensure their job satisfaction.

Paper-5: Structural Equation Model: Bankers' Satisfaction on Service Quality- The research had mainly aimed to investigate the relationship between Quality of Services i.e. Information Quality, Service Quality and System Quality and Bankers' Satisfaction i.e. employee satisfaction in a particular region of Bangladesh. The study was trying to find out the relationship or impact of Quality of Services (i.e. Information, Service and System Quality) on Bankers Satisfaction and casual relationship among Information, Service and System Quality. A cross sectional survey was used for this research to reach the objectives and hypothesis of the study. Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) had been used with the information provided by the bankers to find the relationship between Service Quality and Bankers' Satisfaction. Results of this study indicate that Information and Quality of Services has positive impact on Bankers' Satisfaction and System Quality had negative impact on Bankers' Satisfaction. The study emphasized on the Quality of Service and depends on the customer expectations. If banker could enrich themselves by obtaining information then he or she could perform well to provide service, which might lead bankers to obtain customer satisfaction as well as this also had a positive impact on bank management.

Paper-6: Annual Sustainability Report: A Study on Financial Services Industry in Bangladesh- The study had emphasized to reveal the practice of annual sustainability reporting by the financial services industry of Bangladesh. The study was based on banks and non-bank financial institutions of Bangladesh as other financial organizations do publish sustainability report. Only a good financial indicator may not ensure sustainability of an entity, as global warming and climate change have become an important aspect for all types of businesses in doing their regular activities; which provided the platform for the study to observe the status of Annual Sustainability Report (ASR) published by Financial Services Industry (FSI) of Bangladesh in comparison with some other neighboring countries. Though the study found that FSI were well ahead to publish ASR, but a detail guideline issued by local regulatory authority was marker as a current industry demand in the study. However the study had put importance on awareness development to publish ASR beside the guideline.

In second day of the conference, the second session was on “Looking into the Future: Next Frontiers of DFS in Bangladesh” was presided by Dr. Ananya Raihan, Executive Chairman, dnet. Mr. Matteo Chiampo, CGAP, UNCDF was presented a paper on the issue. The panelists of the session were - Mr. Arijit Chowdhury, Additional Secretary, Financial Institutions Division, Ministry of Finance, Government of the People’s Republic of Bangladesh; Mr. Feisal Hossain, Team Leader, Business Finance for the Poor in Bangladesh; Mr. Anirban Bhowmik, Country Director, Swiss Contact, Bangladesh; Mr. Arfe Elahi, IT Manager, Access to Information (A2i). The discussion of the session was on the Digital Financial Services (DFS) of Bangladesh. Moderator and the audience asked several questions to the panelists on the issue. The summary to the questions asked and the answers of those questions are furnished in below.

QUESTION & ANSWER SESSION

Q Would you highlight the major trends in technology front and also the expansion of DFS what you see in the next decade?

A Three trends, Interpretability, product portfolio expansion and women Credit scoring to technology, are very important. Financial institutions are interacting with customers. Telecom companies can play a vital role by providing real time data. Data is the new oil for taking real time decision. Telecom Company can help a lot.

Q How DFS is going to shape up the brand of the government in this regard?

A Present government has developed some visions among them vision 2021 reflects the digitalization of Bangladesh. In the vision 2041 Bangladesh will be a developed country and in 2071 the vision is “Bissoy a Bangladesh” and 2100 Bangladesh will be Delta Bangladesh. To achieve all these visions Bangladesh is going through full DFS. Without DFS it is not possible to go ahead.

Q How MSE can embrace DFS and what are the challenges for them and what is coming next for them and how it can be utilized?

A MSE is the engine of the growth of Bangladesh. Loan distribution cost and transaction costs are high in the MSE for all commercial banks. Agent banking and mobile banking make it easy to reach and also reduce distribution and transaction costs. There are many ways for banks to reach MSE. For a very long time MSE didn’t get access to the formal banking sector but with the advent of modern technologies it is now possible. DBBL and Bank Asia are the examples of participating MSE through technological enhancement.

QUESTION & ANSWER SESSION

Q Would you highlight the major trends in technology front and also the expansion of DFS what you see in the next decade?

A Yes, We have invested a lot for the development of banking for the poor. We are also in the process with Bangladesh Bank for developing Credit Information Bureau for MSE. We are also trying to connect MSI with Commercial Banks.

Q What are the BOP customers are looking for in DFS and what would make them to get into the service and what is the future?

A Agriculture in our country based on season. Farmers work in a seasonal basis. So they need financial support is also seasonal. So, Timely credit disbursement in agriculture is essential. Farmers are looking for more formal sectors for credit rather informal sectors. Small farmers, Medium farmers and Commercial Farmers need different types of credit facilities based on their demand. The growth of agro entrepreneurs are not evaluated properly. Banks should design special products for the agro entrepreneurs. DFS is an important platform to reach those people but understanding customers and need of the customers also be very important.

Q What is the current scenario to access in the existing services among the agro value chain representatives, farmers and others?

A It is not satisfactory, formal financial sectors are concern about collateral and they are not willing to accept inventory as collateral so access to formal sectors is difficult. KYC and other complex procedures restrict farmers to go to the formal sectors. Technology has the ability to do something new for those people but it needs to be ensured that where the technology is landing and where from taking off. Technology customization and developing technology for particular group of people is also important.

Q What is the View of A2i on DFS?

A A2i has two eyes one from government perspective and the other is from citizen perspective. Government has taken some initiatives to reach people through digital technology. Under the social safety net program all people get services through DFS. In the past people spent near about 20% of their allowances just for collection purpose. Government is trying to develop a Digital Financial service architecture with the help of National Identification Card so that it becomes easier to analyze the KYC. Real EKYS should be ensured so that banks can get real time information. Developing multiple cash out point for the people to collect money is highly required.

Q What is the perspective of private sector (merchants and companies who are selling products to the citizens)? What is their need in terms of DFS? How does the market look like in the future so that DFS market can address the need of private sector?

A Two issues need to be focused. One is both private and public sector should focus on the better use of DFS. Another one is the standard regulation for the innovation of more DFS. The future DFS market would be competitive, operational problems would have to remove, the overly transactional data from the web will create the opportunity for DFS. Therefore, private sector should reduce the anti-competitive practices.

Q How DFS will shape the future of financial services and financial inclusion in the National Financial Inclusion Strategy document in Bangladesh?

A We are trying to develop a project named business for the poor with the help of Bangladesh Bank. Under the project a National Financial Inclusion Strategy has been developed. DFS is essential to implement National Financial Inclusion Strategy. DFS will be a major pillar for the strategy paper. Digitalization of social safety net program is also under process.

Q How Block Chain Technology is going to influence the financial market?

A Block chain is coming as a key enabler of many financial services. Block chain is using to develop distributed ledger mechanism so that person to person transaction becomes easier and faster. There is a massive impact of block chain technology in near future.

Q What role development partners and development agencies should play in making DFS for the poor and inclusive?

A Development partners and development agencies can play a major role to bring innovation in the technology. New technology has some inherent risk. Top management feel hesitate to introduce new technology because of failure possibility so development partners and development agencies can share some risk with them. Developing intellectual capacity to find new ideas of how to solve complex issues is important.

Plenary Session-3

BIBM- UNCDF Session on “Digital Technologies for Driving Financial Inclusion for the Last Mile-Global Perspective and Best Practices”

The third plenary session titled “Digital Technologies for Driving Financial Inclusion for the Last Mile-Global Perspective and Best Practices” was presided by Mr. Rajeev Kumar Gupta, Program Manager, SHIFT SAARC and SHIFT ASEAN, UNCDF. The panelists of the session were - Mr. S.M. Mainuddin Chowdhury, Additional Managing Director, Southeast Bank Limited; Dr. Lila Rashid, General Manager, Payment Systems Department, Bangladesh Bank; Mr. Matteo Chiampo, CGAP, UNCDF; Mr. Syed Mohammad Kamal, Country Manager, Master Card; and Mr. Md. Mohiuddin Siddique, Professor, BIBM.

Four papers were presented in this session. The papers were (i) “Financial Inclusion in the Era of Digitalization in Developing Countries: A Dynamic Panel Analysis” by Mr. Madhabendra Sinha, Mr. Rishab Das and Prof. Dr. Partha Pratim Sengupta of National Institute of Technology, Durgapur, West Bengal, India; (ii) “Financial Inclusion in India – Achievements and Constraints” by T R Bishnoi, RBI Chair Professor, The Maharaja Sayajirao University of Baroda, Vadodara, India and Sofia Devi, Research Assistant, The Maharaja Sayajirao University of Baroda, Vadodara, India; (iii) “Financial Inclusion in Bangladesh through Mobile Banking: Special Reference to bKash Limited” by Afroza Parvin, Assistant Professor of Finance and M. M. Mofiz Uddin, Senior Lecturer in MIS, Northern University, Bangladesh; and (iv) “An Analysis of Banking Behavior of Women in Formal Institutional Environment in Bangladesh” by Dr. Pinki Shah, Associate Professor, University of Liberal Arts, Bangladesh and Ms. Sonia Mallick, Senior Lecturer, Eastern University, Bangladesh.

Plenary Session 3:

BIBM- UNCDF Session on “Digital Technologies for Driving Financial Inclusion for the Last Mile-Global Perspective and Best Practices”

Moderator: Mr. Rajeev Kumar Gupta

Program Manager, SHIFT SAARC and SHIFT ASEAN, UNCDF.

Discussants:

- Mr. S.M. Mainuddin Chowdhury, Additional Managing Director, Southeast Bank Ltd.
- Dr. Lila Rashid, General Manager, Bangladesh Bank
- Mr. Matteo Chiampo, CGAP, UNCDF
- Mr. Syed Mohammad Kamal, Country Manager, Master Card
- Mr. Md. Mohiuddin Siddique, Professor, BIBM

Title of the Papers:

Paper-1: Financial Inclusion in the Era of Digitalization in Developing Countries: A Dynamic Panel Analysis

Paper-2: Financial Inclusion in India – Achievements and Constraints

Paper-3: Financial Inclusion in Bangladesh through Mobile Banking: Special Reference to bKash Limited

Paper-4: An Analysis of Banking Behavior of Women in Formal Institutional Environment in Bangladesh

Paper-1: Financial Inclusion in the Era of Digitalization in Developing Countries: A Dynamic Panel Analysis- This paper tried to explore the dynamic relationship between financial inclusion and digitalization in developing countries across the world. During the current age of digitalized globalization, the inter-linkage between digitalization and financial inclusion is fundamental for planning and development strategies in many of the developing economies. Empirical findings include bidirectional causalities between the measures of financial inclusion and digitalization, and insignificant impact of public expenditure of digitalization in selected nations.

Paper-2: Financial Inclusion in India-Achievements and Constraints- During post economic reform period there has been a tendency of increased inequality which is gradually widening among regions/states. Government has taken several policy initiatives to address this problem of economic distress of exclusion and financial deprivation. This paper attempted to examine the policy gains on the issue of financial inclusion and constrains obstructing further progress. For this, there was a discussion with reference to three parameters - variation in and sources of indebtedness; credit-deposit ratio & credit density/penetration; and progress of PMJDY scheme.

Paper-3: Financial Inclusion in Bangladesh through Mobile Banking- Special Reference to bKash Limited: The purpose of this study is to show the picture of financial inclusion in Bangladesh through Mobile Banking activities of bKash limited and the overall mobile financial services in Bangladesh that are growing day by day. The analysis has revealed that the number and volume of transactions, number of agents, merchants, total and active customers in 2016 have increased multiple times compared to 2012. It has also been observed that average daily transactions have gained the highest growth whereas active customer ratio has obtained the lowest position. Finally, regression analysis has indicated there remains very positive and statistically significant contribution of average daily transactions to net income of bKash.

Paper-4: An Analysis of Banking Behavior of Women in Formal Institutional Environment in Bangladesh- The paper attempted to examine the banking behavior of Bangladeshi women in the formal institutional environment. Based on both primary and secondary information, it found that women are yet to receive due support and services from the formal sector banks. Right policy inputs, need based product design, and greater use of technology might bring expected change in the banking behavior of women in Bangladesh. In the country, women represent a huge, growing and substantially unaddressed market for financial products and services. The situation demands greater policy and market interventions, and for that matter the demand side analysis might pave the way for future course of action.

Q Although Bangladesh Bank has been the pioneer, how much Bangladesh's financial sector is prepared to embrace new technologies and disruptive digital innovations? What are the problems and opportunities in digital technologies?

A Bangladesh Bank is the pioneer in new technologies and disruptive digital innovations field. It has introduced the Guidelines on Mobile Financial Services for the Banks in 2011. In 2010, Bangladesh Automated Clearing House (BACH) started followed by the Electronic Fund Transfer Network (EFTN) came into the play in the immediate next year. In 2012, National Payment Switch Bangladesh (NPSB) and in 2015, Real Time Gross Settlement (RTGS) have been introduced. But public is not getting the benefit of digital financial services to its' full potentials. Particularly more than 50% of total capacity of three major platforms- RTGS, NPSB and BFTN are unutilized. Public banks are lagging behind in adapting new technologies and disruptive digital innovations compared to privately owned banks, mostly because of their dependency on their respective Board of Directors (BoD) and Government's decisions. Basically, preparedness for disruptive digital technologies depends on three factors – willingness of Shareholders and Directors to invest in technology, understanding of necessity of technology by top management in line with their banking vision/objective and finally the staff quality or readiness to adopt new technologies. Banks in Bangladesh are yet to be fully ready to embrace new technologies and disruptive digital innovations at this moment where top management can play a proactive role.

Q Around the world so much innovations and disruptions are going on. What is the position of Bangladesh in global happenings of Digital technology?

A Technology can ensure fantastic opportunity for lending marginally viable customers in Bangladesh. With the help of digital technology transfer payments and agreements among foreign buyers and local manufacturers, payment in letter of credit, remittance, put on block chain etc. are becoming more efficient and smooth than earlier. This digital technology can also be used to improve the credit scoring process.

Q What are views on digital technology adoption by banks? What do you think are the opportunities and bottlenecks in the process?

A A significant progress has been observed in Digital Financial Services (DFS) in Bangladesh. Already the volume of online transactions has surpassed physical transactions with the help of Debit card, Credit card, Agent banking, etc. But to ensure DFS in a large extent, the market should be there. As supply is expected to match the demand market and to create the demand of DFS by realizing the potentials, 'Financial Literacy' of the customers is must. On the other hand, Bangladesh has abundant population and huge market from demand side. So, banks also need to understand the needs of customers and the nature of the market to enjoy the full potentiality of financial inclusion.

Q Question for Mr. Syed Mohammad Kamal
Share the experience of Mastercard in Bangladesh. What is your plan of bring in future?

A In Bangladesh disruption has happened and will continue in Mobile Financial Services (MFS). Currently Bangladesh is enjoying a very good position in providing MFS. The main strength comes from the young population pool of the country whose adaptability is really encouraging. 41 banks are issuing cards in the market; 28 banks are given permission for MFS. E-commerce is growing at triple digit and it has 5 payment gateways. So, disruptions may come again. Central Bank and regulatory bodies should come forward with incentives in payment systems since it has been observed that whenever incentives are given, transactions go up significantly. In addition, under E-commerce, there are 5 payment gateways in Bangladesh doing their online transactions. Central bank can take a step to bring incentive capability into this entire payment system to encourage people more to shift it the next level.

Q How FINTECH will help reduce operating and investment cost of a bank for the financial inclusion in the rural area?

A Technology can't reduce cost directly rather it makes the system speedier as well as efficient. But of course through increasing efficiency it can reduce cost indirectly.

Q To what extent the low literacy of people influence financial inclusion?

A The rural people of Bangladesh may not have the concept of financial literacy, but they are very good at communicate through facebook, chatting, messaging, and alike. So, to make the customers informed and aware of the financial products and services the intervention of smart phone can be an effective option. A smart group of entrepreneurs can encash this behavior of the people through offering/push relevant financial information in the relevant space of facebook. This information may be on account opening, interest rate and related other financial services. Though enforcing a new technological behavior over existing behavior of the customer is very tough to catch up, but it will ultimately help to make the people financially literate and ultimately take benefit from financial services.

Q We hear a lot about the next Industrial Revolution. What are the few digital technologies that are going to accelerate the financial inclusion in the coming 5 years?

A Artificial Intelligence (AI) is very important to understand the clients' behavior. Already in Myanmar AI is widely using. E-wallet is going to be the next revolution in this area. Revolution in E-commerce industry is flourishing and taking a big leap. In Bangladesh, there is a huge market for E-commerce. So, if real technology comes into place, the adoptability in Bangladesh will be in a faster manner than any other country in the world.

Q What are the few disruptive of futuristic digital technologies that Bangladesh requires to accelerate financial inclusion and services?

A Main objective of financial inclusion is to ensure inclusive growth. Access of small and marginal entrepreneurs to financial services is the critical factor. 'Information asymmetry' is the big problem in SME which evident from the earlier records and research activities. So, a rich and updated database is required to solve this problem as well as to understand the SME borrowers' need and transaction behavior. As behavior analysis and big data analysis can be the major players in identifying the potential SME market in Bangladesh. Make the potential SME borrowers financially literate to avail all the financial facilities will be a big part to address this challenge.

Q You mentioned in your paper that digitalization does not promote financial inclusion and financial inclusion does not influence digitalization too much. What is your remark on the statement?

A Digitalization and financial inclusion are influencing each other. 'Digitalization does not promote financial inclusion and financial inclusion does not influence digitalization too much' has been considered as null hypothesis in this paper which was empirically tested using econometric methodology.

Q How can we reach the optimum level of financial inclusion from women participation?

A As half of the total population of Bangladesh is women, they need to be addressed with more attention by all parts of the society including banking sector. Strong regulatory directions from government end in this regard are highly expected. Banks can play an active role in this regard by addressing the demand of women and focus on designing the banking products and offering services in line with the unique needs of women.

From Mr. Matteo Chiampo:

Banks can disaggregate their services into smaller packages. By this, they can try to think ahead to perceive potential threats going to disrupt in banking sector with more competitive strength in the industry.

From Ms. Lila Rashid:

Only Mobile Financial Services (MFS) is working in ensuring financial inclusion under digitalization in Bangladesh as use of other delivery channel 'Card' is still observed mostly in the elite class of the society only and not working for financial inclusion. So, mobile financial services in future requires an extensive smart phone penetration in the market, available internet facility, use of more related applications instead of unstructured supplementary service data (USSD) code, etc. MFS need to be free from dependency on USSD code in future as this technology making difficulty to expand MFS. All these initiatives will reduce cost of MFS and benefit all in real sense.

From Mr. Syed Mohammad Kamal:

Ninety million national ID cards have been issued by Bangladesh Government. If we can convert these to 'payment cum ID card' then it is possible to reach all the adult population of the country. But for this, required initiatives from Bangladesh Bank and concern ministry are highly expected. Besides, offering incentives by the regulators in this regard can give a high jump to transaction.

From Mr. S. M. Mainuddin Chowdhury:

Bangladesh is developing in technological structure. But with technology we are open to associated risks also. So, preparedness in addressing the risk originated from technology need to be properly taken care for future sustainability.

From Mr. Md. Mohiuddin Siddique:

Many research works have been conducted on digital financial services. But we must know our own market from own context to understand the nature and demand of the local market which requires extensive research activities and gathered knowledge from those researches should also be applied. Besides academicians, bankers also are encouraged to do this sort of research. Banks' Research and Development (R&D) wing can play an important role in this regard and come up with more innovative and effective products that match the demand of mass level to promote financial inclusion in Bangladesh.

Plenary Session-4

BIBM- UNCDF Session on “Promoting Client Centric Approaches in DFS: Product Innovation for Low Income Groups and Small Businesses”

The fourth plenary session (BIBM-UNCDF) titled “Promoting Client Centric Approaches in DFS: Product Innovation for Low Income Groups and Small Businesses” was moderated by Mr. Md. Ashraful Alam, Country Project Coordinator, SHIFT in Bangladesh. The designated discussants were Mr. Muklesur Rahman, Managing Director & CEO, Shimanto Bank Limited; Dr. Shahadat Khan, Chief Executive Officer, SureCash; Mr. Khondoker Shakawat Ali, Sociologist and Researcher; Mr. Md. Nehal Ahmed, Professor, BIBM.

Four papers were presented in this session. The papers were (i) “Digital Financial Services (DFS) as a Tool of Financial Inclusion to build Consumer Demand” by Mohammed Sohail Mustafa, Associate Professor and Reefat Zaman Shourov, Lecturer of BIBM; (ii) “Interfacing Model for Superior Practices of Management Information Systems (MIS) in the Service Organization: Case Based Approach” by Dr. Mohammad Mizanur Rahman, Associate Professor, Shahjalal University of Science and Technology; (iii) “Role of IT in Promoting SME Banking: Indian Evidence” by Moinak Maiti, Research Scholar, Pondicherry University, Puducherry, India; (vi) “Potentials and Challenges of Agent Banking in Bangladesh” by Mahfuza Akhter, General Manager, Bangladesh Bank, Dr. M. Kamal Uddin Jasim, Senior Vice President, Islami Bank Bangladesh Limited and Sk. Mahfuzul Bashar, Senior Principal Officer, Islami Bank Bangladesh Limited.

Plenary Session 4:

BIBM- UNCDF Session on “Promoting Client Centric Approaches in DFS: Product Innovation for Low Income Groups and Small Businesses”

Moderator:	Mr. Md. Ashraful Alam Country Project Coordinator, SHIFT in Bangladesh
Discussants:	• Mr. Muklesur Rahman, Managing Director & CEO, Shimanto Bank Ltd., Dhaka • Dr. Shahadat Khan, Chief Executive Officer, SureCash • Mr. Khondoker Shakawat Ali, Sociologist and Researcher • Mr. Md. Nehal Ahmed, Professor, BIBM, Dhaka

Title of the Papers:

Paper-1:	Digital Financial Services (DFS) as a Tool of Financial Inclusion to build Consumer Demand
Paper-2:	Interfacing Model for Superior Practices of Management Information System (MIS) in the Service Organization: Case Based Approach
Paper-3:	Role of IT in Promoting SME Banking: Indian Evidence
Paper-4:	Potentials and Challenges of Agent Banking in Bangladesh

Paper-1: Digital Financial Services (DFS) as a Tool of Financial Inclusion to build Consumer Demand- Digital financial services (DFS) are held out as key financial solutions for improving financial inclusion. However, targeted end users often offer little in the way of obvious profitable opportunities and so market forces alone are not enough to ensure the supply of services and products that match end users' means, needs or wants. As a result, DFS in emerging markets may suffer from limited uptake and usage, with little effect on financial inclusion. In emerging markets, financial regulators have been focusing on supporting the success of DFS largely through institutional and regulatory framework efforts. This article argues that financial regulators must first work to understand and build consumer demand for DFS rather than purely focusing on developing enabling regulatory frameworks. This requires a change in mindset for financial regulators, who are more familiar with promoting financial stability, safety and efficiency. In this article, we explore this changing role for financial regulators. We recommend that regulators particularly focus on building consumer demand through promoting partnerships in DFS as a means of promoting financial inclusion. We highlight that partnerships introduce collaboration risks and heighten consumer risks; requiring regulators to adjust regulatory frameworks to ensure such risks are identified and mitigated.

Paper-2: Interfacing Model for Superior Practices of Management Information Systems (MIS) in the Service Organization- Case Based Approach: This research is an endeavor to understand and identify the existing practices of Management Information Systems (MIS) in the Banking sector of Bangladesh. This study argues that when there is an association among the commitment of corporate executives, status of IT infrastructure, and employees participation in IS, there is the likelihood that practices of MIS in the business organization will be improved. This interfacing theme is missing in previous research. A comparative case study provides empirical evidence to support this argument. Data were collected from two banks, one is Agrani Bank Ltd. (ABL) representative bank of nationalized commercial banks and another is Mercantile Bank Ltd. (MBL) representative bank of private commercial banks, in both cases same techniques were used. All the collected data were organized and analyzed systematically. All the relevant theories were applied to explain the findings. The main findings are: there are three MIS issues that are critical in improving practices of MIS and interactions of them; these issues were analyzed under different dimensions. There are four types of outcome are: Unsatisfactory, Natural or Usual, Reasonable, Satisfactory or up to the mark. On the basis of this analysis, an interfacing model of MIS practices was developed and two hypotheses are put forward.

Paper-3: Role of IT in Promoting SME Banking: Indian Evidence- Indian MSME sector is very attractive sector and limited access to the finance makes it growth retarded. Access to finance is the major obstacle to SME finance in emerging countries like India. There lies a huge gap between the demand & supply of SME credit to SME clients as a result there lies a huge scope for banks to get revenue from SME banking. But there lie several obstacles like information asymmetry, high operating cost, more number of sick SMEs and other obstacles make SME financing difficult for banks. The present study discusses how IT can play an important role to mitigate those obstacles and banks can extend their SME credits to the inaccessible SME clients. Study broadly discussed about how IT applications through crowd funding, Fintech companies, niche banks and PACS banks can extend their SME credits. Many real life case scenarios are quoted on how banks are using IT platforms effectively and efficiently to extend SME credits. Study finds application of IT in operations reduces operation cost highly, provides much transparency, information symmetry and overall efficiency for SME credit by the banks. The study findings are useful for policy makers, bankers and decision maker of other emerging nations.

Paper-4: Potentials and Challenges of Agent Banking in Bangladesh- The aim of this study is to identify the prospects of agent banking service in Bangladesh and to discover the challenges to operate agent banking activities in an efficient manner. As it is a newly emerged banking dimension, special emphasis has been given in the research to measure trust & confidence of general clients towards Agents. Moreover, specific ways have been identified to expand agent banking services in a faster, easier and wider manner throughout the country to ensure greater financial inclusion. Another important objective of the research is to guide the regulatory bodies and policy makers in identifying key challenges involved in agent banking operations and devising strategies to play appropriate role to flourish the service effectively & efficiently. It has also been shown that how the clients, agents, Banks, society and Governments are being benefited from the services. The key approach of this study is to unveil the prospects and challenges of agent banking activities in Bangladesh by collecting information from customers, agents and bank officials including supervisory authorities through purposive and random sampling. The findings of the study show that Agent Banking can change the overall socio-economic status of the society in general and financial attitude & life style of the underprivileged people of remote areas in particular.

Q What is customer centricity? How could we incorporate customer centricity in product designing and strategy formulation in the financial sector of Bangladesh?

A Customer centricity is a way of doing business to provide a positive customer experience. It is not just satisfying customers by offering good service. It is a combination of pre, during and post service experience to enhance customer loyalty. Hence if we want to incorporate customer centric approach in product designing and strategy formulation, we have to understand customers' needs. After that, products should be designed and delivered in such ways that meet customers demand. Even if to improve positive experience, banks should collect customers' feedback and incorporate in product designing and delivery channels. Nevertheless in Bangladesh, we are supply driven. Without knowing customers' needs we are offering different products. In fact, we are designing products to fill the gaps of our shelf. There are huge scopes to design products & services and deliver it according to consumers' tastes and preferences. Therefore, we should design products in a way to attract more underserved and unserved customers into the banking channel.

Q In the product development how do SureCash practice client centricity that other institutions can follow?

A SureCash is a payment platform that is being used by different financial institutions of Bangladesh. It is offering a complete set of mobile banking and payment products. For example, we have designed a payment product for government to facilitate primary education stipend program. The stipend goes to 10 million mothers in Bangladesh covering 60,000 schools. It is a push product where government is paying money as incentives. By the process mothers have opened account. In case of product designing, we do always listen to our customers to understand their needs. Design the intended products and customize the process to make it simplified.

Q How important is the client centricity in product development of Shimanto Bank Ltd. and how is it manifested in its product? How client centricity is practiced in general in the banking sector of Bangladesh? How would a bank rate product development in light with the client centricity of Bangladesh?

A Two things are important in financial market. One is the customer centric approach in designing financial products and another one is techno centricity while delivering those products and services. Therefore, we need to be customer centric in product designing. And once we want to deliver the products we need technology to assist us. However, in Shimanto Bank, the scenario is quite different where we need to provide products to BGB (Border Guard Bangladesh) employees and contribute to socio economic development like commercial banks as well. So, we have surveyed in a form of feedback session to BGB employees to identify a mix of product and service demand. After that we have tailored both the deposit and loan products for the soldiers. The success rate of our products is quite high during the one year period. Regarding the general customers, we know that all the banks are offering almost same products with little variation of features and interest rate. Consequently after visiting remote areas of Bangladesh, we understand that pricing and cost of fund are important. Therefore, we are planning to go for techno centric products. Beside, every bank should have R&D unit so that we can innovate products and customize according to customers' requirements.

Q How client centricity is practiced in Bangladesh for designing financial products for the women, low income people and micro & small businesses?

A In designing financial products, Bangladesh has developed Mobile Financial Services (MFS) for client centricity. In this case, advancement of technology and capacity to incorporate national interest are important. Over the world in MFS, we are excel in three key indicators i.e. client number, cost and compliance. We have introduced bank-led model that will be highly appreciable in world. It is a conservative approach and compliance oriented as well. If we can ensure the accessibility, user-friendliness, trustworthiness, low cost and feedback mechanism then customers will easily adopt it. Regulators should have to ensure a platform where bank can look after customers' interest and develop appropriate products and services to contribute inclusive growth.

Q How would you like to address the growth of agent banking and decline in daily transaction of MFS together as considering the prospective of DFS?

A When we start our business initially, the growth rate will be very high. In rural areas agent banking becomes very popular as the demand is there. Now, you are harnessing the demand. In some cases, the consumers are very happy. While in case of MFS, initially one/two of the products become very popular. At present, there is some slowdown of growth. But, there are lots of possibilities if we can innovate products.

(Added by Mr. Khondoker Shakawat Ali)

The demand of MFS is now becoming oval shape and is shifting. In a study of Boston Consultancy Group (BCG) focusing 2020, it is found that the demand will be high. At present in terms of amount, it may not be that much as the pie is becoming bigger. By 2020, the daily transaction will be Tk. 20 crore. A Trend is going to start. For example, women's are now using as a form of conditional cash transfer. In future, they will voluntarily use it. Beside, MFS is now getting different dimension i.e. basically it was designed for low income people but it is now being used by both the rich and poor people of the society. The usage will be high in near future. Therefore, the possibilities of MFS are very high. In addition to this, if we can link microfinance to MFS in terms of loan disbursement and collection the spread will be really appreciable. Payment cost will also be lower.

Q Would there be any kind of product like SureCash for the community banks?

A Sure Cash have very generalized products. As the technology used in these products is built in Bangladesh, we have very strong customization capability to address specific needs. At present, we are customizing for some of the micro finance organizations.

Q If all the financial institutions do not come forward to provide services through agent banking, how would we cover all the people of Bangladesh?

A The concept of agent banking is very good for rural areas. Without agent banking we cannot go to the rural unbanked people and the small businesses as well. As agent banking is new in our country, the financial institutions that got license were in confusion regarding their infrastructure. In fact, they were not ready in terms of infrastructure. We hope within five years it will grow more.

Part-III



**Paper Presented in
the Conference**

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Do Corporate Governance and Credit Risk Management have Implication on Bank Performance? An Empirical Study on the Private Commercial Banks of Bangladesh.

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1. Introduction

The recent financial scandals in the banking sector of Bangladesh have largely be blamed on the inefficient oversight from bank regulators, risk management failures and increasing non-performing loan size. Although being one of the most profitable sectors till 2009, this industry is now facing severe difficulties and becoming a threat to the country's economic growth. Thereby, good governance practice should lead to mindful lending behavior, which in turn should boost bank profitability and drive economic growth (Faleye and Krishnan 2014; Krishnan 2014; Ahmed *et al.*, 2016). More significantly, economic development of a developing country such as Bangladesh has a lot to do with a soundly managed banking system. With their proper lending, economy can grow as businesses require the initial loans to start and expand and over time become self-sustainable. In order to improve the general quality of corporate governance practices in Bangladesh. The Bangladesh Securities and Exchange Commission (BSEC) has initiated 'Corporate Governance' guidelines for the listed companies on February 2006. These actions indicate that Central Bank is concerned about the importance of relationship between corporate governance, risk management, and bank performance.

While in recent times, the economy started recovering some of the competitiveness it lost over the years, the persistent increase in bad loans has crippled Bangladesh's banking sector. As of June 2017, the amount of accumulated default loans stood at around BDT 1,19,000 crore, which is almost equivalent to 12 percent of Bangladesh's GDP. To put this figure in perspective, this sum is enough to construct four Padma bridges. Also in comparison, neighboring country India's default loans accumulate to around 7.5 percent of its GDP. This size of defaulted loans could also rise over the course of the year, especially in the SME sector as floods have affected the low-lying regions of the country. A lot of this alarming situation has been credited to a lack of good governance practices, with political affiliation, culture of immunity, abuse of power in loan disbursement, weakness of existing laws and lack of technical expertise (Hashim 2017; Islam 2017). One another alarming fact among all this is, traditionally it was the state-owned banks that always had the largest amount of defaulted loans. But in recent times, bad debts of private banks are rising alarmingly. In the first six months of 2017, the defaulted loans of 40 private banks had a shocking rise of almost Tk 2,002 crore (Islam 2017). It is of precarious importance that the private commercial banks restore their efficiency before this situation goes beyond control. The present research study pooled 20 listed commercial banks operating in Bangladesh. Panel data methodology is employed to evaluate whether private commercial banks are practicing good governance and managing credit risks properly. After applying model specific tests, random-effect model is preferred. Both the Non-Performing Loan (NPL) and Loan Loss Provision (LLP) exhibit the expected significant negative relation with board size. Moreover, Return on Asset (ROA) and Return on Equity (ROE) have significant negative relation with NPL when we crossed regressed. These selected measures of credit risk, bank performance and corporate governance mechanisms can be useful in the investigation and supervision of different banks in Bangladesh.

2. Literature Review

Economic development of a developing country such as Bangladesh has a lot to depend on the rigorous enforcement of corporate governance practices among financial institutions; as that would ensure the banking system is soundly managed. It is primarily due to the fact that banks deal with the money and savings of general public money. With the recent news and incidents of loan defaults of huge amount against so many state-owned and private banks, it is imperative that proper governance mechanisms are installed to restore public confidence. It has been long argued that the success of the financial development of a country has a lot to deal with the quality of corporate governance of banking institutions. In the absence of a proper monitoring and control mechanism, possibility of financial development that leads to eventual economic growth gets significantly reduced (Winkler 1998). Different cross-country studies support the idea that countries with efficient and strong financial markets along with the size and operation of its financial systems have a strong relation with higher rates of economic growth (King and Levine 1993; Levine and Zervos 1998; Cetorelli and Gambera 2001).

Banks work in a system dominated by problems arising from asymmetric information. With such differences in information available between counterparties of the financial transactions, there will always be a higher likelihood of one of the parties damaging the other party. Therein lies the opportunity for moral hazards, as the financial institutions can collect deposits and utilize them for profit-making activities. Depositors work as the principals in the depository process, whereas the banking institutions work as the agents. In this case, the possibility of plundering depositor's money by the agents is much higher; as those who founded the bank had to contribute very little through equity in accumulating the assets (Reaz and Arun 2006; Mishkin 2007). In the case of losses or failures it will be depositors' savings that the banks would lose. Such risks require precedence in safeguarding the depositors, which resulted in the culmination of a broader view of corporate governance that suggests the interest and benefits of the suppliers of funds for a firm should be upheld (Shleifer and Vishny 1997; Vives 2000; Oman 2001). It has since been also argued that this broader view of corporate governance should be adopted in the case of banking institutions, particularly for this peculiar contractual form of banking. Banks should adopt such governance mechanisms that capture not only the depositors but also the shareholders as well (Macey and O'Hara 2003). Government intervention to restrain the behavior of bank management is also another factor that has been long argued to be included in this broader concept of corporate governance mechanism (Arun and Turner 2004).

Over the last two decades, there have been a number of global bank failures and financial crises. All of these raised fundamental questions on the competency of the governance practices of the banking system. Many cited weak governance as one of the prime reasons of the 2008 global financial crisis (Kirkpatrick 2014; Berger 2016; Imbierowicz *et al.*, 2016). Financial sector worldwide is always more heavily regulated compared to the nonfinancial sectors. One of the primary reasons for such high regulation is that there is a high likelihood of significantly negative externalities and systematic risk arising from excessive risk-taking by banks going wrong. In some cases, the shareholders of banks do not internalize the risks and the possibility that the failure of their bank will pose on the rest of the financial system, even though such systemic risk can pose significant threats to the broader economy (Flannery 1998; Laeven and Levine 2006). Distress financial sector is not at all beneficial for the country's economy, as it induces government bailouts, the cost of which significantly increases sovereign credit risk. This higher sovereign credit risk in turn deteriorates the financial sector of the country by diminishing the value of its government securities (Acharya *et al.*, 2014; Drechsler *et al.*, 2014).

While it can be a generalized idea that banks with healthier governance (in terms of board structures that are friendly to the shareholders) should be safer against financial crisis and risks; that is not always the case. Study showed that banks with sound governance systems in place actually performed considerably poorer during the crisis than other banks and had greater stability risk than before the escalation of the crisis (Beltratti and Stulz 2012). Some studies demonstrated that banks'

credit risk is mainly driven by low capitalization, low earnings, over-exposure to certain categories of loans, and excessive loan defaults (Cole and Gunther 1995; Kolari *et al.*, 2002; Glennon *et al.*, 2002). Another study conducted on a sample of US commercial and savings bank demonstrated that, after controlling for firm specific characteristics, commercial banks that has considerably larger boards and older CFOs are usually related with significantly lesser credit risk. Lower ownership by institutional investors and more independent boards also have lower credit risk levels, although these effects are somewhat less significant (Switzer and Wang 2013). Bank failures were also found to be strongly influenced by ownership structure: as high shareholdings of lower-level management and non-Chief Executive Officer (non-CEO) was found to significantly escalate the risk of failing. In contrast, shareholdings of banks' CEOs directly did not impact on bank failure. These findings suggest that high stakes in the bank induce non-CEO managers to take high risks due to moral hazard incentives, which may result in bank failure (Berger *et al.*, 2016).

After the independence in 1971, the government by themselves carried out the management, ownership and regulation of all the financial institutions until 1982. That is when the 'ownership reform' measures started in the financial sector. During this period of reforming, two out of the six National Commercial Banks (NCBs) were denationalized. In their place, private commercial banks were allowed to operate in the country. Despite the expansion in present, these banking institutions were continuing with dismal operational efficiency (Raquib 1999; Sayeed 2002). Studies on the corporate governance practices in Bangladesh has typically characterized the existing system as having weak legal and regulatory frame work, domination of individual investors, limited transparency & weak disclosure and institutional control (Chowdhury 2010).

In Bangladesh, corporations are mostly made up of family members, hindering the level of fairness, accountability and transparency. Board of Directors are also actively involved in management (Haque *et al.*, 2007). Moreover, there is no market for corporate control, thereby poorly managed firms do not face the risk of becoming takeover targets. This leads to sluggish managerial reactions to changing market conditions. Auditors fail to act independently, resulting in poorly audited financial statements and lack of influence from pressure groups i.e., shareholders, institutional investors and the financial press (Huq and Bhuiyan 2012).

In the framework of Bangladesh, research failed to find any significance of independent directors working to support the majority shareholders or coming up with innovative ideas (Sobhan and Werner 2003). However, one particular study did find the size of the board and the independent directors having significantly positive impact on the performance of the local private commercial banks in Bangladesh (Kutubi 2011).

In the traditional corporate governance mechanism, boards are entrusted with the responsibility of strategically leading the business with effective decision making and suitably nursing on the management with the principals of the firm. In Bangladesh, bank board's usually have on average ten directors, and they are tremendously subjugated by the non-executive members (Reaz and Arun 2006). Because of factors i.e., poor bankruptcy laws, lack of push from the international investor community, limited or no disclosure regarding related party transactions, lack of shareholder active participations; good corporate governance practice is hard to find among companies of Bangladesh (Ahmed *et al.*, 2017; Jannat *et al.*, 2017). Large majority of the shares are owned by a small number of 'sponsor' shareholders leaving a small portion of the shareholding to the 'general' shareholders. The number of executive shareholdings is very small among the banks in Bangladesh. There are legal restrictions on bank executives becoming sponsor shareholders of the banks. Instead, family and institutions dominate the private bank's ownerships, even though local banking law prohibiting shareholding of more than 10 percent by members of a single family (Reaz and Arun 2006).

While the six State-Owned Commercial Banks (SOCB) of Bangladesh controls only around 25 percent of all bank assets of the country, they have a sizable influence on the economy due to their connections with the government. Due to their inefficient management and huge loan-losses, they

pulled the average non-performing loans to around 11 percent, considerable high when compared against the 4 percent found in advanced economies. In recent times, there have been intense outcry against the banking scams that resulted in the defaulting of huge amount of loans from state-owned banks of Bangladesh. One of the most infamous scandals of Bangladesh's banking industry involved the country's largest SOCB, Sonali Bank. One branch of the bank alone, between 2010 and 2012, illegally gave out \$454 million in loans. Among these illegally disbursed loans, nearly \$344 million was given to Hallmark Group, a textile business which was not returned properly. The managing director of the business connived with a branch manager to conduct such transaction (Economist 2014). Even after such scam was uncovered, Sonali Bank continued to operate with abnormally high nonperforming loans: reportedly more than 37 percent in the fall of 2014. Similarly, between 2009 and 2012 around \$565 million in assets were said to be looted from the state-owned BASIC Bank, without any justice to the perpetrators. Despite with this level of inefficiency, all the Bangladesh's SOCBs are regularly recapitalized by the government-to the tune of about \$640 million for fiscal year 2014 and, more than \$700 million for fiscal year 2015 (Allchin 2016).

Many empirical research focused on relating and finding the relationship of bank failures with accounting variables i.e., Non-Performing Loan (NPL) ratios, earnings and capital ratios (Schaeck 2008; Cole and White 2012). Although there are studies showing that governance structures in banks in the time leading up to the crisis were not necessarily worse than in nonfinancial companies, all related research does indicate that corporate governance have a significant influence on bank risk (Adams 2012). Nevertheless, there have not been many studies establishing relationships between accounting variables of bank credit risk (i.e., loan loss provision and non-performing loans) with corporate governance factors. While empirical work on corporate governance is prevalent, they are mostly focused on the different aspects of firm performance. This research looks to add a new dimension on this area, establishing whether the commercial banks of Bangladesh actually has an effective governance structure in place that looks to minimize credit risk and the loan defaults.

3. Research Design

3.1 Data and methodology

This study has employed secondary data of 20 private commercial banks that are listed in Dhaka Stock Exchange (DSE). The data are obtained through the audited reports of the listed banks for the year 2008 to 2015. In order to examine the linkage between the banks' credit risk, performance and governance variables, this study uses two credit risk measures, two performance measures, four core governance measures and four control variables. Moreover, each bank is required to have a minimum market capitalization and should be listed under 'A' Category for last ten years to assess the impact of the corporate governance on banks' performance and creditworthiness (see Table-1). Following the procedure of these sample selection criteria, the resulting sample comprises 159 bank-year observations.

Consistent with previous studies of corporate governance, panel data regression analysis was used in this study. Due to the existence of the unobserved heterogeneity in a cross-sectional regression of accounting measures and governance variables, it is likely to generate a degree of correlation among the variables and the error term, thus leading to biased estimates (Hu and Izumida, 2008). A solution to this problem is the use of panel data methodology as it controls for individual heterogeneity, reduces problems associated with multicollinearity and estimation bias, and specifies the time-varying relation between dependent and independent variables (Baltagi 2008; Agusman *et al.*, 2008). To identify the suitable model for the panel data methodology, Hausman's test was conducted to compare the fixed-effect model with the random-effect model. Following the similar procedure applied by Agusman *et al.*, (2008), Breusche and Pagan Lagrange Multiplier (LM) test was employed to examine whether the random-effects model outperform the pooled OLS model respectively.

Table 1. Sample of the Study (2008-2015)

Name	Market Capitalization (million)	Market Category	Name	Market Capitalization (million)	Market Category
Bank Asia Ltd.	21,319.44	A	AB Bank Ltd.	15,566.94	A
National Bank Ltd.	36,267.94	A	Brac Bank Ltd.	71,666.57	A
NCC Bank Ltd.	15,632.96	A	The City Bank Ltd.	40,199.13	A
One Bank Ltd.	18,980.83	A	Dhaka Bank Ltd.	15,095.98	A
The Premier Bank Ltd.	11,827.29	A	Dutch-Bangla Bank Ltd.	26,700.00	A
Prime Bank Ltd.	29,851.11	A	Eastern Bank Ltd.	32,988.58	A
Southeast Bank Ltd.	19,806.12	A	IFIC Bank Ltd.	25,220.88	A
Standard Bank Ltd.	12,589.73	A	Jamuna Bank Ltd.	14,001.92	A
Trust Bank Ltd.	21,220.41	A	Mercantile Bank Ltd.	21,731.21	A
United Commercial Bank Ltd.	25,299.14	A	Mutual Trust Bank Ltd.	15,340.65	A

Source: www.dsebd.org

3.2 Key measurement variables of the study

3.2.1 Measure of Firm Credit Risk

According to the Basel Committee on Banking Supervision (2000), credit risk is identified as the possibility that a bank borrower of counterparty may fail to meet its obligations in accordance with the agreed terms. In general, credit risk is associated with the traditional lending activity of banks and simply described as the risk of a loan not being repaid in part or in full. In this study, Non-Performing Loans (NPL) and Loan Loss Provision (LLP) was used as proxies for credit risk. Agusman *et al.*, (2008) use accounting risks measures to examine the linkage between accounting information and market risk measures and suggest that both NPL and LLP is a good accounting measure of credit risk. Based on the previous studies, increase in banks' provision for loan against the amount of banks' loan disbursement indicates poor credit risk management and higher credit risk (Amos Layola *et al.*, 2016).

3.2.2 Measure of Firm Performance

Although various accounting measures have widely used to quantify banks' performance in the existing literature, two accounting measures - Return On Assets (ROA) and Return On Equity (ROE) were employed to proxy for profitability, as were the case in previous similar works studying the impact of corporate governance variables on banks' performance (Al-Sahafi *et al.*, 2015; Tandelilin, *et al.*, 2007; Peni and Vähämaa 2012). ROA is used to analyze the banks' ability to generate return on the total asset available for operation. On the other hand, ROE is used to assess the banks' ability to generate return on the money that shareholders have invested.

3.2.3 Corporate Governance Variables

Theoretically, both risk management and bank performance are dependent on the execution of good governance and has been dominated by agency theory. Based on the risk return trade-off, better risk management indicates lower exposure of risk and lower agency conflict, hence greater advantages to increase their performance. Banks' governance is characterized by both external and internal corporate governance that aim to influence and monitor the behavior the management (Hajer and Anis 2016). In this study, focus is on four broad governance structures, namely board size, board diligence, board independence and dual role of CEO.

Based on the most prominent economic theories of Fama and Jensen (1983), Williamson (1983) and Jensen (1993), the board of directors are the most important governance mechanism in any firm as they are responsible for monitoring management's action and protecting shareholder's interest. However, the composition of the board and related factors were the subject of various research studies and debates. Adams and Mahran (2003) argued that bigger board size has a significant impact on firm's performance with a higher level of risk as the directors' have greater ability to monitor and control managers. They also suggest that when the board size is reduced, the members can be easily influenced and maneuvered by the leader, while Jensen (1993) and Lipton and Lorsch (1992) suggest a relatively small board (comprising seven to eight members) to be more effective since effectiveness of large boards are outweighed by the poorer communication and decision making. Nonetheless, some authors (such as Surifath 2013 and Wang *et al.*, 2015) conclude that board size is negatively and significantly associated with risk management, which means the larger the board size lowers the NPL and LLP, thus better risk management. It is therefore imperative that banks improve its board independence, transparency, accountability to shareholders and other stakeholders and frequent arrangement of board meeting for implementation of effective corporate governance practice. Consistent with the agency theory, Fama and Jensen (1983) argued that existence of independent directors on the boards tend to reduce the likelihood of financial fraud as their incentives are highly tied up with the maintenance of the firms' reputational capital. On the contrary, stewardship theory suggests that inside directors are more reliable caretakers of firms' resources and their in-depth knowledge related to business magnifies the company performance (Nicholson and Kiel 2007). Likewise, Adams (2012) finds that board members with greater independence had performed poorly during the global financial crisis. Though, previous empirical investigations are not leading to conclusive outcomes: some specific studies find that existence of independent directors have negative impact on credit risk and positive impact on performance. Effective corporate governance requires the commitments of boards of directors to meet frequently for executing their duties diligently and effectively (Christensen *et al.*, 2010; Kent and Stewart 2008). Recent research studies on mandated disclosure indicates that more high-quality, transparent reporting and disclosure are positively related to the frequency of board meetings. These arguments lead to the supposition of the negative association between credit risk and board meeting, where a positive association is expected between board meetings and banks' performance. Thus, it can be hypothesized that frequent board meeting enhances the level of oversight, and better credit risk management, thus better bank performance.

Another important characteristic of board composition is the separation of the roles between board of chairperson and CEO. Role duality is a dummy variable where we assign one if there is duality between two roles, otherwise zero. Previous studies have found that duality hindered board independence and thereby diminishing the effectiveness of the oversight and governance mechanism. Consistent with this view, Christensen *et al.*, (2010) suggest that dual structure could generate potential managerial domination of the board of directors, hence separation of CEO roles would be more crucial in high intricate institutions like banks. In contradiction with the above studies, several studies assume that CEO with dual role has better idea about the bank, thus occupy a better position to make effective decision regarding the performance and risk. In response to the above investigation, we hypothesized a negative association between CEO duality and credit risk where a positive association between CEO duality and bank performance.

As per the review of literature and the determination of corporate governance variables, it is identified that there are few number of studies attempted to examine the association between both corporate governance and risk management, and their implication on bank performance.

3.2.4 Control Variable

Similar to the previous studies (Christensen *et al.*, 2010; Al-Sahafi *et al.*, 2015; Fallatah and Dickins 2012), some control variables were incorporated in this research model to separate the potential effect of corporate governance variables on the company performance or risk management for alternative interpretation. First control variable of the study is audit committees,

primarily because they can play a key monitoring role to oversight the company's financial statement and ensure the adherence to mandatory disclosure for the reliability of the financial reporting mechanism (Leauby and Brazina 1999; Cotter and Silvester 2003). Likewise, both the bank size and the leverage ratio also have the theoretical and empirical support to include as control variables to examine banks' performance and risk management (Fallatah and Dickins 2012; Bruno and Claessens 2010; and Pervan and Višić 2012). Intuitively, larger banks tend to have greater agency problems due to the requirements of additional overseeing and monitoring. However, majority of the empirical studies indicate that bank size has a significant positive influence on bank performance, since large banks enjoy superior profits than smaller banks due to economic of scale (Fanta *et al.*, 2013; Bertay *et al.*, 2013). Agency theory indicates that high level of debt could lead to an increased cost of capital and bankruptcy cost, consequently a decline in bank's performance. Thereby, leverage ratio was employed as it is a good indicator for corporate bankruptcy (Pervan and Višić 2012). The existing finance literature has also included firm age as control variable and suggest that firms' performance may be influenced by the length of these legal entities (Coad *et al.*, 2016). Consistent with this view, Hopenhayn (1992) suggests that older firms are likely to be more efficient and enjoy higher profit under plausible assumptions. This is because large firms can learn by investing in R & D and they have greater possibility to discover what they are good at. In contrast, other stream of studies based on organizational rigidities hypothesis suggest that older firms are less profitable as they severely affected by higher cost, slower growth, existing older assets and declined investment on R & D activities (Majumdar 1997; Coad *et al.*, 2016). As a consequence, older firms progressively face deterioration of corporate governance quality, hence performance could appear to decline with age. This study hypothesises a positive association between banks' performance and firm's age.

3.3 Empirical Model

This study adopts econometric model of Amos Layola *et al.*, (2016) and Bourakba and Zerargui (2015) to test empirically the impact of corporate governance variables on banks' credit risk. It encompasses the following general form:

$$CRRISK_{it} = \beta_0 + \beta_1 BSIZE_{it} + \beta_2 BMEETING_{it} + \beta_3 DCHAIR_{it} + \beta_4 BINDEPDENCE_{it} + \beta_5 AUDIT_{it} + \beta_6 SIZE_{it} + \beta_7 AGE_{it} + \beta_8 LEVERAGE_{it} + \epsilon_{it} \dots\dots\dots (i)$$

Following Christensen *et al.*, (2010) and Al-Sahafi *et al.*, (2015), we use two different alternative measures of bank performance and develop following regression model

$$PERF_{it} = \beta_0 + \beta_1 BSIZE_{it} + \beta_2 BMEETING_{it} + \beta_3 DCHAIR_{it} + \beta_4 BINDEPDENCE_{it} + \beta_5 AUDIT_{it} + \beta_6 SIZE_{it} + \beta_7 AGE_{it} + \beta_8 LEVERAGE_{it} + \beta_8 CRRISK_{it}^{1**} + \epsilon_{it} \dots\dots\dots (ii)$$

¹The rationality behind the cross regression of credit risk variable with performance variables is to examine whether banks that implement good governance and manage their risk effectively will have the advantage of enhancing their performance or not?

Table 2: Description of selected variables

Variable	Measurement
<u>Dependent variables</u>	
CRRISK	Loan Loss Provision (LLP) and Non-performing Loans (NPL) are used as the proxy for credit risk. LLP is the ratio of loan loss provisions to total loans and NPL as ratio of non-performing loans to total loans.
PERF	Return on Asset (ROA) and Return on Equity (ROE) are employed to examine the impact of corporate governance on bank's performance. ROA is the ratio of net income to total assets and ROE as ratio of net income to total equity.
<u>Dependent Variables</u>	
BSIZE	Variable for total number of directors on the board, measured as the natural logarithm of BSIZE.
BMEETING	Variable for total number of board meetings each year
DCHAIR	A dummy variable for dual role of CEO/ chair, assigned 1 if the CEO is also the chairperson, and 0 otherwise.
BINDEPENDENCE	Proportion of independent directors on the board
AUDIT	Dummy variable for the existence of audit committee, 1 if there is an audit committee and 0 otherwise.
SIZE	Natural logarithm of total book value of assets at balance date
Age	The number of years a given bank's stock has been traded on DSE
LEVERAGE	Ratio of total liabilities to total assets.

4. Empirical Analysis

4.1 Descriptive Statistics

Table-3 presents the descriptive statistics for our measures of, credit risk variables, bank performance variables, corporate governance variables and control variables. In general, the data are highly skewed and includes outliers and negative values. The negative values prevent the use of a logarithmic or square root transformation to achieve normality (Agusman *et al.*, 2008). Summary descriptive statistics of twelve variables are presented in table 3 and it can be observed that NPL and LLP for 20 commercial banks have mean value of 0.041193 and 0.014600 respectively. The ROA and ROE are observed to have mean value of 0.015733 and 0.175179 respectively. The mean value of board size is 1.119578 while, board meeting, dual CEO and board independence have stood at 18.32182, 0.012579 and 0.139358 respectively. For control variables, size and age have the highest mean value of 10.98483 and 14.46541. The standard deviation figures from Table-3 exhibits that the most volatile date is board meetings and firm's age with a standard deviation of 6.5826 and 8.6047 where the least fluctuating variable is ROA with standard deviation of 0.0094.

Table 3: Descriptive Statistics

Variables	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis
<u>Creditworthiness Measures</u>							
Non-Performing Loan	0.041193	0.0394	0.0973	0.0118	0.0171	0.6415	3.103353
Loan Loss Provision	0.014600	0.0114	0.059200	0.000170	0.0120	1.6192	5.854721
<u>Performance Measurements</u>							
Return on Asset	0.015733	0.0138	0.0685	0.0021	0.0094	2.5897	12.98905
Return on Equity	0.175179	0.1652	0.4896	0.0272	0.0801	0.8711	4.090429

Variables	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis
Core Governance Measures							
Board Size	1.119578	1.1461	1.431364	0.69897	0.1457	-0.465	3.291064
Board Meeting	18.32182	17	40	0.17	6.5826	0.2655	2.998059
Dual CEO/ Chair	0.012579	0	1	0	0.1118	8.7471	77.51274
Board Independence	0.139358	0.0833	2	0	0.2463	5.8192	42.64825
Control Variables							
Audit Committee	0.396226	0	1	0	0.4906	0.4243	1.18006
Size	10.98483	11.059	12.30691	8.719267	0.4239	-2.169	12.48805
Age	14.46541	12	33	2	8.6047	0.6694	2.142457
Leverage	0.901826	0.917	1.107	0.089	0.0871	-5.882	51.46597

4.2 Regression Analysis

This study runs regression for both fixed-effect and random-effect specifications² on two models of bank's credit risk and performance. For both regression models, Lagrange Multiplier (LM)³ test shows that random effect model outperforms the pooled OLS. Additionally, Hausman test⁴ also confirms that random-effect model is more fitted estimate than fixed-effect model. Wherefore, the results of random-effect are exhibited in Table-4, and for comparison purpose, both the fixed-effect and OLS results are also presented. Even though the data are pooled, we ignore the effect of heteroskedasticity and autocorrelation on OLS results.

When NPL and LLP is assigned as dependent variable, the random-effect specification shows that board size has a significant negative association. These finding suggest that larger board size has greater impact on reducing credit risk and is consistent with the findings of Surifah (2013) and Poudel and Hovey (2013). This would suggest that banks with bigger board has better monitoring and overseeing capacity which might constraint excessive risk-taking in the banking industry of Bangladesh. Surprisingly, pooled OLS result also indicates that credit risk and board size have a significant negative relationship. Further, this study also finds significant positive association between NPL, audit committee and firm age where LLP does not have any significant associations with any other variables, except board size. Ismail (2012) finds a strong association between risk management and audit committee for Egyptian banks which is similar to our findings. He also suggests that employment of audit committee can play a key monitoring role in the area of risk management and could act as a driving forces for less risk-taking behavior for banks. Consistent with the previous studies in the industrial organization literature, this study conclude that older banks are more efficient in risk management as they have more specialized knowledge. This argument is backed by the study of Pástor and Pietro (2003) where they suggest that investor's uncertainty minimized as the firm becomes older. Moreover, it is noted that the adjusted R-squared explained 39.10 percent of the variation of credit risk when NPL is used as dependent variable where adjusted R-squared explained 46.68 percent of the variation of the credit risk when LLP is assigned as dependent variable. On the both model F-statistics suggest that all the independent variable have combined significant impact on credit risk.

² The major problem with pooled OLS is the it unable to differentiate between the selected banks since it ignores the heterogeneity or individuality that might exist among the twenty banks. In response to that fixed-effect model is employed to test the heterogeneity or individuality among the banks by letting this model to have its own intercept value. The Nationality behind using the term 'fixed-effect' is due to the fact that even though the estimated intercept may vary across the different banks, but it will not vary over time, which implies that it is time invariant. On the other hand, Random-effect model is employed to estimate a common mean value for the intercept.

³ Under Breusch and Pagan LM test, we set null hypothesis as pooled OLS is appropriate model and alternative hypothesis as random-effect model is appropriate.

⁴ Under Hausman test, we set null hypothesis as random-effect model is appropriate and alternative hypothesis as fixed-effect model is appropriate.

Table 4: Estimated Coefficients from Regressing Credit Risk on Corporate Governance Measures for the Years 2008-2015.

Dependent Variables	Non-performing Loans			Loan Loss Provision		
Independent Variables	Pooled OLS	Fixed Effect Model	Random Effect Model	Pooled OLS	Fixed Effect Model	Random Effect Model
Constant	-0.0017055 (0.969)	-0.0036932 (0.928)	-0.0108551 (0.790)	0.0100915 (0.771)	0.0397684 (0.233)	0.0333716 (0.282)
Board Size	-0.0200909 (0.001) **	-0.0043678 (0.625)	-0.0149534 (0.0447) **	0.0046439 (0.496)	0.0011555 (0.929)	-0.0020361 (0.004) **
Board Meeting	0.0001014 (0.647)	0.0001464 (0.596)	0.0002606 (0.295)	-0.0000693 (0.657)	-0.000176 (0.394)	-0.0001352 (0.447)
Dual CEO/Chair	0.0040112 (0.779)	-0.046042 (0.708)	0.0067458 (0.590)	-0.0104462 (0.319)	-0.0022577 (0.808)	-0.0046013 (0.600)
Board Independence	0.0028285 (0.561)	-0.0035362 (0.517)	0.0051842 (0.284)	-0.0023151 (0.512)	-0.0023338 (0.592)	-0.002728 (0.447)
Audit Committee	0.0038673 (0.171)	0.0063294 (0.022) **	0.0077676 (0.004) **	-0.0002248 (0.913)	-0.0003357 (0.871)	-0.0005619 (0.769)
Size	0.0057071 (0.149)	-0.0023074 (0.542)	0.003461 (0.340)	-0.0013505 (0.643)	-0.0041839 (0.144)	-0.0038557 (0.134)
Age	0.0001636 (0.334)	0.0028781 (0.000) **	0.0005626 (0.046) **	0.0000231 (0.853)	-0.0001614 (0.727)	-0.00000217 (0.992)
Leverage	-0.0027112 (0.860)	0.0322954 (0.015) **	0.0163292 (0.225)	0.0173625 (0.127)	0.028379 (0.005) **	0.027192 (0.838)
<i>R</i>	0.1214	0.2910	0.3910	0.1030	0.1011	0.468554
<i>F</i> Statistics (Prob)	(0.0106) **	(0.0000) **	(0.0002) **	(0.711816)	(0.0000) **	(0.00187) **
<i>N</i>	160	160	160	160	160	160
Specification tests:						
LM test (pooled OLS vs. REM)		43.18 (0.0000) **			65.44 (0.0000) **	
Hausman test (FEM vs. REM)		12.88 (0.1160)			2.87 (0.9422)	

For banks performance, the estimated results of random effect model are presented in Table-5 and we also include the results of fixed-effect model and pooled OLS for comparison purpose. For both ROA and ROE, the random-effects specification indicates that Non-performing loans show significant negative associations.

Table 5: Estimated Coefficients from Regressing Bank Performance on Corporate Governance Measures for the Years 2008-2015.

Dependent Variables	Return on Asset			Return on Equity		
Independent Variables	Pooled OLS	Fixed Effect Model	Random Effect Model	Pooled OLS	Fixed Effect Model	Random Effect Model
Constant	0.0598735 (0.020) **	0.058884 (0.029) **	0.0642601 (0.010) **	0.6436317 (0.002) **	0.4699798 (0.029) **	0.6412063 (0.001) **
Board Size	-0.0034107 (0.507)	-0.0065506 (0.536)	-0.0061373 (0.399)	-0.0094626 (0.815)	0.025834 (0.759)	-0.0116956 (0.789)
Board Meeting	-0.0002024 (0.080)	-0.0001967 (0.238)	-0.0002378 (0.083)	-0.0014856 (0.103)	-0.000913 (0.490)	-0.0015443 (0.103)
Dual CEO/Chair	-0.0069656 (0.369)	0.0034454 (0.643)	-0.0036985 (0.608)	-0.0319012 (0.601)	0.0091595 (0.877)	-0.0379293 (0.530)
Board Independence	-0.0024091 (0.357)	0.0001526 (0.965)	-0.0036877 (0.192)	-0.0214864 (0.298)	0.0312635 (0.264)	-0.0223569 (0.288)
Audit Committee	-0.0033834 (0.028) **	-0.001893 (0.264)	-0.0030717 (0.042) **	-0.0161326 (0.182)	-0.0095407 (0.479)	-0.0172363 (0.159)
Size	-0.0023577 (0.274)	0.0000341 (0.988)	-0.0021649 (0.303)	-0.0338593 (0.048) **	0.0015904 (0.931)	-0.0330605 (0.049) **
Age	0.0001709 (0.063)	-0.0011643 (0.005) **	0.0000341 (0.819)	0.0002595 (0.719)	-0.0143483 (0.000) **	0.0000808 (0.919)
Leverage	-0.0051406 (0.541)	-0.0087335 (0.293)	-0.0040801 (0.609)	0.0329014 (0.620)	-0.0110376 (0.867)	0.0371896 (0.572)
Non-performing Loans	-0.1332553 (0.003) **	-0.1451282 (0.009) **	-0.1857935 (0.000) **	-1.902598 (0.000) **	-1.72959 (0.000) **	-2.016568 (0.000) **
Loan Loss Provision	-0.0879003 (0.158)	-0.0829844 (0.254)	-0.0594441 (0.373)	-0.2688046 (0.583)	-0.1366396 (0.813)	-0.1808957 (0.719)
<i>R</i>	0.1710	0.4598	0.2445	0.2779	0.520336	0.290801
<i>F</i> Statistics (Prob)	(0.0014) **	(0.0000) **	(0.0000) **	(0.0000) **	(0.0000) **	(0.0000) **
<i>N</i>	160	160	160	160	160	160
Specification tests:						
LM test (pooled OLS vs. REM)		14.05 (0.0001) **			3.97 (0.0232) **	
Hausman test (FEM vs. REM)		16.753122 (0.0800)			47.083959 (0.062235)	
<i>F</i> -test (Pooled OLS vs. FEM)						

In reality, it has already been noted that there are few studies that have attempted to examine the association between both corporate governance and risk management, and their implication on bank performance. From the existing studies, such as Battaglia and Gallo (2015) finds a positive significant association between the existence of risk committee and bank performance.

This research link up this argument with its findings by arguing that large and independent risk committee has better monitoring capacity over credit risk, hence reflection of effective governance and greater profitability. Additionally, positive significant relationship was found between audit committee and ROA while also between bank size and ROE. However, findings of previous studies contradict with this study's findings as they found significant positive association. Therefore, it requires further investigation. On the other hand, findings of the present study related to bank size is very much consistent with the existing literature such as T-sorhe *et al.*, (2011), Salhi and Boujelbene (2012). Furthermore, it is estimated that the adjusted R-squared explained 24.45 percent of the variation of bank performance when ROA is used as dependent variable where adjusted R-squared explained 29.08 percent of the variation of the credit risk when ROE is assigned as dependent variable. On the both model F-statistics suggest that all the independent variable have combined significant impact on bank performance.

5. Conclusion

Empirical findings of this study have several implications regarding the banking system of Bangladesh as a whole. With the excessive risky lending and rise of default loans all over the banking system, this study found evidence that bigger board can better monitor the managers in their loan disbursements. Older banks were also found to be considerable more competent and effective in managing risks, as they have years of specialized knowledge navigating through the decades of banking reforms and political instability. Moreover, this study also demonstrated the importance of audit committee as a key player in ensuring that the bank takes less risk in their lending practices. With the alarming rise of default loans of Bangladesh, private banks should look to effectively employ audit committee and pack up bigger boards with experienced members to guarantee sound risk management and administer the managers. Among all other issues that continue to plague the economy, it comes as a good news to all that Bangladesh was able to improve its competitiveness in the Global Competitiveness Index (GCI), published by the World Economic Forum (WEF). This index is widely recognized as an acceptable proxy for a country's investment environment and attempts to capture the robustness of "institutions, policies, and factors that set the sustainable current and medium-term levels of (its) economic prosperity" (Shibli 2017). While the government and the major economic players as a whole look to work harder in the coming years to enhance the business climate, ensuring good governance practice and sound credit risk management would go a long way to warrant that the banking system is able to support the expansion in the coming decades. Findings of this study can assist the policy makers and bankers in setting strategies that could potentially guide the economy towards the path of such development.

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Intellectual Capital and Bank Performance in India: An Application of Panel Data Quantile Regression

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1. Introduction

Research in Intellectual Capital (IC) has gained momentum in recent past due to the growth and development of knowledge economy. In this new economy, the valuable resources that possess idiosyncratic features like inimitable and non-substitutable have emerged as the core contributor of value creation of a firm (Barney, 1986; 1991). This is evident from the Ocean Tomo's Intangible Asset Market Value Study (2015) [1], which shows that the share of intangible assets in the market value of S & P 500 firms increased from only 17 percent in 1975 to 68 percent in 1995 and further to 87 percent in 2015. Lev (2001) has also argued in a similar vein that about 80 percent of the corporate market value in US market remained unexplained in the traditional financial statement. This increasing gap between firms' book value and market value has drawn the attention of researchers to find out the 'hidden factors' (Lev, 2001). According to many researchers, IC is considered to be the contributor of hidden value that a traditional financial statement fails to capture and thus appears to be the crux of achieving sustainable competitive advantage (Edvinsson and Malone, 1997; Lev and Zarowin, 1999; Chen *et al.*, 2005). Consequently, the management of IC has become no longer a matter of choice, but a necessity. Although there is no universally accepted definition of IC, the definitions given by researchers encompasses some key words like knowledge, skill, experience, relationship, process, innovations, database which are intangible in nature and the root of creating added value for the firm (Stewart, 1997; Edvinsson and Malone, 1997). Based on the general concept of IC, it is basically divided into three components: human capital, structural capital and relational capital (Edvinsson, 1997).

In an attempt to make the invisible IC more visible, researchers have endeavored to measure IC from different angles (Sveiby, 2007), but most of the models are theoretical and qualitative in nature (Stahle *et al.*, 2011). Among the empirical models, the Value Added Intellectual Coefficient (VAIC) suggested by Pulic (2000) is widely used in practice. Employing VAIC model to measure IC and its components, enormous research efforts have been made by various researchers to throw light on the influence of IC on firm performance across the industries and countries in the world covering both developed and developing ones. Although the empirical evidences remain inconclusive encompassing positive, negative and insignificant association, a proliferation of articles advocate on the positive influence of IC on firm performance and discern the value generating ability of IC as the root for achieving sustainable competitive advantage (Chen *et al.*, 2005; Tan *et al.*, 2007; Yalama and Coskun, 2007; Puntilo, 2009; Kamath, 2010; Clarke *et al.*, 2011; Joshi *et al.*, 2013; Ghosh and Maji, 2015; Maji and Goswami, 2016). In banking sector also myriad of empirical evidences have shed light on the dominant role of IC for enhancing the financial

soundness of banks (Pulic, 2000; Goh, 2005; Mavridis, 2004; Mavridis and Kyrmizoglou, 2005; Mohiuddin, *et al.*, 2006; Yalama and Coskun, 2007; Liu, 2009; Kamath, 2010; Ghosh and Maji, 2012; Ghosh and Maji, 2015).

In order to examine the impact of IC on firm performance, most of the researchers have employed Ordinary Least Square (OLS) model using cross section or panel data. But the pooled regression methodology for the analysis of panel data fails to capture between years firm specific correlation into account within the industry that is very vital while assessing the contribution of IC on firm performance. This limitation can be overcome by using fixed-effect or random-effect panel regression model. Once again, these methods also suffer from the limitations that these are not robust to outliers, and the presence of some non-performing or out-performing firms may lead to inconsistent and biased results. Further, the extant literature suggests that the effect of potential covariates under study are homogeneous across the entire distribution of the response on the average, as the earlier researchers have modeled the conditional mean of firm performance given a set of covariates (IC and other control variables). It can, however, be argued that if the distribution of the response variable is substantially skewed, one can expect heterogeneity in the effect of study covariates in general, and at least at the extreme tails of the response distribution, in particular. Hence, if the distribution of the response variable is asymmetric and substantially non-normal, mean regression shall not be useful to capture the differential effects of the potential covariates along the quantiles of the response distribution.

The outcomes of the empirical literature relating to the influence of IC on firm performance motivate us to raise a pertinent question: is the impact of IC on firm performance homogeneous across all firms? This question is relevant because working in a similar environment some firms perform significantly better than others (out-performing firms) while the performance of some firms is very modest (non-performing firms). Thus, the contribution of this paper is to find out the answer of the following two questions, when the empirical literature on IC is silent about it.

- Why do some firms perform better than the others?
- What is the role of IC for the performance of out-performing firms and non-performing firms?

The existing literature demonstrates that management of knowledge based resources or IC is crucial for enhancing firm performance in the new economy. Further, the management of knowledge-based assets or IC is a continuous cycle of three interrelated elements: knowledge creation, knowledge dissemination and knowledge acquisition (Burton-Jones, 1999). It is very likely that the capacity of all firms to create, disseminate and acquire knowledge may not be the same. This implies that the efficiency of firms' in utilizing the intellectual capital for value generation cannot be the same. Thus, we believe that the empirical literature on the association between IC and firm performance fails to portray the true picture of the role of IC. It is also legitimate to expect that in the event of the skewed distribution of firm performance, the influence of IC at different locations of the distribution of firm performance would be different. With an intention to explore the influence of IC at different levels of firm performance, the present effort employs quantile regression model introduced by Koenker and Basset (1978). The study also intends to compare the result of quantile regression model with the outcome of appropriate panel data model that may be useful for policy implementation.

The present study is a modest attempt to address the above research question in the context of Indian banking sector. The selection of Indian banks for addressing the issues is found to be appropriate for many reasons. First, banking sector plays an important role for the economic development of India. As per the reports of the Economic Survey (2014-15), Indian service sector,

of which banking is an important component, is the second fastest growing service sector in the world with its compound average annual growth rate of 8.7 percent during 2001 to 2013. Second, human resources of banks perform the core banking activities of deposit mobilization and granting of loans and advances. Moreover, the technological innovation in the banking sector in India over the last decade has significantly changed the structure of banking services. Third, a study conducted by National Skill Development Corporation of India (2010) and the reports of the McKinsey & Company (2010) clearly points out that the success of Indian banks depends upon the management of intellectual resources, specifically the skill and efficiency of the bank employees. Fourth, increase in competition over the periods in Indian banking sector as evident from the existing literature (Prasad and Ghosh, 2005; Maji and Hazarika, 2016) forcing banks to provide new and innovative products and services, where IC plays crucial role, in order to retain the existing customers and attract new ones for sustaining in the market over a long period of time. Finally, the existence of all types of banks in terms of size, profitability, ownership etc. In India provides an appropriate platform for studying the behavior of IC on bank performance.

Against this backdrop, the rest of the paper is organized as: Section-2 includes a review of the existing literature and formulation of hypotheses. Section-3 is devoted for data and methodology adopted in this study. Section-4 presents the results of this study followed by concluding remarks in Section-5.

2. Review of literature and formulation of hypotheses

Intellectual capital derives its essence from the Resource Based View (RBV) of the firm. Penrose (1959) in her ground-breaking work on RBV recognized firm as ‘a collection of productive resources’ and argued that the performance of a firm depends on the utilization of both physical and intangible resources. This theory gained a lot of acceptance and opened up a new dimension of managing resources that possess idiosyncratic features like valuable, rare, inimitable and non-substitutable for achieving sustainable competitive advantage (Wernerfelt, 1984; Peteraf, 1993). This transition of economy from industrial age to post-industrial, knowledge-based era has altered the relative importance of economic parameters where the symbolic resources are supplanting the traditional physical and financial resources as the core contributor of value creation. Consequently, The RBV and other research streams like epistemology, organizational learning, organizational capabilities and innovation paved the way for the development of knowledge-based theory (Drucker, 1993; Burton-Jones, 1999), where knowledge based assets or intellectual capital is regarded as the engine of wealth creation process. Since, it is not possible to do justice to the vast literature on IC, we refer to the study of Lnkinen (2015) and Maji and Goswami (2015) for the development of different stages of IC research. Here we briefly sketch on the empirical association between IC and firm performance.

Plethora of empirical studies used Value Added Intellectual Coefficient (VAIC) model developed by Pulic (2000) as the measure of IC and its components to investigate the impact of IC on firm performance all over the world. A large number of researchers examined the influence of IC on firm performance in banking and financial service sectors. Pulic (2002) employing VAIC model ranked the efficiency and performance of Croatian banks during 1996-2000 and found significant difference in ranking. In case of banking sector in Japan and Greece, Mavridis (2004) and Mavridis and Kyrmizoglou (2005) respectively observed positive impact of IC and its components on firm performance. Similarly, Yalma and Coskun (2007) found same result for the banks listed in Istanbul stock exchange (Turkey) and concluded that IC has a greater importance on firm performance than physical capital. In contrast, for the same banks Samiloglu (2006) did not find any significant impact of IC on market to book ratio. The findings of Goh (2005) in Malaysian banking sector and Mohiuddinet *et al.*, (2006) for banks in Bangladesh indicated greater influence of human capital

than structural capital and physical capital on both accounting-based and market-based measures of bank performance. While Liu (2009) observed positive impact of VAIC and its components on bank performance in China, Puntilo (2009) found such association to be positive with capital employed efficiency only in Italian banking sector. In case of Indian banking sector, Kamath (2007), Mondal and Ghosh (2012), Ghosh and Maji (2012) and Ghosh and Maji (2015) also argued in favour of the positive influence of IC on bank profitability.

Sizeable number of studies in IT sector also indicates that IC has a significant contribution in enhancing firm performance. Wang and Chang (2005) in case of IT sector of Taiwan observed positive association between IC and firm performance. Tovstiga and Tulugurova (2007) also found positive influence of IC on profitability and market to book ratio in case of Russian IT sector. In contrast, Gan and Saley (2008) failed to find any significant influence of IC on market value for the firms belonging to Malaysian IT sector. But the study observed positive impact on profitability and productivity. On the other hand, the study of Ghosh and Mondol (2009) on Indian software and pharmaceutical sector argued that the IC has a positive influence on profitability but not on productivity and market value.

In case of drugs and pharmaceutical sector, Sharabati *et al.*, (2010) found positive influence of IC and its components on profitability and market to book ratio in Jordan. But Mehralian *et al.*, (2012) failed to establish any significant association on market to book ratio. In Indian pharmaceutical sector, the study conducted by Kamath (2008) concluded that domestic firms efficiently utilized their intellectual capital and in this respect human capital played a very vital role in improving firms' profitability and productivity. On the other hand, another study conducted by Vishnu and Gupta (2014) after modifying the VAIC model found positive association between profitability and human capital efficiency. But the study failed to reveal any significant association between profitability and structural capital efficiency.

Apart from studies conducted on specific knowledge based sectors, researchers have investigated the influence of IC on different firms listed in respective stock exchange. In South Africa, Firer and Williams (2003) observed insignificant influence of IC on firm performance (both profitability and market to book ratio). The study concluded that the performance of South African companies is mainly determined by the utilization tangible resources. In contrast, Chen *et al.*, (2005) in Taiwan and Tan *et al.*, (2007) in Singapore observed positive impact of IC on profitability and market value. But for the firms listed in stock exchange of Malaysia, Muhammad and Ismail (2009) found positive influence of IC on profitability but negative on market value. On the other hand, the findings of Clarke *et al.*, (2011) indicated positive influence of VAIC and its components on the performance of Australian publicly listed companies.

The review of above mentioned studies indicate that the researchers have observed mixed results, though barring a few cases the impact of IC on firm performance measured by profitability (return on assets) is positive and significant. But all the researchers have employed classical linear regression model, which focuses on modelling the conditional mean of firm performance given a set of covariates (IC and other control variables) and assumed the association to be homogeneous across firms. There are a few studies that employed quantile regression model relating to this issue. Shiu (2006) adopted quantile regression method to investigate the influence of IC on firm performance for the companies listed in Taiwan stock exchange in 2003. The study found that IC has a positive impact on market value, but the strength and level of significance vary at different levels of firm performance. Similarly, Yi-cheng and Chuan-rui (2009) also employed this method in case of Chinese listed companies during 2003 to 2005. The study observed that physical capital has a significant positive influence on the market value of all listed companies and the strength of

such influence increases at higher level of firms' value. On the other hand, human capital is also positively associated with firm value but the results are not significant at higher levels and the influence of structural capital is found to be significant at the median level of the response variable. However, none of them have explored separately the role of IC in a skewed and normal distribution of the response variable. Further, both the researchers have used the quantile regression for cross section data or for pooled data that fails to capture the individual specific source of variability and "unobserved heterogeneity" present in the data set. In this paper, we try to enrich the extant literature by providing empirical evidence on the role of IC at skewed and symmetrical distribution of firm performance by employing quantile regression for cross section data and the results of panel data quantile regression to capture the unobserved heterogeneity in the data set.

In order to achieve the objectives, the present study intends to test empirically the following research hypotheses:

- H1: Intellectual Capital Efficiency (ICE) is positively associated with firm performance*
- H2: The influence of Capital Employed Efficiency (CEE) on firm performance is positive*
- H3: The distribution of the response variable (the firm performance) is not uniformly symmetric over the years and thus a panel regression model based on conditional mean function is inadequate explore the effect of ICE on firm performance.*
- H4: The impact of IC at different quantiles of the conditional distribution of the firm performance is different and thus a set of quantile regression models is necessary to adequately explain the effect of ICE on firm performance.*

3. Data and Methodology

3.1. Data and study period

Present study is based on secondary data on listed Indian commercial banks collected from 'Capitaline Puls' corporate database for a period of 17 years from 1999-2000 to 2015-16. At the end of March 2000, there were 37 banks listed in Indian stock exchange (BSE or NSE). Thus, the sample for this study consists of 37 Indian commercial banks, of which 22 are from public sector and 15 from private sector. It is important to note here that after the banking sector reforms in India, all the listed banks are working under the similar environment.

3.2 Definition of variables

For measuring ICE and CEE present study has employed Value Added Intellectual Coefficient (VAIC) model developed by Pulic (1998, 2000). Pulic's (2000) VAIC model is the composite sum of Capital Employed Efficiency (CEE) and Intellectual Capital Efficiency (ICE). Again, ICE is the summation of Human Capital Efficiency (HCE) and Structural Capital Efficiency (SCE). Thus,

$$VAIC = ICE + CEE = HCE + SCE + CEE..... (i)$$

According to this model, a firm creates its 'added value' by utilizing both intellectual capital and physical capital and this 'added value' is the indicator of the efficiency of the firm in enhancing corporate value. Value added (VA) to the stakeholder is defined in this model as the difference between output (OUT) and input (IN). Thus,

$$VA = OUT - IN (ii)$$

Where, OUT is the total revenue generated by a firm in a year and IN is the summation of all operating expenses incurred by the firm in earning revenue except employee cost which are considered as a value creating factor (Clarke *et al.*, 2011). Alternatively, VA can be calculated as:

$$VA = NPAT + T + I + D + W (iii)$$

Where, NPAT is net profit after tax; T is the amount of tax paid; I is interest expenses; D is depreciation and amortization and W is employee wages and salaries.

After calculating VA to a company, its Human Capital (HC), Structural Capital (SC), and Capital Employed (CE) are calculated. In this model, HC is defined as overall salary expenditure (EC) at a point of time and SC is the difference between VA and HC, i.e., $SC = VA - HC$. On the other hand, CE is the book value of the net asset of the company.

Finally, HCE, SCE and CEE are calculated using the following equations:

$$HCE = VA / HC \dots\dots\dots (iv)$$

$$SCE = SC / VA \dots\dots\dots (v)$$

$$CEE = VA / CE \dots\dots\dots (vi)$$

According to this methodology, ICE is the indicator of the efficiency of a firm in utilizing its intellectual capital.

The firm performance in the present context is measured by employing standard accounting based measure of overall profitability, i.e. Return on Asset (ROA) [2]. ROA is defined as the ratio of operating profit to book value of total assets. ROA is widely used as the measure of firm performance in the empirical literature (Clarke *et al.*, 2011; Joshi *et al.*, 2013; Ghosh and Maji, 2015; Maji and Goswami, 2016).

3.3 Empirical Models

3.3.1 Panel data mean regression model

Appropriate panel data mean regression model for the present data set has been identified with the help of two widely used tests-Breusch-Pagan test and Hausman test. The outcome of these two tests advocate in favour of fixed effect regression model (test results are shown in Table-1). The present study, thus, has employed fixed effect regression model to estimate the coefficients.

The functional form of the models is:

$$Y_{it} = (\alpha + \mu_i) + X_{it} + \varepsilon_{it}, \text{ where } \varepsilon_{it} \sim IIDN(0, \sigma_e^2) \dots\dots\dots (vii)$$

The specific fixed effect regression model employed here is:

$$ROA_{i,t} = \beta_{1,i} + \beta_2 ICE_{i,t} + \beta_3 CEE_{i,t} + \varepsilon_{i,t} \dots\dots\dots (Model 1)$$

In this study we have not used any control variables since the focus of this study is to examine the influence of IC on firm performance after controlling the impact of physical capital (CE).

3.3.2 Quantile regression model for cross section data

The standard linear regression is a useful tool for summarizing the average relationship between the outcome variable of interest and a set of regressors, based on the conditional mean function $E[Y|X=x]$. This provides only a partial and sometimes biased view of the relationship. A more complete picture would provide information about the relationship between the outcome Y and the regressors X at different points in the conditional distribution of the outcome variable Y. Quantile regression (Koenker and Bassett, 1978) is a statistical tool for estimating functional relations between variables for all portions of a probability distribution.

Assuming that the conditional quantile function is unique and that it is linear, a linear quantile regression specifies the conditional τ -quantile $Q_\tau(Y_i|X_{1i}, \dots, X_{ki})$ of Y_i as a linear function of regressors $X_{1i}, \dots, X_{ki}$. For a sample $i = 1, 2, \dots, N$, the model is expressed as

$$Y_i = \beta_{(\tau,0)} + \beta_{(\tau,1)} X_{1i} + \dots + \beta_{(\tau,k)} X_{ki} + \epsilon_i^\tau \dots \dots \dots \text{(viii)}$$

$$= x' \beta_\tau + \epsilon_i^\tau \dots \dots \dots \text{(ix)}$$

Where X_{ji} is the i^{th} observation for regressor $j = 1, \dots, k$; $Q_\tau(\epsilon_i^\tau | x_i) = 0$. For a given quantile τ , β is estimated by minimizing, $\frac{1}{n} \sum_{i=1}^n \rho_\tau(y_i - x_i' \beta_\tau)$, where the check function with argument v is defined as

$$\rho_\tau(v) = \begin{cases} \tau v & \text{if } v \geq 0 \\ (1 - \tau)v & \text{if } v < 0 \end{cases}$$

The specific quantile regression for the cross section data in the present context is:

$$ROA_i = \beta_{\tau,0} + \beta_{\tau,1} ICE_i + \beta_{\tau,2} CEE_i + \epsilon_i^\tau \dots \dots \dots \text{(Model 2)}$$

3.3.3 Panel data quantile regression model with fixed effects

The conditional quantile specification stated above can be extended (Konker, 2004) to capture the individual specific source of variability or “unobserved heterogeneity” that was not adequately controlled for by other covariates earlier given that we have more than one observation available for each individual as it happens in a panel study. We consider the following model for the conditional quantile functions of the response of the t^{th} occasion on the i^{th} individual Y_{it} ,

$$Y_{it} = \alpha_i + X_{it}^{(1)} \beta_1 + X_{it}^{(2)} \beta_2 + \dots + X_{it}^{(p)} \beta_p + \epsilon_{it}^\tau \quad t=1, \dots, T; i=1, \dots, n. \dots \dots \text{(x)}$$

The value of t ($t = 1, \dots, T$), indexes the T panel observations on the dependent variable for a given subject, and i ($i = 1, \dots, n$) indicates the i -th subject (unit of analysis). $X_{it}^{(p)}$ is the t th observation for i^{th} subject on p^{th} covariate and $Q_\tau(\epsilon_{it}^\tau | x_i) = 0$. In this formulation the α 's have a pure location shift effect on the conditional quantiles of the response. The effects of the covariates, $X_{it}^{(p)}$ are permitted to depend upon the quantile, τ , of interest, but the α 's do not. To estimate this model for several quantiles simultaneously, the following quantity is solved:

$$\min_{(\alpha, \beta)} \sum_{k=1}^q = \sum_{t=1}^T = \sum_{i=1}^n w_k \rho_{\tau,k}(y_{it} - \alpha_i - x'_{it} \beta(\tau_k)) \dots \dots \dots \text{(xi)}$$

Where $\rho_\tau(v)$ is as defined earlier and the weights w_k control the relative influence of the q quantiles $\{\tau_1, \dots, \tau_k\}$, on the estimation of the α_i parameters.

Following fixed effects panel data quantile regression model is used in this study.

$$ROA_{i,t} = \beta_{\tau,i} + \beta_{\tau,1} ICE_{i,t} + \beta_{\tau,2} CEE_{i,t} + \epsilon_i^\tau \dots \dots \dots \text{(Model 3)}$$

4. Results and Discussion

4.1 Distribution of the ROA

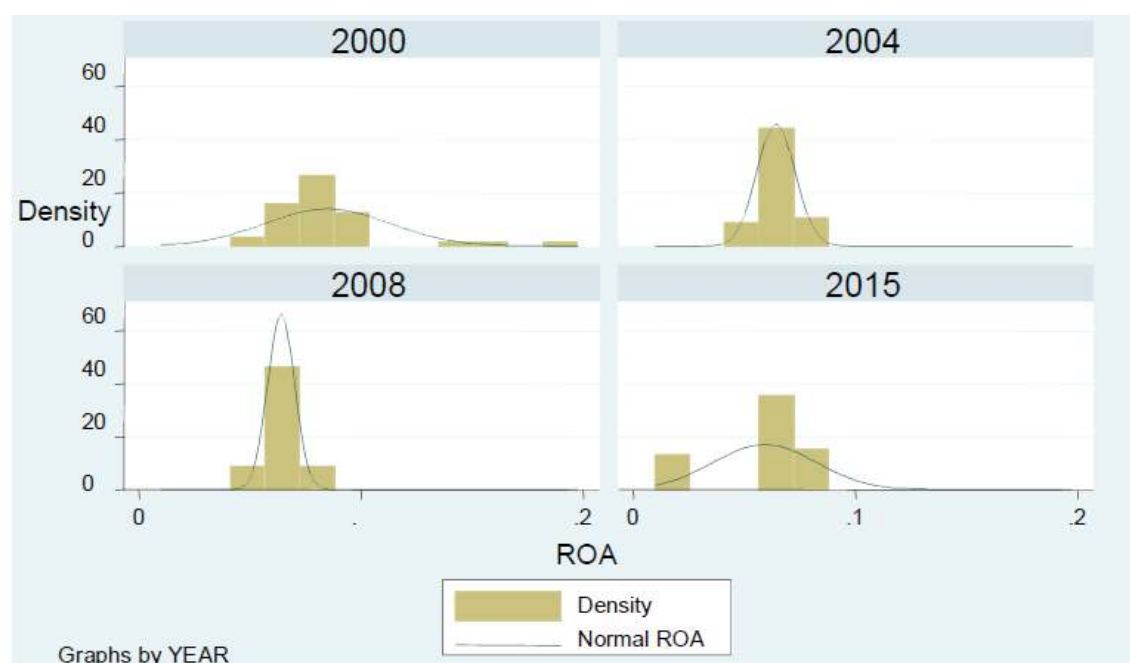
We have calculated univariate descriptive and robust statistics in order to explore the features of empirical distribution of the ROA and the results are shown in Table-1. We have selected four particular financial years to show the variable features of the distribution pattern over the entire period under consideration. First five rows of this table provide mean, 5 percent trimmed mean and median of the empirical distribution of the response variable. Near equality of these values for a given year indicates a symmetric distribution of the variable and otherwise with a skewness.

A cursory look into the table reveals that the assumption of symmetry may be tenable for the two financial years (2003-04 and 2007-08), but the same does not hold for the remaining. This finding is further upheld by the Figure-1, in which the histogram of ROA is plotted along with normal density curve. The interquartile statistic does not change much over the period implies that the within variability in the distribution of ROA is almost constant. The value of skewness also provides evidence of lack of symmetry and longer right and left tails for the years 1999-2000 and 2014-15 respectively.

Table 1: Distribution of ROA

Particulars	1999-2000	2003-04	2007-08	2014-15
Mean	0.081	0.064	0.064	0.061
5 percent Trimmed Mean	0.078	0.064	0.064	0.065
Median	0.074	0.063	0.064	0.070
Interquartile Range	0.02	0.01	0.01	0.01
Skewness	3.708	-0.152	0.053	-2.131
Percentiles:				
5 percent	0.055	0.048	0.054	0.050
10 percent	0.067	0.050	0.056	0.061
90 percent	0.102	0.077	0.073	0.085
95 percent	0.121	0.080	0.074	0.091

Figure : Distribution of ROA



4.2 Results of fixed effect regression model

Table-2 shows the results of fixed effect regression model. A look into the table reveals that the observed coefficients of both CEE and ICE are positive and the results are significant at 1 percent level. This indicates that both physical as well as intellectual resources have a positive impact on the bank performance measured by ROA. The findings of the present study support the results of Mavridis (2004), Mavridis and Kyrmizoglou (2005), Liu (2009), Ghosh and Maji (2012, 2015).

Further, the observed greater influence of ICE over CEE in the present context supports the empirical findings of Goh (2005), Mohiuddin *et al.*, (2006) and Yalma and Coskun (2007) in the context of banking sector. Although the observed explanatory power of the model is not very high, the F-statistic is significant at 1 percent level. The results, thus, support the alternative hypotheses H1 and H2.

Table 2:

Variables	Coefficient	t- statistic	R ²	F-statistic
CEE	0.484	11.67***	0.334	97.66***
ICE	0.278	8.63***		
Constant	0.048	1.32		
Notes: Dependent Variable - ROA; **** indicate significant at 1 percent level by two-tailed test.				
Panel data test results:				
Breusch-Pagan test: Chi-square = 7.97435with p-value = 0.004				
Hausman test: Chi-square = 12.6038with p-value = 0.013				

4.3. Results of quantile regression model for selected years

In view of the results of the univariate and robust statistics for the empirical distribution of ROA as explained in Section-4.2 above, we suspect the findings of the results derived from the fixed effect panel regression model. This is so since the assumption on the distribution of the error term in the fixed effect model and hence that of the response variable is not tenable to be approximately identically normally distributed over the entire study period. Thus, we seek to explore the effect of IC on bank performance (ROA) employing quantile regression models as proposed.

Practically, we are interested to study the role of IC at two tails of the conditional distribution of the bank performance (ROA) apart from the median value. Hence, simultaneous quantile regression models at seven interesting quantiles ($\tau = 0.05, 0.10, 0.15, 0.50, 0.85, 0.90$ and 0.95) of the distribution of bank performance (ROA) are employed in each year of the already identified four periods (Section-4.1), where the distribution is found to be far away from symmetry at the beginning of the study period (1999-2000) and at the end (2014-15) depicting near symmetry in the two middle periods. Regression results at different quantiles of the ROA are presented in Table-3.

The results show that in 1999-2000 the estimate coefficients of CEE are significantly positive at all quantiles, though the observed coefficient shows an increasing trend till the median value (0.5 quantile) and declines thereafter. This implies that banks' physical capital has a significant role in enhancing the financial performance. This is true because without adequate capital employed, the core activities of banks cannot be performed. However, after a certain point of time the relative influence of CCE declines specifically at the higher tail of the distribution of firm performance. On the other hand, the coefficient of ICE is found to be positive at all quantiles but significant only at upper quantiles (0.85, 0.90 and 0.95). Further the quantum of coefficient is also high at higher levels of the distribution. Indeed, the distribution of ROA as discussed in Section-4.1 depicts positive skewness, i.e. the existence of some out-performing firms. This implies that a bank can perform significantly better than others through efficient utilization of intangible resources or IC along with physical resources. The results, thus, indicates that the impact of IC at different quantiles of the conditional distribution of the bank performance is different. The crux of quantile regression lies in addressing this diverse role of IC at different levels of ROA that a fixed effect regression model fails to capture.

During the periods 2003-04 and 2007-08, the coefficients of both CEE and ICE are found to be positive and significant at all quantiles. The observed results, thus, supports the resourced based view of the firm (Wernerfelt 1984) and first two alternative hypotheses (H1 and H2) of this study

that both tangible and intangible resources play crucial role in value creation of firms. The results are also consistent with the findings of fixed effect regression model (Section-4.2). This implies that when the distribution of response variable is near symmetry, as evident from the analysis of univariate descriptive statistics, both quantile regression and panel data regression provide consistent result regarding the impact of ICE and CEE on ROA.

The result shows an interesting situation in the year 2014-15 where the coefficients of CEE are insignificantly negative at left tails of the distribution. But the observed coefficients are positive and significant at higher levels, although show a declining trend at upper quantiles. The coefficients of ICE also insignificantly associated with bank performance at the lower quantiles (i.e. at 0.05, 0.10 and 0.15). At median value, the coefficient of ICE is positive and significant at 10 percent level. However, at upper quantiles more precisely we can estimate the impact of ICE on ROA and also the values of coefficient show an increasing trend. It is notable here that the distribution ROA in this year depicts longer left tails (negatively skewed). This implies the existence of some non-performing firms in the Indian banking sector. The results of quantile regression indicate that these banks could not utilize their tangible and intangible resources in generating revenue. This may be due to tough competition among the banks in recent times. Alternatively, some banks performed well in the year due to utilization of intangible resources along with tangible resources. It is also worth noting that the result of fixed effect model fails to capture this issue.

The results of quantile regression, thus, support the alternative hypothesis H1, i.e. the influence of ICE on firm performance is positive when the distribution of the ROA is symmetric or near symmetric. This is also consistent with the result of fixed effect regression model. But if the distribution of ROA is skewed (positively or negatively), the impact of IC at different quantiles of the conditional distribution of bank performance is found to be different. In this situation, fixed effect regression model is inadequate to explore the true effect of IC on bank performance and a set of quantile regression models is required to adequately explain the impact. The observed results, thus, support the hypotheses H3 and H4. The pseudo R² of all estimated quantile regressions are quite satisfactory and found to be very high at higher quantiles.

Table 3: Results of Quantile Regression for Selected Years

Year	Variables	0.05	0.10	0.15	0.50	0.85	0.90	0.95
1999-2000	ICE	0.143 (0.92)	0.140 (0.92)	0.145 (0.98)	0.309 (1.36)	0.437*** (3.05)	0.505*** (3.52)	0.527*** (4.38)
	CEE	0.547* (1.96)	0.531* (1.83)	0.581* (1.98)	1.037*** (6.42)	1.001*** (25.06)	0.978*** (31.12)	0.974*** (41.05)
	Intercept	- 0.469**	-0.435** (-2.69)	-0.347** (-2.29)	0.085 (0.80)	0.252*** (11.81)	0.270*** (16.38)	0.273*** (22.10)
	Pseudo R ²	0.565	0.449	0.404	0.595	0.831	0.870	(0.916)
2003-2004	ICE	0.371*** (2.80)	0.372*** (2.99)	0.379*** (2.43)	0.570*** (4.50)	0.643*** (5.98)	0.649*** (6.16)	0.686*** (6.07)
	CEE	.787*** (4.76)	0.736*** (6.25)	0.907*** (7.72)	0.956*** (12.32)	0.909*** (31.25)	0.914*** (30.63)	0.920*** (30.72)
	Intercept	- 0.532***	- 0.458***	-0.308** (-1.98)	0.085** (1.99)	0.260*** (8.29)	0.271*** (9.74)	0.295*** (11.49)
	Pseudo R ²	0.723	0.689	0.683	0.723	0.816	0.827	0.837

Year	Variables	0.05	0.10	0.15	0.50	0.85	0.90	0.95
2007-2008	ICE	0.481*** (7.30)	0.484*** (7.23)	.448*** (9.26)	0.440*** (5.56)	0.447*** (3.30)	0.455*** (3.02)	0.459*** (3.61)
	CEE	0.654*** (5.86)	0.654*** (9.26)	0.711*** (12.95)	0.796*** (17.87)	0.858*** (5.48)	0.844*** (4.96)	0.621*** (4.31)
	Intercept	-	-	-	0.014	0.128	0.142	0.650***
	Pseudo R ²	0.318*** (-5.47)	0.313*** (-4.16)	0.225*** (-3.15)	(0.36) 0.807	(1.14) 0.779	(0.74) 0.732	(3.03) 0.788
		0.789	0.777	0.780				
2014-2015	ICE	-0.238 (-0.35)	-1.764 (-1.39)	-0.962 (-1.45)	0.091* (1.68)	0.093* (1.70)	0.139** (2.31)	0.147*** (2.72)
	CEE	-0.009 (-0.01)	-0.206 (-0.19)	-0.335 (-0.32)	0.487* (1.90)	.520*** (4.18)	0.399*** (3.15)	0.395** (2.60)
	Intercept	-2.408 (-2.23)	-1.015 (-1.04)	-0.562 (-0.69)	0.308** (2.45)	.399*** (12.06)	0.431*** (7.06)	0.463 (6.99)
	Pseudo R ²	0.134	0.179	0.196	0.255	0.404	0.414	0.456
Notes: Dependent variable is ROA; ***, ** and * indicates significant at 1 percent, 5 percent and 10 percent level respectively; t-statistics are shown in parenthesis.								

4.4 Results of quantile regression for panel data

The findings of fixed effect panel regression and quantile regression for selected years as discussed in Sections-4.2 and 4.3 respectively provide misleading results relating to the role of ICE in enhancing bank performance (particularly at the lower tails) when the distribution of the response variable is far away from symmetry. Nonetheless, the results of quantile regression at the higher quantiles are consistent with the findings of fixed effect model. This implies that the positive influence of IC is much higher for the highly profitable banks. Alternatively, it can be argued that a bank can improve its financial soundness and achieve competitive advantage by utilizing intellectual capital efficiently. But the quantile regression for cross section data does not capture the between years firm specific correlation among the variables. Hence, in order to re-validate the above findings, we have employed the fixed effect quantile regression for panel data [3] and the results are shown in table-4. For this, we have computed results at seven quantiles (0.10, 0.15, 0.25, 0.50, 0.75, 0.85, 0.90) to give a holistic picture of the impact of IC on ROA.

The results show that the coefficient estimates of ICE are positive and significant for all quantiles but the impact is more pronounced at higher quantiles. For instance, the coefficient of ICE has increased from 0.403 at 0.1 quantile to 0.848 at 0.90 quantile. This implies IC plays crucial role in creating significant difference between banks with out-performing and modest performing. The larger impact of IC for high value banks supports the findings of quantile regression for selected years. On the other hand, observed coefficients of CEE are positive and significant at all quantiles except at 0.10. This also indicates important role of tangible capital in improving bank performance. However, a cursory look into the observed coefficients of CEE indicate at the impact is more at average performance and it declines at upper quantiles. The results of quantile regression for the years where the distribution is found to be skewed also demonstrate the same. Thus, the results of panel data quantile regression support the alternative hypothesis H4, i.e. the impact of IC at different quantiles of the conditional distribution of the firm performance is different and a set of quantile regression is necessary to portray to true impact of IC on firm performance, which the panel data mean regression fails to capture.

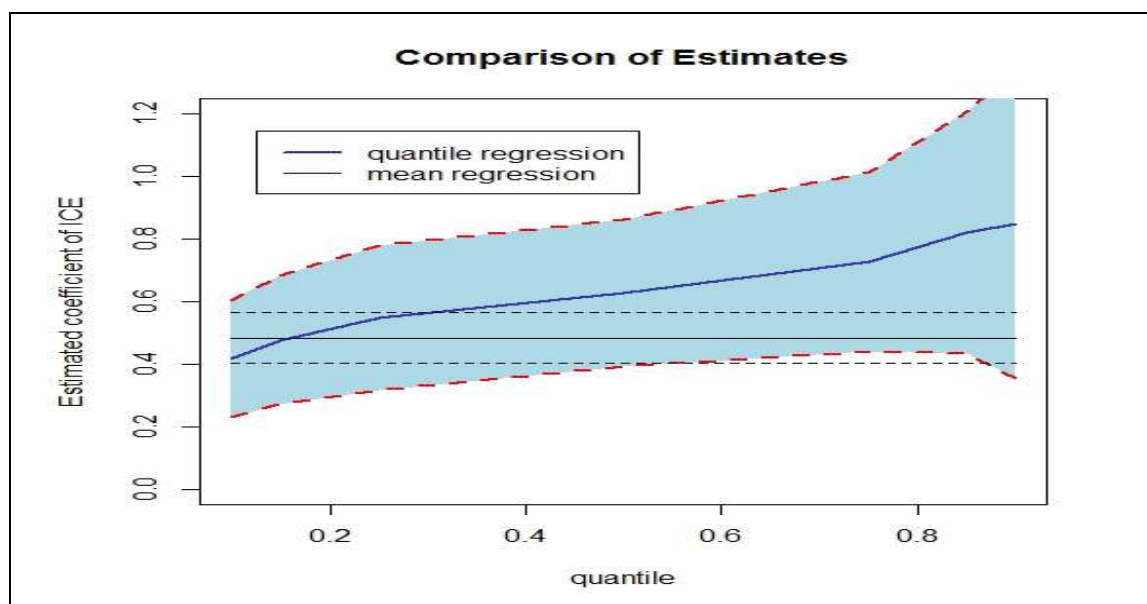
The difference between the results of panel data mean results and panel data quantile regression is more discernible in the graph. Figure-2 depicts the graph of estimated effect of ICE at various

quantiles at 95 percent confidence band for the coefficients of mean regression and quantile regression for panel data. A close inspection of the figure reveals that the effect of ICE based on quantile regression is increasing as we move from the lower tail to the upper tail of the distribution of ROA. However, the coefficient of mean regression remains same at all quantiles. This is because $\bar{zX}$ the mean regression depicts the average association between dependent variable and independent variable. It is also evident from the graph that the coefficients of both mean regression and quantile regression is almost same at 0.20 quantile, beyond that the effect of ICE on ROA is more in quantile regression. This clearly demonstrates the role of ICE in improving bank performance.

Table 4: Results of quantile regression for panel data

Quantiles	Intercept		CEE		ICE	
	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
0.10	-0.538	-1.956**	0.796	1.354	0.403	4.198***
0.15	-0.301	-1.481	1.168	2.431**	0.463	4.223***
0.25	-0.134	-1.244	1.385	4.222***	0.538	4.373***
0.50	0.042	1.084	1.554	8.057***	0.627	5.287***
0.75	0.141	4.735***	1.597	6.951***	0.728	5.301***
0.85	0.193	2.129**	1.585	4.501***	0.821	4.655***
0.90	0.228	1.003	1.554	3.097***	0.848	3.605***

Notes: Dependent variable-ROA; *** and ** indicate significant at 1 percent and 5 percent level respectively.



5. Concluding remarks

In an era dominated by knowledge and technology, intellectual capital efficiency is considered to be an important strategic weapon for the survival and growth of any enterprise. This is more likely to be true in a service sector like bank, the performance of which depends mainly upon the intangibles rather than the tangible assets. The present study is a modest attempt to explore the role of intellectual capital on the financial performance of listed Indian commercial banks employing panel data regression model and quantile regression model.

Employing fixed effect regression model, we find that intellectual capital has a significant positive impact on bank performance. But the results of quantile regression for selected years exhibit that in a skewed distribution of bank performance the positive impact of intellectual capital is significant for high value banks. The results of standard linear panel data regression fail to capture this issue and hence our study finds that a set of quantile regression models is required to adequately explore the role of intellectual capital. Nonetheless, our results of quantile regression for panel data also demonstrate the larger contribution of intellectual capital for high value banks. On the other hand, we find that physical capital (CE) has a significant positive impact on bank performance. Thus, while our panel data regression results support hypotheses H1 and H2, the outcomes of quantile regression advocate in favour of hypotheses H3 and H4.

Our findings of the present study would help policy or decision makers in several ways. First, utilization of physical resources is important for enhancing firm performance. But a firm can perform considerably better than others and achieve sustainable competitive advantage by utilizing intellectual capital efficiently along with physical capital. The present findings in the context of Indian banking sector support the reports of the National Skill Development Corporation of India (2010) and The McKinsey & Company (2010). Second, the investors should not rely only on physical resources of a bank for taking appropriate investment decision because intellectual capital is the crux of achieving sustainable competitive advantage. Third, the outcome of this study clearly indicates the significant role of ICE for segregating the banks into out-performing and non-performing banks. In order to capitalize the value of IC, banks should also disclose their intellectual resources along with mandatory financial disclosure to provide a complete picture about their competency in generating added value. Finally, the standard classical linear model provides only a partial view about the influence of intellectual capital on firm performance in a real business situation and hence decision should be based on appropriate model.

The present effort can be extended further by incorporating the components of IC (human capital and structural capital) to explore their role at different quantiles of the conditional distribution of firm performance. Further, a cross country comparison of banks may also be undertaken to enrich the extant literature on the role of IC in improving firm performance.

Notes:

- [1] Ocean Tomo's Intangible Asset Market Value Study, 2015, available from www.oceantomo.com. Intangible-Asset-Market-Value-Study.
- [2] ROA is used to measure bank performance because the extant literature indicates that the researchers have observed significant influence of IC on firm performance measured by ROA in both developed and developing economies. Hence, this measure helps us to explore the role of IC at different locations of the distribution of bank performance.
- [3] We have fitted panel data quantile regression model using R package "rqpd", www.r-project.org.

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Impact of NPA on Banking Performance & Shareholder Value Creation

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Literature Review

Many studies have been conducted on NPA and Bank performance having different lookouts on the same parameters. Few of the papers reviewed are Yadav S. Mahipal analyzed the impact of NPA of the profitability and profitability with other variables of public sector banks at aggregate and Sectoral level. He also studied the impact of NPA of efficiency and productivity. The time period covered under this study is 1994-95 to 2005-06 for the indices of profit, non-performing asset, spread burden, credit-deposits ratio, fixed deposits ratio, operating expenses, provisions and contingences and various other indices of all 27 public sector banks. To examine the impact of NPAs on productivity and efficiency, the data regarding to business per employee and profit per employee is collected for the period of 1997-98 to 2005-06. The tool used for analysis is regression. Statistically result shows the NPA affects profitability of bank upto 50 percent and its impact has increased to a great extent when it works with other banking variables.

Ranjani M.L has worked on magnitude of NPA and its impact in selected public and private sector banks in Bangalore City. He also looked into the measures adopted to reduce NPA and mechanism adopted for the same pre and post securitization act. Study is Primary data collected from 175 employees of 4 private and 7 public sector banks.

Kalvakuntala and Reddy has conducted a study on the impact of NPA on Banking share price movements and its market capitalization. The study is based on 5 years on 10 banks with high market capitalization. Granger Causality test and Johansen test was used to test the hypothesis statistically. The study found strong correlation on NPA with market capitalization as well as Stock prices.

Sharma and Rathore investigated the impact of NPA on Indian scheduled commercial banks. The research is based on 10 years data and regression analysis is used to test the statistics. ROE, ROA and net interest margins have been used as proxy variables for profitability measure. Gross NPA to gross advance ratio and net NPA to net advance ratio has been used as independent variables as a measure of NPA. The study reveals that profitability is getting significantly affected by NPA.

Balasubramaniam C.S has found that NPA's does not impact only profitability of banks but it also impacts the liquidity, management time, effort and other operations of scheduled commercial banks.

Narula and Singla assessed the performance of NPA of Punjab National bank and its effects on profitability for a period of six years (2006-2012). Findings of the study shows an increase in the NPAs of bank every year for the mismanagement on part of bank. As profits go up, the NPA of bank also goes up as a result of mismanagement.

Malyadri and Sirisha (2011) worked for comparative analysis of NPA in weaker section of private and public sector bank. He also did a comparison of old private sector and new private sector banks for a period of seven years. The study observed greater penetration of public sector banks in weaker section compared to private sector. Study also showed decline in the ratio of NPA which leads to improvement in the quality of assets.

Chaudhuri Datta Tamal (2005) has talked about the negative effects of NPA on the shareholders' value and capital raising capability. He emphasized on the need of developing State Resolution Mapping (SRM) framework to save the assets from deterioration.

Isaac and Otchere did research on privatized banks in middle and low income countries. Study observed significant improvements in operating performance of private banks. Study also reveals that privatization encourages excessive risk taking in developing countries as a result of which banks end up having higher amount of NPAs when compared to their counterparts in developed countries.

Need for the study

NPA in loan portfolio affects operational efficiency which in turn affects profitability, liquidity and solvency position of the banks. Keeping this in view, this study has been carried out to study the causes and effects of the Non-Performing Assets on banking performance and shareholder value creation. Study will be emphasized from the period of 2005-2017 for Indian commercial banks. For studying impact of NPA on bank performance, Bank performance measures such as ROE, EPS, and DPS will be used. For studying impact of NPA on shareholder value creation; EVA will be used as measure for shareholder creation. For studying impact of NPA on market performance of equity share of Indian banks, MVA will be used as measures. In short this study will overall impact of NPA on bank performance, share value creation and market Performance

Research Objective

The main aim of the study is to find the answer to the following research question:

What is overall impact of NPA on bank performance, share value creation and market Performance?

Objective

To empirically analyse and interpret statistical relationship

- To study the trend of Non- Performing Assets of Indian Commercial Banks
- To study impact of NPA on bank performance, bank performance measures such as ROE, EPS, DPS will be used
- To study studying impact of NPA on shareholder value creation; EVA will be used as Measure for shareholder creation.
- To study studying impact of NPA on market performance of equity share of Indian banks, MVA will be used as measures.

This study has been carried out to study the causes and effects of the Non-Performing Assets on banking performance and shareholder value creation.

Cause	Effect	Parameters Selected for Study
NPA	Banking Performance	ROE, DPS, EPS
NPA	Shareholder value Creation	EVA
NPA	Market Performance	MVA

Research Methodology

Study will be emphasized from the period of 2005-2017 for Indian commercial banks. For studying impact of NPA on bank performance, Bank performance measures such as ROE, EPS, and DPS will be used. For studying impact of NPA on shareholder value creation; EVA will be used as measure for shareholder creation. For studying impact of NPA on market performance of equity share of Indian banks, MVA will be used as measures. In short this study will overall impact of NPA on bank performance, share value creation and market response.

Research Design

The nature of this research is discrete and flexible in addressing the research aim which is to examine the possible bank in the India with a particular focus on the period from 2005-2017. We have chosen a descriptive research design to more openly achieve the research objectives which are difficult to address in exploratory research design (Creswell, 2003). In addition, this study is mainly based quantitative or empirical data and therefore detailed analyses are required which are easily achievable in descriptive design.

Sample data and its sources

Secondary data has been used for this study. The macro economic data for India has been collected from Data book for planning commission. The bank wise data has been collected from RBI, CMIE-prowess and from the annual reports of each bank was considered. The present work has considered almost all the major banks in India which counted up to 40 banks and the time period is from 2005-2017.

The population of this study is the Indian commercial banks. Currently 48 listed Public and private banks are running their operations in the India. However, 40 banks are selected for this study. The data of other banks such as co-operative and foreign banks are not considered to avoid its possible impact on research findings and conclusions.

There are currently (27) Twenty-Seven Public Sector Banks out of which (19) Nineteen is Nationalized Bank, (6) Six are SBI & its Associates and rest (2) two are other Public Sector Banks. There are currently (21) Twenty-One Private Sector Banks are Operating in India.

We have covered (24) Twenty-four Public Sector Banks and (16) sixteen Private Sector Banks for our empirical study for 12 years i.e. (2005-2017).

Table 1: Banks Adopted for Empirical Study

S. N.	Bank Name	Type of Bank	Listing of Bank Stocks in India
1	Allahabad Bank	Public Sector	29 th Nov. 2002
2	Andhra Bank	Public Sector	1 st Apr. 2001
3	Bank of Baroda	Public Sector	19 th Feb. 1987
4	Bank of India	Public Sector	30 th Apr. 1987
5	Bank of Maharashtra	Public Sector	12 th Apr. 2004
6	Canara Bank	Public Sector	23 rd Dec. 2002
7	Dena Bank	Public Sector	15 th Jan. 1997
8	Federal Bank	Private Sector	8 th Feb. 1995
9	HDFC Bank	Private Sector	8 th Nov. 1995
10	ICICI Bank	Private Sector	17 th Sep. 1997
11	Indian Bank	Public Sector	1 st Mar. 2007
12	Oriental Bank of Commerce	Public Sector	2 nd Jul. 1997
13	State Bank of India	Public Sector	1 st Mar. 1995
14	Union Bank of India	Public Sector	24 th Sep. 2002
15	Vijaya Bank	Public Sector	10 th Jan. 2001

16	Axis Bank	Private Sector	16 th Nov. 1998
17	Central Bank of India	Public Sector	21 st Aug.2007
18	City Union Bank	Private Sector	25 th Aug. 1998
19	Corporation Bank	Public Sector	1 st Dec. 1997
20	Development Credit Bank	Private Sector	27 th Oct. 2006
21	Dhanalaxmi Bank	Private Sector	1 st Apr. 2000
22	IDBI Bank	Public Sector	20 th Sep. 1995
23	Indian Overseas Bank	Public Sector	7 th Dec. 2000
24	Indusind Bank	Private Sector	28 th Jan. 1998
25	IngVysya Bank	Private Sector	1 st May. 1996
26	Jammu & Kashmir Bank	Private Sector	22 nd Jul. 1988
27	Karnataka Bank	Private Sector	10 th May 2000
28	KarurVysya Bank	Private Sector	26 th Jul. 2000
29	Kotak Mahindra Bank	Private Sector	20 th Dec. 1995
30	Lakshmi Vilas Bank	Private Sector	21 st Jun. 2000
31	Punjab National Bank	Public Sector	24 th Apr. 2002
32	Punjab & Sind Bank	Public Sector	30 th Dec. 2010
33	South Indian Bank	Private Sector	8 th Dec. 1998
34	State Bank of Bikaner & Jaipur	Public Sector	24 th Jan. 1998
35	State Bank of Mysore	Public Sector	20 th Apr. 2000
36	State Bank of Travancore	Public Sector	31 st Dec. 2001
37	Syndicate Bank	Public Sector	22 nd Dec. 1999
38	UCO Bank	Public Sector	9 th Oct. 2003
39	United Bank of India	Public Sector	18 th Mar. 2010
40	Yes Bank	Private Sector	12 th Jul. 2005

Tools and Techniques for Analysis

The data collected for the present analysis is balance panel data. So, the relationship between the dependent and independent variables is obtained from a regression model called panel regression analysis. Because panel data have both cross-sectional and time series dimensions, the application of regression models to fit econometric models are more complex than those for simple cross-sectional data sets. Nevertheless, they are increasingly being used in applied work and the aim of this chapter is to provide a brief introduction. A panel is described as balanced if there is an observation for every unit of observation for every time period and as unbalanced if some observations are missing, the banking data considered is a balanced panel. Panel data are cross-sectional and time-series. Panel data may have group effects, time effects, or the both, which are analyzed by fixed effect and random effect models.

Panel data models examine group (individual-specific) effects, time effects, or both. These effects are either fixed effect or random effect. Panel data models examine fixed and/ or random effects of entity (individual or subject) or time. The core difference between fixed and random effect models lies in the role of dummy variables. If dummies are considered as a part of the intercept; this is a fixed effect model. In a random effect model, the dummies act as an error term.

A standard specification is

$$Y_{it} = \beta_1 + \sum_{j=2}^k \beta_j X_{jit} + \sum_{p=1}^s \gamma_p Z_{pi} + \delta_i + \varepsilon_{it}$$

Where Y is the dependent variable, the X_j are observed explanatory variables and the Z_p are unobserved explanatory variables. The index i refer to the unit of observation, t refers to the time period, and j and p are used to differentiate between different observed and unobserved explanatory variables. A trend term t has been introduced to allow for a shift of the intercept over time. If the

implicit assumption of a constant rate of change seems too strong, the trend can be replaced by a set of dummy variables, one for each time period except the reference period.

Variables Selected for Study

Dependent variables is EPS, ROE, DPS, EVA, MVA

Independent variable is NPA

Research Variables

Dependent variable is, EPS, ROE, DPS, EVA, MVA are the variables which represents different performance measure and creation of shareholder value and market indicator

1. MVA = Market value of company – Invested capital
2. EVA = NOPAT - (Equity x Cost of Equity)
3. Earnings per share = (Net Profit after Taxes – Preference Dividends) / Number of Equity Shares
4. ROE = Net income after tax / (Equity share holder capital + reserves – Preliminary expenses)
5. DPS = Total Dividend / Number of Equity share

Independent variables is NPA: Net Non-Performing Asset of banks on yearly basis

Regression equation model for the study:

$$NPA_{it} = \alpha_0 + \alpha_1 EVA_{it} + e_{it}$$

$$NPA_t = \beta_0 + \beta_1 EPS_{it} + u_{it}$$

$$NPA_{it} = \gamma_0 + \gamma_1 DPS_{it} + v_{it}$$

$$NPA_{it} = \chi_0 + \chi_1 ROE_{it} + \varepsilon_{it}$$

$$NPA_{it} = \nu_0 + \nu_1 MVA_{it} + \dot{E}_{it}$$

Market Value Added (MVA)

MVA is the difference between the current market value of a firm and the capital contributed by investors. The market value added measurement shows the net difference between a company's market value and the cost of its invested capital. According to Stern Stewart (2006), if the total market value of a company is more than the amount of capital invested in it, the company has managed to create shareholder value. If the market value is less than capital invested, the company has destroyed shareholder value. Book value of equity refers to all equity equivalent items like reserves, retained earnings and provisions. In other words, in this context, all the items that are not debt (interest bearing or noninterest bearing) are classified as equity. According to Stewart, Market value added tells us how much value the company has added to, or subtracted from, its shareholders investment. Successful companies add their MVA and thus increase the value of capital invested in the company. Unsuccessful companies decrease or deteriorate the value of the capital originally invested in the company. Whether a company succeeds in creating MVA or not, depends on its rate of return. If a company's rate of return exceeds its cost of capital, the company will sell on the stock market with premium compared to the original capital. On the other hand, companies that have rate of return lesser than their cost of capital sell with discount compared to the original capital invested in company. Whether a company has positive or negative MVA depends on the rate of return compared to the cost of capital. Impact of NPA on MVA depends upon whether banks have positive or negative Rate of Return on equity.

Economic Value Added in banks is a tool that focuses on maximizing shareholder wealth. Economic Value Added (EVA) which is a residual value measure, developed by the consulting company Stern Stewart & Co and among the most widely used measures of shareholder value, Young O'Byrne (2001). According to Young O'Byrne (2001) the major benefit of EVA is that it can be calculated and implemented at all levels of a company. EVA equals the spread between return on net assets and the cost of capital, multiplied by invested capital. Another popular measure is the economic profit measure put forward by Koller, Goedhart & Wessels (2010) which is very similar to the EVA model. This model has gained in popularity over the last years because of its close relation to economic theory and a company's competitive strategy Koller, Goedhart & Wessels (2010). It highlights whether the company is capable of earning more or less than its cost of capital. The key issue with the two models is however, that they fail to account for synergies between the different business units of a company. They therefore have some limitations when it comes to representing the total value generation in a company, Young O'Byrne (2001).

$$\text{EVA} = \text{NOPAT} - (\text{Equity} \times \text{Cost of Equity})$$

No. of Equity Share = Equity Capital/ Face Value per Share

Equity = Equity share capital + Reserves and surpluses – Miscellaneous expenses

Return on Equity percent = (Net income/ Equity)*100

$$\text{Cost of equity (CAPM is used)} E(R_i) = R_f + \beta_{im}(E[R_m] - R_f)$$

where, $E(R_i)$ is cost of equity $E[R_m]$ is the expected return on market portfolio; it is the rate of return that an equity investor expects to earn for investing in equity market rather than investing in risk free asset. In this study CNX bank average daily return is taken as proxy for $E[R_m]$, R_f is the nominal rate of return on risk free asset. Minimum interest rate to be given by Indian bank for deposit above one year as prescribed by Reserve Bank of India is taken as proxy for R_f . β_{im} is the CAPM beta which is a measure of systematic risk of equity. Higher the Beta, higher the risk. Beta here has been calculated based on stock prices vis-a-vis NIFTY for each year separately. The expected return or cost of equity is expressed as linear combination of risk free rate and firm specific risk premium. Equity market risk premium is the difference between expected market return and risk free rate. It is the rate of return that an equity investor expects to earn for investing in equity market rather than investing in risk free asset. Risk premium is the compensation for bearing additional risk. Both market return and Beta are highly volatile, and if annual market return and yearly beta.

Earnings Per Share (EPS)

EPS is considered most important variable to determine the value of a stock. EPS is allocation of profits to each share outstanding in the company. EPS often ignores the capital requirement to generate the net earnings in the calculation. Out of two companies the company which generates same EPS with less capital is more efficient. There can be chances that the earnings are manipulated which in turn make EPS to be vulnerable. Hence it is advisable that the EPS should be used in conjunction with analysis of financial statements and other relevant measures.

Dividend Per Share (DPS)

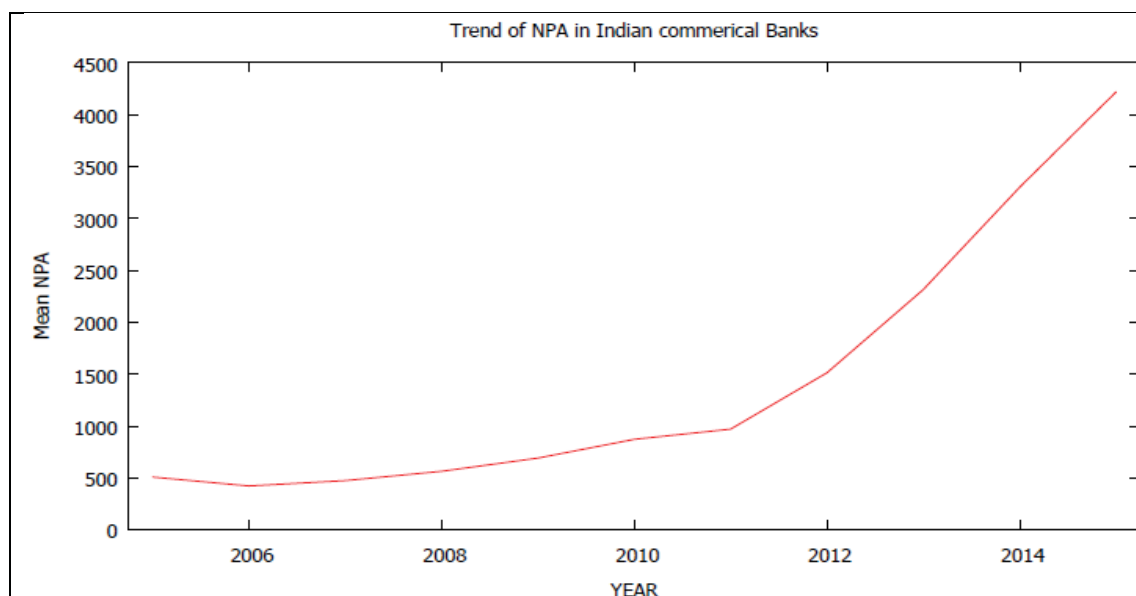
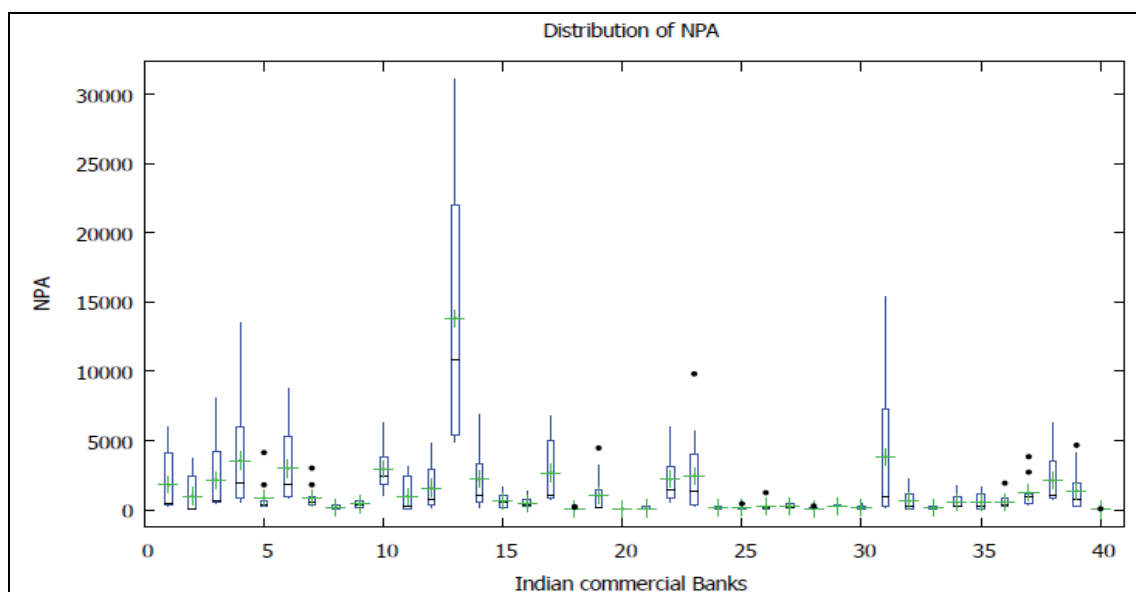
Dividend is returns given by the company to the shareholders. Shareholder's value is derived from company's profits, and the amount it pays out in dividends. Many companies focus on increasing DPS as it is a great way to indicate strong performance of the company to its shareholders.

Return on Equity (ROE): Return on Equity (ROE) is the amount of profits returned as a percentage of shareholders equity. ROE measures the efficiency of the company's management in deploying the shareholders' capital. This metric is important especially from point of view of investors as it will help to know how much additional revenue would be generated after using his/her investment. However one needs to keep in mind that higher ROE does not always indicate

the higher efficiency because when the company is financed by debt the ROE increases even after the income remains constant.

Empirical discussion and findings

1. Trend analysis of NPA in Indian commercial banks



2. Correlation Matrix of NPA, MVA, EVA, ROE, EPS and DPS

Correlation coefficients, using the observations 1:01 - 40:11

5 percent critical value (two-tailed) = 0.0935 for n = 440

	MVA	EVA	ROE	EPS	DPS	NPA
MVA	1	0.4346	0.1428	0.4245	0.3482	0.0931
EVA		1	0.2897	0.8092	0.7502	0.0351
ROE			1	0.269	0.245	-0.1493
EPS				1	0.96	0.0477
DPS					1	0.0827
NPA						1

From the above correlation matrix .ROE is highly negatively correlated with NPA whereas very low positive correlation with EVA .This indicates NPA is showing impact on performance of banks but very low correlation with regards to shareholder value creation.

3. Study of impact of NPA on MVA

Table 1: Panel Regression Result showing Impact of NPA on MVA of Indian Banks

Particulars	Panel Regression Models					
	Pooled Regression Model		Fixed Effect Model		Random Effect Model	
const	107.43	***	132.52	***	121.17	***
NPA	0.0143452	*	- 0.00298715		0.00503	
R-squared	0.008671		0.265942		0.265942	
Adjusted R-squared	0.006392		0.191795		0.191795	
P-value(F)	0.051749		3.72E-11		3.72E-11	
Durbin-Watson	0.689253		0.924705		0.924705	
rho	0.656838		0.510835		0.510835	
Breusch-Pagan test	p-value = 5.19275e-017		So Random effect model has to be selected			
Hausman test	p-value = 0.0978579		So Random effect model has to be selected			

In above table which defines the relation of NPA with MVA, Breusch-Pagan test was found significant so RE Model was selected and Hausman test was not significant so RE Model was selected. NPA is showing non-significant relationship. The value of R-Squared is 0.26 in this model which shows that 26 percent variation in the dependant variable is described by the independent variables. In this model the Adjusted R square is 0.19 which is near to the value of R-Squared which indicates that samples are not over fitted and there is no problem generalizability. These values are very close, anticipating minimal shrinkage based on this indicator. The value of Durbin Watson is 0.92 which shows that there is no possibility of autocorrelation in residuals. The model is good fit as p value (F) is 0.000 which indicates the variation in dependent variable is explained by independent variables. So by above analysis, model can be interpreted as fit model for defining the Impact of NPA on MVA of banks share.

As per the model, Impact of NPA on MVA is at very minimum level as very much adverse to result expected. It indicates that there are numerous other determinants impacting market value added and NPA can be one of them.

4. Study of impact of NPA on ROE

Table 2: Panel Regression Result showing Impact of NPA on ROE of Indian Banks

Particulars	Panel Regression Models					
	Pooled Regression Model		Fixed Effect Model		Random Effect Model	
const	13.5023	***	14.5439	***	14.2807	***
NPA	- 0.000413651	***	- 0.00113046	***	- 0.000947	***
R-squared	0.022283		0.456736		0.456736	
Adjusted R-squared	0.020025		0.401583		0.401583	
P-value(F)	0.001797		1.99E-32		1.99E-32	
Durbin-Watson	0.53523		0.936011		0.936011	
rho	0.669796		0.458457		0.458457	
Breusch-Pagan test	p-value = 2.05561e-060		So Random effect model has to be selected			
Hausman test	p-value = 0.00103583		So Fixed effect model has to be selected			

In above table which defines the relation of NPA with ROE, Breusch-Pagan test was found significant so RE Model was selected and Hausman test was significant so FE Model was selected. NPA is showing negative significant relationship with ROE. The value of R-Squared is 0.45 in this model which shows that 45 percent variation in the dependant variable is described by the independent variables. In this model the Adjusted R square is 0.40 which is near to the value of R-Squared which indicates that samples are not over fitted and there is no problem generalizability. These values are very close, anticipating minimal shrinkage based on this indicator. The value of Durbin Watson is 0.93 which shows that there is no possibility of autocorrelation in residuals. The model is good fit as p value (F) is 0.000 which indicates the variation in dependent variable is explained by independent variables. So by above analysis, model can be interpreted as fit model for defining the Impact of NPA on ROE of banks share.

Due to NPA cost of debt i.e the interest rises. The increase in interest reduces the profitability. Due to decrease in net income the bank is unable to efficiently use the shareholders' investment and likewise unable to return value to Equity shareholders.

5. Study of impact of NPA on EVA

Table 3: Panel Regression Result showing Impact of NPA on EVA of Indian Banks

Particulars	Panel Regression Models					
	Pooled Regression Model		Fixed Effect Model		Random Effect Model	
const	14.1809	***	18.5999	***	16.2921	***
NPA	-0.000635857		-0.00241204	**	-0.000888	
R-squared	0.001232		0.254093		0.254093	
Adjusted R-squared	-0.001069		0.178558		0.178558	
P-value(F)	0.464688		4.22E-10		4.22E-10	
Durbin-Watson	0.930401		1.235111		1.235111	
rho	0.474148		0.330118		0.330118	
Breusch-Pagan test	p-value=1.87823e-014		So Random effect model has to be selected			
Hausman test	p-value = 0.0105181		So Fixed effect model has to be selected			

In above table which defines the relation of NPA with EVA, Breusch-Pagan test was found significant so RE Model was selected and Hausman test was significant so FE Model was selected.

NPA is showing negative significant relationship with EVA. The value of R-Squared is 0.25 in this model which shows that 25 percent variation in the dependant variable is described by the independent variables. In this model the Adjusted R square is 0.17 which is near to the value of R-Squared which indicates that samples are not over fitted and there is no problem generalizability. These values are very close, anticipating minimal shrinkage based on this indicator. The value of Durbin Watson is 1.23 which shows that there is no possibility of autocorrelation in residuals. The model is good fit as p value (F) is 0.000 which indicates the variation in dependent variable is explained by independent variables. So by above analysis, model can be interpreted as fit model for defining the Impact of NPA on EVA of banks share. So by above study it is observed that NPA has negative impact on EVA, That is wealth creation of shareholder value.

6. Study of impact of NPA on EPS

Table 4: Panel Regression Result showing Impact of NPA on EPS of Indian Banks

Particulars	Panel Regression Models					
	Pooled Regression Model		Fixed Effect Model		Random Effect Model	
const	44.5373	***	48.4368	***	47.4605	***
NPA	0.00152258		-0.001167		-0.000622	
R-squared	0.002276		0.484689		0.484689	
Adjusted R-squared	-0.000023		0.432505		0.432505	
P-value(F)	0.320286		1.38E-36		1.38E-36	
Durbin-Watson	0.4547		0.876026		0.876026	
rho	0.712017		0.536133		0.536133	
Breusch-Pagan test	p-value = 1.8013e-089		So Random effect model has to be selected			
Hausman test	p-value = 0.3255		So Random effect model has to be selected			

In above table which defines the relation of NPA with EPS, Breusch-Pagan test was found significant so RE Model was selected and Hausman test was not significant so RE Model was selected. NPA is showing negative non-significant relationship with EPS. The value of R-Squared is 0.48 in this model which shows that 48 percent variation in the dependant variable is described by the independent variables. In this model the Adjusted R square is 0.43 which is near to the value of R-Squared which indicates that samples are not over fitted and there is no problem generalizability. These values are very close, anticipating minimal shrinkage based on this indicator. The value of Durbin Watson is 0.87 which shows that there is no possibility of autocorrelation in residuals. The model is good fit as p value (F) is 0.000 which indicates the variation in dependent variable is explained by independent variables. So by above analysis, model can be interpreted as fit model for defining the Impact of NPA on EPS of banks share.

As we know EPS reflects the performance of the banks. There are several factors which have impact on the EPS of the Banks. NPA is one of them. It is observed that even when the NPAs of the banks are on rise, in corresponding year the EPS is also on rise. This is because the net income that we consider also includes the income generated from other sources. Increased NPA will 'ceteris paribus' cause the EPS to decrease. NPA leads to blocking of money this in turn leads to the bank's reduced capacity to invest in other remunerative projects. Thus NPA not only impact the current earnings but also future earnings of the banks. This hampers the profitability and liquidity of the banks.

7. Study of impact of NPA on DPS

Table 5: Panel Regression Result showing Impact of NPA on DPS of Indian Banks

Particulars	Panel Regression Models					
	Pooled Regression Model		Fixed Effect Model		Random Effect Model	
const	7.78399	***	8.58893	***	8.32972	***
NPA	0.000428186	*	-0.00012837		-6.99E-06	
R-squared	0.006838		0.471201		0.471201	
Adjusted R-squared	0.004529		0.417104		0.417104	
P-value(F)	0.08603		3.97E-34		3.97E-34	
Durbin-Watson	0.308617		0.573283		0.573283	
rho	0.764898		0.67125		0.67125	
Breusch-Pagan test	p-value = 7.48851e-081		So Random effect model has to be selected			
Hausman test	p-value = 0.202593		So Random effect model has to be selected			

In above table which defines the relation of NPA with DPS, Breusch-Pagan test was found significant so RE Model was selected and Hausman test was not significant so RE Model was selected. NPA is showing negative non-significant relationship. The value of R-Squared is 0.47 in this model which shows that 47 percent variation in the dependant variable is described by the independent variables. In this model the Adjusted R square is 0.41 which is near to the value of R-Squared which indicates that samples are not over fitted and there is no problem generalizability. These values are very close, anticipating minimal shrinkage based on this indicator. The value of Durbin Watson is 0.57 which shows that there is no possibility of autocorrelation in residuals. The model is good fit as p value (F) is 0.000 which indicates the variation in dependent variable is explained by independent variables. So by above analysis, model can be interpreted as fit model for defining the Impact of NPA on DPS of banks share. The payout of dividends is from earnings. As seen before, NPA causes earnings to fall, this also reduces the payout to shareholders. Decreased profits leads to less available funds in banks and therefore banks return less value to their shareholders. This has negative impact on performance of the bank. This may erode the value of shareholders' investment in the bank.

Conclusion

The main goal is to empirically analyse and interpret statistical relationship to study the trend of Non-Performing Assets of Indian Commercial Banks, to study impact of NPA on bank performance, bank performance measures such as ROE, EPS, DPS will be used, to study studying impact of NPA on shareholder value creation; EVA will be used as measure for shareholder creation and to study studying impact of NPA on market performance of equity share of Indian banks, MVA will be used as measures. From the above correlation matrix .ROE is highly negatively correlated with NPA whereas very low positive correlation with EVA. This indicates NPA is showing impact on performance of banks but very low correlation with regards to shareholder value creation. As per the model, Impact of NPA on MVA is at very minimum level as very much adverse to result expected. It indicates that there are numerous other determinants impacting market value added and NPA can be one of them. Due to NPA cost of debt i.e the interest rises. The increase in interest reduces the profitability. Due to decrease in net income the bank is unable to efficiently use the shareholders' investment and likewise unable to return value to Equity shareholders. Increased NPA will 'ceteris paribus' cause the EPS to decrease. NPA leads to blocking of money this in turn leads to the bank's reduced capacity to invest in other remunerative projects. Thus NPA not only impact the current earnings but also future earnings of the banks. This hampers the profitability and liquidity of the banks. The payout of dividends is from earnings. As seen before, NPA causes earnings to fall; this also reduces the payout to shareholders. Decreased profits leads to less available funds in banks and therefore banks return less value to their shareholders. This has negative impact on performance of the bank. This may erode the value of shareholders' investment in the bank

NPA is continuously showing an increasing trend which is alarming warning to banking sector and economy .NPA is negatively correlated with ROE. All panel regression model used for studying cause effect relation was good fit model as p value (F) is 0.00 which indicates in dependent variable is explained by independent variable.

Summary of Result of models indicating cause and effect relation

Cause	Effect	DV	Model p-value (F)	R-squared
NPA	Banking performance	ROE	Good fit model	45 percent
NPA	Banking performance	DPS	Good fit model	47 percent
NPA	Banking performance	EPS	Good fit model	48 percent
NPA	Shareholder value creation	EVA	Good fit model	25 percent
NPA	Market performance	MVA	Good fit model	26 percent

Non-Performing assets is a huge problem for a developing nation like India. Lately, the government has been taking steps like NPA ordinance which empowers RBI to directly intervene in bad loans resolution to assist & aid banks. We are hopeful that with political will & support, RBI would be finally above to cure the cancer of NPA in our economy.

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The Myth and Reality of Islamic Banking Practices in Bangladesh: New Evidence from the Structural Equation Modeling Approach

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Introduction

The growth of Islamic banking is flourishing over the time among the Muslim and non-Muslim countries (Hassan, 1999; Aggarwal & Yousef, 2000; Iqbal & Molyneux, 2005). With 15 percent annual growth rate, Islamic banks are now operating in more than 75 countries around the world with USD \$700 billion assets (Khan F., 2010). However, the entire banking sector around the world, excluding three countries: Iran, Pakistan, and Sudan are dominated by the conventional banking. Like other Muslim countries, Bangladesh has enormous demand for interest free banking system. In line with this expectation, a number of Islamic banks have been established. At present, six full fledged Islamic banks and more than 18 conventional banks are providing Islamic banking products and services in the market. The growth of Islamic banks is increasing and now most of the conventional banks are opening Islamic banking window or Islamic banking branches (Hassan, 1999). However, the question has been raised by scholars about the operation and performance of Islamic banks. A number of scholars accused the present practices of Islamic banking services are very difficult to differentiate from its counterpart (Chowdhury, *et al.*, 2017). Even after three decades of inception, the operation of Islamic banking is still not clearly distinguishable from the conventional banking. Evidence suggested that most of the transactions in Islamic banks do not confirm the Profit and Loss Sharing (PLS) method (Aggarwal & Yousef, 2000). In Pakistan, *Murabaha* and *Ijara* subsume 82 percent of the total financing, where the *Mudarabah* and *Musharakah* in total financing is only 4 percent (IFSB, 2014). In case of MENA, *Murabaha* comprise 75 percent and countries like UAE, Kuwait, and Yemen have no share of equity financing. In the context of Saudi Arabia, Lebanon, and Bahrain, the portion of equity-based financing is below 8 percent (Ali, 2011).

Theoretically, Islamic banks are free from *Riba* (interest) and they maintain all the rules of Islamic *Shariah* (Iqbal & Mirakhor, 2011). Islamic banking is very similar to the conventional banking, but Islamic *Shariah* enforces some constraints on operations and performs activities. The substantial constraint is the ban of a fixed amount or a predetermined rate of return on transactions. The *Quranic* verses on *Riba*, lead to the conclusion that *Riba* is prohibited in Islamic financing. A fixed amount of rate of return is replaced by variable amount rate of return in Islamic banking. This system is widely known as Profit-Loss Sharing (PLS) method. Islamic banks also use markup method to ensure interest-free transactions. This markup is similar to debt financing of conventional banking. Siddiqi (1983) and Khan & Mirakhor (1987) suggested that markup financing is disputed in Islamic *Shariah* and this open a “back door” for interest thus it needs to restrict or avoided. The banks around the world used the term “*Riba free transaction*” for their product and services. The myths of interest-free banking have been flourished over the time due to appreciating conclusion in the light of the reality. There is a widely accepted concept among the

customers that Islamic banks offer the long-term loan. But the reality is, Islamic banks also offer short-term and midterm loan facilities for the entrepreneurs and SME business. Islamic banks rarely offer long-term loan to the capital seeker entrepreneurs. Chapra (1992) and Siddiqi (1983) highlighted that the Islamic bank offers long-term financing in selected goal oriented sectors. The financing ensures the growth of the selected sector as well as the country.

Although Islamic banking sector is flourishing in double digit but it is inherently important to examine what factors are really causing this growth. Is it only for the religious matter or for any economic benefit? There are several factors associated with the selection of Islamic banking institutions for transactions. Several studies have taken attempts to find out the factors which customers perceive while selecting an Islamic bank. The factors are: Islamic religious obligation, compliance with *Shariah* principles, Islamic reputation and image, Islamic working environment, cost of product/ service, variety of product/ service, higher benefits, fast and efficient service, easy loan system, credit worthiness, applicant's character, SME loan, free from *Riba*, financial counseling, customer service, profitability, security, low charges, location proximity, confidentiality, customer service quality, professionalism, rate of return, and online banking etc. (Erol & El-Bdour, 1989; Gerrard & Cunningham, 1997; Omer, 1993; Khattak & Kashif-Ur-Rehman, 2010). These studies have been conducted on Islamic banks in Bahrain, Jordan, Singapore, Indonesia, Ghana, Malaysia, Pakistan, USA, and the UK. The findings of the previous studies are not applicable in Bangladesh. As a developing country in South Asia, the country has a different culture, economic conditions, legal and technological environment.

However, the prime objective of this research is to feature some significant factors that are necessary for the fulfillment of the reality of Islamic banking by the Islamic banks under the Bangladeshi customers' aspect. This study also identified and validated the dimensionality of the reality of Islamic banking approach. This study will help bankers, related authorities, and interested individuals to gain better insights about the Islamic banking in Bangladesh. They will comprehend the reality of Islamic banking and overlook the traditional myths of these institutions.

Literature Review

The review of the literature on Islamic banking and its evaluation around the world lead to the startling but significant inference that the practice and theory of Islamic banking nothing more than mythology. Islamic banking is generally defined as a special form of banking system which operates without the norms of interest. The inseparability between the norms of interest and bank concludes that Islamic banking system is a contradictory and mythical concept. Though Islamic banks developed on the basis of the principles of Islamic Sharia, the reality is that Islamic banking is not completely followed in any society or country around the world. Islamic banks around the world developed, packaged, marketed and sold their products under the Islamic umbrella (Askari, Iqbal, Krichne, & Mirakho, 2015).

Prohibition of *Riba* is the most significant Islamic principle in Islamic banking. Theoretically, Islamic banks are not engaged in lending or borrowing money. Therefore, Islamic banks structured their products and services which are free of interest. Islamic banks introduce Profit-Loss Sharing (PLS) principle and markup principle instead of conventional interest-based principle (Aggarwal & Yousef, 2000; Al-Ajmi, Hussain, & Al-Saleh, 2009). But, the reality is Islamic banks do not confirm that all their transactions are based on the PLS principle. Evidence found that much of transactions of Islamic banks are like conventional banking based on the debt instruments. In this case, Islamic banks disrupt the basic principle of Islamic Shariah (Al Shattarat & Atmeh, 2016; Aggarwal & Yousef, 2000). More often the banks failed to distinguish between PLS and non-PLS mode of financing. As a result of failure the myths of PLS-based Islamic financing through away from the reality.

The PLS is the widely accepted principle to ensure that transaction is completely free of interest. Under this principle, Islamic banks accept ex-post facto in profit-sharing instead of ex-ante fixed

return on financial transactions. Islamic banks developed two instruments based on the PLS principle: *Mudarabah* (joint venture) and *Musharakah* (equity participation) (Aggarwal & Yousef, 2000). *Mudarabah* is an Islamic contract where bank supply the money and the other party contributes effort and exercise control over the venture. In *Shariah* law, different responsibilities and duties are assigned to this two party. In case of loss, the bank received negative returns on their investment and other party received no compensation for their effort (Atmeh & Ramadan, 2012). *Musharaka* is a financing technique followed by Islamic *Shariah*. This the classical partnership agreement bank and other parties jointly supply capital for the venture. The profit is distributed among the partners in pre-determined rations and the loss is borne by each partner in the proportion of the contribution (Hanif, 2016; Yatim, 2009). Several studies conclude that the mode of Profit-Loss Sharing (PLS) is the best alternative to the norms of interest in nothing but the myth.

Islamic banks also use markup principle for their interest-free transaction. In this principle Islamic bank finance for the purchase of an asset in exchange for negotiated profit margin. Islamic banks developed two instruments based on the markup principle: *Murabaha* (cost-plus financing) and *Ijara* (leasing financing) (Aggarwal & Yousef, 2000). In *Murabaha* Islamic financing, the bank purchase asset from a customer for a fixed profit over the cost of the item and then sell the items back to the customers in installments. In this case, interest is not counted in *Murabaha* financing (Wulandari, Putri, Kassim, & Sulung, 2016; Ahmed, Sabirzyanov, & Rosman, 2016). In *Ijara* financing, bank purchase asset and the customers can use it for fixed charges. The ownership of the asset remains to the bank. The *Ijara* contract is very similar to the traditional contract which is known as lease today (Gupta, 2015). This mode of financing is popular around the world and these are permissible in Islam but not purely PLS-based financing.

In developing countries where corruptions and inefficiency are very common and widespread. In this countries, the loan taker often used the fund for their consumption, or spectacle negative return. In such cases, banks face agency problem in financing through the PLS instruments. The markup instruments are widely used in Islamic banking, their acceptability is still disputed in Islamic banking. Markup instruments should be restricted or avoided, because of this open doors of *Riba*. The markup system enforces constraints on the entrepreneurs to invest in new projects (Aggarwal & Yousef, 2000).

Another widespread myth is that Muslims around the world prefer Islamic banks, because of their belief in Islamic Sharia. Several studies have been conducted to find out the factors that are associated with customer preferences toward Islamic banks. The customers of Islamic banks are choosing an Islamic bank on their belief on Islamic Sharia. Religious factor is the crucial factor that customer consider while selecting Islamic banks (Al-Sultan, 1999; Omer, 1993). Haron, Ahmad, & Planisek (1994) has been conducted a study on bank patronage factors of Muslim and non-Muslim customers in Malaysia. The result highlighted that customer of Islamic banks often considers the good reputation of the banks, fast and efficient services, and speedy transactions.

Kennington, Hill, & Rakowska (1996) conducted a study in Poland to find out the Islamic bank selection criteria. The findings of the study highlighted that bank reputation, cost of product and service were the most significant factors which influence customers followed by the image of the bank, the stability of the bank, and professionalism of the staff. In Bahrain (Metawa & Almossawi, 1998) a study has been conducted on customer perception regarding Islamic banking and the finding showed that compliance of Islamic *Sharia* is the most important factor followed by the cost of product and service and location proximity. Metawa & Almossawi (1998), Naser, Jamal, & Al-Khatib (1999) and Ahmad & SudinHaron, (2002) highlighted that, Islamic reputation and image, Islamic working environment, cost of product and service, variety of product and service, higher benefits, fast and efficient service, easy loan system, creditworthiness, applicant's character, SME loan, free from interest, financial counseling factors were also considered crucial to select the Islamic banks.

Almossawi (2001) find out that ATM location, parking facilities, the behavior of bank staffs, and reputation of the bank are the important factors to select a bank. This study was conducted among the 1000 students to find out the banking selection criteria. Okumus (2005) conducted a study on 161 customers in Turkey on customer satisfaction and banking selection criteria. The result of the study highlighted that religious factor, friendliness of banking staff is the crucial criteria to select the bank. Mokhlis, Salleh, & Mat (2009) also conducted a study on Malaysian customer's commercial bank selection. The result of the study revealed that the location of the bank, ATM facilities, financial benefit packages, security of the transaction are the significant factor to consider a bank. Masood, Aktan, & Amin (2009) highlighted that reputation of the bank, religious factors are the crucial factors followed by Islamic Shariah principles, benefits, and confidentiality. Khattak & Kashif-Ur-Rehman (2010) conducted a study on Pakistani customers. The result of the study shows that bank reputation, confidentiality, and religious factors are important for banking selection criteria.

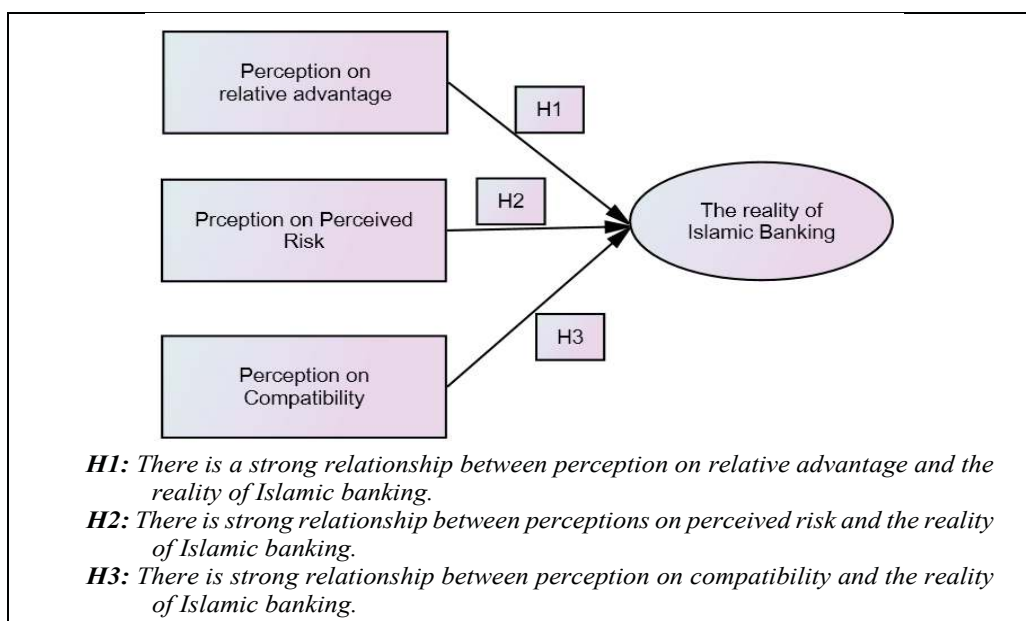
In spite of Islamic believe Muslim around the world pointed out that interest of norm is the basic cause of ills such as unemployment, inflation, poverty and economic inequality. The prohibition of norms will be halting these ill causes. Thus, Muslims around the world expect interest-free banking system. Islamic banking around the world unsuccessful to change the rate of unemployment, inflation, poverty and economic inequality. Many peoples believe that Islamic banks provide a significant amount of short-term loan to the entrepreneurs. Long-term financing is not very noteworthy amount in Islamic banks. Islamic bank financing does not extend more than five years. In this case, conventional banks consider financing for the midterm. The fact is connected to that markup instruments tend to short-term and PLS financing is generally for the long duration. However, conventional bank outperformed Islamic banks in providing long-term financing (Aggarwal & Yousef, 2000; Metwally S., 1992). The mythology of Islamic banking widely spread a new issue around the Muslim world. The umbrella of myths should be eradicated to learn the real features of Islamic banking.

Conceptual Framework of this Research

The conceptual framework of the study has been developed on the basis of the reviewed literature. The conceptual framework is utterly consistent with the objectives of this research. In this framework perception on relative advantage, perception on perceived risk, and perception on compatibility are independent variables and reality of Islamic banking is the dependent variable. The framework depicts the relationship between independent variables and dependent variable. The components variables of perception on relative advantage are-no fulfillment of Islamic religious obligation (PRA3), Islamic reputation and image of bank (PRA4), cost of product/ service of bank (PRA6), and lower benefits of bank (PRA7), fast and efficient service facilities (PRA8). The components variables of perceptions on perceived risk are-it is not the easy system of obtaining loan (PPR1), applicant's character, capacity, and collateral analysis (PPR2), it is not easy and sound credit card management (PPR4), Riba/ interest is visible (PPR6), no sound customer service (PPR8). And the components variables of perception on compatibility are-low profitability (PC1), more secure deposit (PC2), loan facilities against deposit (PC3), higher charges (PC4), and convenient location (PC5).

There are divergent views of the concept of reality of Islamic banking from various scholars. Indeed, no systematic review of the literature on the concept of myth and the reality of Islamic banking has yet been published under a developing country consumers' perspective. In Bangladesh, till today very few articles have stated the concept of the reality of Islamic banking and none mentioned the factors that could potentially affect the reality of Islamic banking from the perspective of consumer perceptions. Based on the previous literature reviews; this research concentrates on conceptual framework of factors which is depicted in Figure-1.

Figure 1: Conceptual Framework of this Research



Materials and Methods

This study employed a four-step methodology. First, the questionnaire consists of 26 items has been generated based prior studies. The questionnaire was tested by the agency of following the face validity. Though, each variable consists of items with latent variables such as perception on relative advantage; perceptions on perceived risk; perception on compatibility. Secondly, a pilot study has been conducted with 50 respondents from Sylhet city, a northeastern city Bangladesh. In light of the pilot study, researcher made some minor revisions in the instrument. In the third step, this research utilized a survey by means of advantageous testing strategy by using Islamic bank's office's intercept from imperative places in Sylhet. This study employed a seven-point rating scale (1 = strongly disagree; 2 = moderately disagree; 3 = slightly disagree; 4 = neutral; 5 = slightly agree; 6 = moderately agree and 7 = strongly agree). At long last, an aggregate of 350 people reacted and their reactions were gathered through the Islamic bank's office capture of different classifications of customers. At last, this investigation has dropped 50 instruments and has kept 300 instruments for further analysis.

Data Analysis Procedure

Information was coded and broke down by using the Statistical Packages for Social Sciences and AMOS programming. The data analysis of this study was organized into four stages by using the descriptive, exploratory factor analysis, confirmatory factor analysis and structural equation modeling techniques. The principal phase of the information examination utilized means, recurrence, and rates to speak to the respondent's general statistic profile. The second phase of the data analysis utilized the Exploratory Factor Analysis (EFA) to perceive the factor structure and check the authenticity and the resolute nature of the scale. The decision was to consider a factor as enormous was perceived by a factor stacking more unmistakable than 0.5 and an eigenvalue identical to or more critical than 1. Cronbach's alpha coefficient was using to test the constancy of the scale. This research employed confirmatory factor analysis and structural equation modeling to test the hypothesis. This research utilized chi-square measurement/ degree of freedom comparative fit index (Bentler, 1990), non-normed fit index (Bentler and Bonett, 1980; Tucker and Lewis, 1973) and root-mean-square residual (Hancock and Freeman, 2001) were inspected to assess the fit of models. Earlier examinations, for example, Hu and Bentler (1999) and Kline (1998) featured that χ^2/df under 3 is viewed as a solid match. For CFI and NFI, qualities ought to be more like one be viewed as a solid match. An estimation of under 0.8 for RMSEA demonstrates solid match.

Analysis of Data

Descriptive analysis results of survey and respondent's profile

In this research 350 hundred questionnaires were distributed to the prospective respondents who are the customer of different full-fledged Islamic banks in Sylhet city (a northeastern city of Bangladesh). A total of 350 questionnaires was collected and the total raw response rate is 100.0 percent. The respondents' demographic profile is shown in Table-2. The questionnaires were primarily answered by the person who has an account in Islamic banks.

Table 2: The Demographic Characteristics of the Respondent

		Frequency	Percent	Cumulative Percent
Age	Under 25	64	18.3	18.3
	25-35	127	36.3	54.6
	36-45	85	24.3	78.9
	Above 45	74	21.1	100.0
	Total	350	100.0	
Gender	Female	141	40.3	40.3
	Male	209	59.7	100.0
	Total	350	100.0	
Marital status	Single	103	29.4	29.4
	Married	234	66.9	96.3
	Divorced	13	3.7	100.0
	Total	350	100.0	
Level of Education	Primary	42	12.0	12.0
	Secondary	113	32.3	44.3
	Bachelor	101	28.9	73.1
	Master	87	24.9	98.0
	Another	7	2.0	100.0
	Total	350	100.0	
Level of income	Under 25,000 Tk.	166	47.4	47.4
	25,000 – 35,000 Tk.	85	24.3	71.7
	36,000 – 45,000 Tk.	62	17.7	89.4
	Above 45,000 Tk.	37	10.6	100.0
	Total	350	100.0	
Profession	Government service holder	57	16.3	16.3
	Non-government service holder	69	19.7	36.0
	Businessman	116	33.1	69.1
	Housewife	56	16.0	85.1
	Student	36	10.3	95.4
	Another	16	4.6	100.0
	Total	350	100.0	
Religion aspect	I am a Muslim	308	88.0	88.0
	I am a Non-Muslim	42	12.0	100.0
	Total	350	100.0	

Table-2 highlighted that majority of the respondents are businessmen (33.1%). The table also underlined that educational qualifications and the majority of the respondents hold secondary level (32.3%) of education. The majority of the customers of the Islamic banks is Muslim (88.0%). The other demographic factors like age, gender, level of income, and marital status were also shown in Table-2.

Table 3: The pattern of banking behavior of the respondents

		Frequency	Percent	Cumulative Percent
Banking with more than one bank	Yes	217	62.0	62.0
	No	133	38.0	100.0
	Total	350	100.0	
Previous experience of Islamic banking	Yes	201	57.4	57.4
	No	149	42.6	100.0
	Total	350	100.0	
Interested product and service	Al-Wadeah	28	8.0	8.0
	Bai Bithaman Ajil	14	4.0	12.0
	Ijara	12	3.4	15.4
	Mudaraba	239	68.3	83.7
	Murabaha	43	12.3	96.0
	Musharaka	10	2.9	98.9
	Sukuk	2	.6	99.4
	Another	2	.6	100.0
	Total	350	100.0	
Duration of banking relationship	Less than 1 year	92	26.3	26.3
	2-5 years	147	42.0	68.3
	Above 5 years	111	31.7	100.0
	Total	350	100.0	
Efficiency and performance of Islamic banks during recent ages	Extremely good	65	18.6	18.6
	Quite good	106	30.3	48.9
	Slightly good	111	31.7	80.6
	Neither good/ bad	52	14.9	95.4
	Slightly bad	9	2.6	98.0
	Quite bad	4	1.1	99.10
	Extremely bad	3	.9	100.0
	Total	350	100.0	

The pattern of banking behavior of the respondents is crucial to understand the senior of Islamic banking. The majority (62.0%) of the respondents conducting their banking with more than one bank. The majority of the respondents (57.4%) of the Islamic banks were also using the service of Islamic banks before this service. The majority of the respondents (42.0%) of the Islamic banks have 2-5 years long relationship with the bank. Table-3 also highlighted that respondents of Islamic banks prefer Mudaraba (68.3%) and Murabaha (12.3%) product of the banks. The majority (80.6%) of the respondents of believing that the efficiency and performance of Islamic banks during recent ages are good while 19.4 percent disagreed.

Before the factor analysis and structural equation modeling, the descriptive analysis of the research has been also conducted. Table-4 illustrated the mean score and standard deviation of the selected items.

Table 4: Descriptive Statistics

	N	Mean	Std. Deviation
Age	350	2.48	1.020
Gender	350	1.60	.491
Marital status	350	1.74	.516
Level of education	350	2.73	1.029
Level of income	350	1.91	1.034
Profession	350	2.98	1.355
Religion aspect	350	1.12	.325
Banking with more than one bank	350	1.38	.486
Customer of an Islamic bank	350	1.43	.495
Duration of banking relationship	350	2.05	.761
Interested product and service	350	3.87	1.131
Efficiency and performance of Islamic banks during recent ages	350	2.59	1.173
Valid N (list-wise)	350		

Reliability analysis

Cronbach's alpha is applied for assessing the internal consistency of the instruments. The Cronbach's alpha for the general scale (26 things) was 0.962 which mirrored that the every one of the things of the instruments were in a commendable range. This infers the constancy and consistency of the things in the instruments were all around alright that lead researchers to advance for other measurable test.

Exploratory Factor Analysis (EFA)

To evaluate the authenticity and trustworthiness of each develop, factor examination and unfaltering quality testing were used. After factor analysis utilizing the varimax turn in perception on relative advantage (5); perceptions on perceived risk (5); perception on compatibility (5), 15 items were kept. To test the suitability of factor examination, the Kaiser-Meyer-Olkin (KMO) general Measure of Inspecting Ampleness (MSA) was figured as 0.844 (Table-5) which is laudable (Kaiser, 1974). Moreover, the communalities reach out from 0.55 to 0.93 with a normal incentive more than 0.71, proposing that the fluctuation of the first esteems were decently clarified by the regular components.

Table 5: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.844
Bartlett's Test of Sphericity	Approx. Chi-Square	1856.891
	Df	325
	Sig.	.000

Table 6: Summary of Exploratory Factor Analysis

Factors Name	EV	PV	CV	Component variables	Factor Loading
Perception on relative advantage Chronbach alpha = 0.831	12.332	13.007	13.004	No fulfillment of Islamic religious obligation (PRA3)	0.667
				Islamic reputation and image of bank (PRA4)	0.689
				Cost of product/service of bank (PRA6)	0.723
				Lower benefits of bank (PRA7)	0.734
				Fast and efficient service facilities (PRA8)	0.690
Perceptions on perceived risk Chronbach alpha = 0.752	2.584	7.453	21.434	It is not the easy system of obtaining loan (PPR1)	0.629
				Applicant's character, capacity, and collateral analysis (PPR2)	0.721
				It is not easy and sound credit card management (PPR4)	0.655
				Riba/ interest is visible (PPR6)	0.710
				No sound customer service (PPR8)	0.683
Perception on compatibility Chronbach alpha = 0.843	1.545	1.834	29.563	Low profitability (PC1)	0.773
				More secure deposit (PC2)	0.711
				Loan facilities against deposit (PC3)	0.661
				Higher charges (PC4)	0.782
				Convenient location (PC5)	0.799

EV: Eigenvalue, PV: Percent of variance, CV: Cumulative variance

At that point Bartlett's Test of Sphericity was directed, yielding a huge Chi-Square an incentive keeping in mind the end goal to test the importance of the relationship lattice ($\chi^2 = 1856.891$, $df = 325$, Sig. = percent.000). The two tests showed that factor examination was fitting for this investigation (Hair *et. al.*, 1998). Three stable variables were gotten from the investigation. The substance of the three factor measurements were dissected and named as takes after (Table-6).

Validity measurement

In this research, content legitimacy manages “how illustrative and exhaustive the items were in making by the scale” (Bohrnstedt, 1970). This exploration evaluated them by looking at the procedure by which scale items were produced (Straub, 1989). In this study, definitions of the constructs were proposed based on the literature review. In the SEM (Structural Equation Method) technique, build legitimacy was seen as speculation testing in which particular relations were placed and tried which were connected in this investigation (Hoyle & Smith, 1994). Keeping in mind the end goal to display joined authenticity, items that measure a similar trademark should connect incredibly with each other in case they are significant measures of the thought. The result of the correlation analysis of this research has also validated the convergent validity. Then again, discriminant legitimacy is how much measures of various ideas are particular: if at least two ideas

are one of a kind, at that point measures of each ought not relate well. For the analysis, a first request CFA was utilized in this exploration. To approve the consequences of the factor analysis, Bartlett's trial of sphericity and Kaiser Meyer-Olkin measure of testing sufficiency (Kaiser's MSA) were used. The estimation of Kaiser's MSA was suggested 0.60 or more (Hair *et al.*, 1995; Tabachnick and Fidell, 2001)). To make composite measures of the develops, the summated mean scales were ascertained in this exploration (Hair *et al.*, 1998). Foundation legitimacy was surveyed by relationship investigation in this examination with the summated mean sizes of the builds. The network from the relationship trial of the factors demonstrates critical between connections among the whole build.

Confirmatory Factor Analysis (CFA)

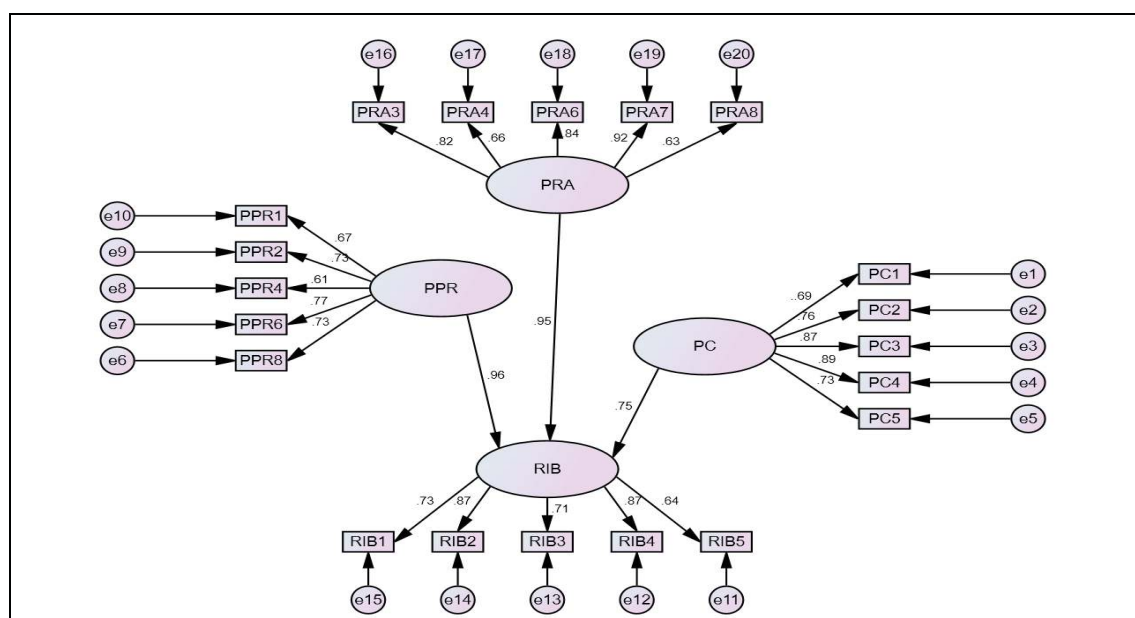
To affirm the factor, this research likewise led corroborative factor analysis. All around, the fit indices were generally improved from the default to refreshed exhibit after certain adjustment on the components (For Instance: Perception on relative advantage and perception on perceived risk) by looking at the change records result. Results from the CFA using AMOS programs were laid out in Table-7. The fit records indicated strong match of the estimation models to the data.

Table 7: Confirmatory factor analysis using AMOS

Theoretical construct	Model	GFI	AGFI	RMSEA	CFI	NFI
Perception on relative advantage	Default (unstandardized)	0.901	0.952	0.774	0.911	0.982
	revised (standardized)	0.040	0.932	0.564	0.991	0.951
Perceptions on perceived risk	Default (unstandardized)	0.972	0.966	0.876	0.903	0.961
	revised (standardized)	0.059	0.944	0.649	0.981	0.909
Perception on compatibility	Default (unstandardized)	0.932	0.983	0.731	0.996	0.921
	revised (standardized)	0.914	0.933	0.917	0.943	0.905

GFI: Goodness of Fit Index, AGFI: Adjusted goodness-of-fit index, RMSEA: Root mean square error of approximation, CFI: Comparative fit index, NFI: Normed fit index

Figure 2: Hypothesized Model of Relationships Among key Variables



PRA: Perception on relative advantage, PPR: Perception on perceived risk, PC: Perception on compatibility, RIB: The reality of Islamic Banking.

The full model was tried in light of the estimation display already approved from CFA in the investigation (Fig. 2). The fit records of the full model were $\chi^2/df = 2.307$ ($\chi^2 = 3864.232$, $df = 1321$); GFI = .908; AGFI = .973; RMSEA = .048; CFI = .971; NFI = .941. In spite of the fact that a relative χ^2 measurements ($\chi^2/df = 2.307$) showed a solid match, different files were at the lower end of worthy extents to demonstrate a decent model fit.

Hypothesis Testing

To survey the mediating effects on the truth of Islamic banking under the customers' point of view this research has analyzed the prescient legitimacy of the estimated demonstrate utilizing disintegration of impacts through Mplus. As anticipated it was watched that there was a solid connection between relative advantage towards the reality of Islamic banking which supported H1 (Table-8).

Table 8: The Estimates of the Mentioned Variable

Path Direction	Estimate of regression weight	Standard error of regression weight	Critical ratio for regression weight	Level of significance for regression weight
The reality of Islamic banking-relative advantage	0.873	0.098	7.123	0.000
The reality of Islamic banking-perceived risks	0.823	0.073	7.435	0.000
The reality of Islamic banking-compatibility	0.802	0.087	9.786	0.000

Then again, the statistical outcome likewise mirrored that there existed a critical connection between perceived risks towards the reality of Islamic banking which is supporting H2. The outcomes additionally demonstrated that there is a connection between compatibility towards the reality of Islamic baking supporting nearly H3 (Table-8).

Conclusion and Managerial Implications

The motivation of the study is to provide a new insight view of factors that are necessary for the fulfillment of the reality of Islamic banking under the Bangladeshi customer's aspect. The findings from the descriptive statistics of the research are the majority of the customers of Islamic banks are Muslim and businessman. The *Mudaraba* is the very popular product of the Islamic banks in Bangladesh. The research also finds out that 80.5 percent of the participants have agreed that they are satisfied with the Islamic banking. The study used mediating role for the first time (perception on relative advantage, perception on perceived risk, perception on compatibility) with the reality of Islamic banking. Then this research demonstrates the Structural Equation Modeling (SEM) approach as a very powerful tool to clarify the causal relationship between these latent and observed factors. Based on the data analysis, this research confirms that all three hypotheses have been accepted. More precisely, the study suggested that perception on relative advantage, perception on perceived risk, and perception on compatibility have a strong relationship with the reality of Islamic banking.

The study will be important with the viewpoint that this research is the first time effort to mediating the reality of Islamic banking from the customer's perspective. The academic viewpoint of the research is this will helps to understand the customer perception toward Islamic banking. Most of the Islamic banks are unaware of their conditions from the customer's perspective. If banks know the reality of their banking, they will, in future, consider this as a competitive advantage to dominate the banking market. The result of the study is very important for the top management authority of Islamic banks. It is evident that perception on relative advantage, perception on perceived risk, and perception on compatibility directly influenced the reality of Islamic banking

thus the management authority can easily transform their constraints into the competitive advantage. The study also provides some guidelines to the management authority.

The *Shariah* compliance of Islamic banks should be maintained, the markup method should be avoided and PLS should be used in transactions, the loan facilities should be easy for the SME sector, and rate of return should be increased. These are the components of perception on the relative advantage, perception on perceived risk, perception on compatibility and so they have a significant effect on the reality of Islamic banking and test of hypothesis accept it. However, the findings will be helpful for the Islamic banking practitioner, new entrants in the Islamic banking industry.

However, this study has several limitations. The most significant is that the sample size of the research is limited, its result contributes to the body of the knowledge but cannot be generalized. Second, the study took place in specific geographic locations (Sylhet city, a northeastern city Bangladesh). As a result, the outcomes of the study cannot be generalized to other countries. Third, the data have been collected from the full-fledged Islamic banks and all the Islamic banking window has been overlooked during this research. In this research, future should be obtained larger sample size from multiple cities or region. The future research can also consider the Islamic banking window in this research. It is recommended that in future research on the comparison of the Islamic bank and conventional bank from the customer's perspective can also be conducted.

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An Empirical Study to Assess If Islamic Banks' Assets Generate Less Revenue than Conventional Counterparts'

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Introduction

While assets generate income and liabilities incur expenditure, the balance between income and expenditure result in profit or loss for the company at the end of a reporting period. This fundamental formula holds true in banking business as well. Generating more income engaging equal or less resources compared to rivals is one of the major challenges in any business venture.

Literature Review

Like any other business enterprise, optimization of resources is one of the key objectives of Islamic banks as well. Working in a conventional based economic system these banks have to encounter a number of fundamental issues from different operational and strategic perspectives.

Spong, Richard and DeYoung (1995) stated that the imperative of banks to operate efficiently is being reinforced by the rising competition, emerging technology, and consolidation of banking. This increasing competition in an ever-changing business environment is drawing more attention on efficient and effective utilization of resources. Though these topics have always been important in banking, a number of recent events are helping to bring even greater emphasis to banking efficiency. KPMG (2012) suggested that as the world emerges from the greatest crisis in the history of finance capitalism, banks must adapt to radical new regulations, technologies, customer expectations and economic environments. Moreover, recent research on banking efficiency shows that there is much room for making better use of bank resources. Echoing the same Morgan Stanley Research and Oliver Wyman (2015) claimed that banks appear to be moving toward reallocating and optimizing their resources, after a prolonged period of stasis.

Mobarek and Kalonov (2013) investigated the performance of Islamic banks versus conventional banks in 18 OIC (Organization of Islamic Conference) countries including Bangladesh. The author employs two dominant frontier approaches of efficiency measurement of banks like Data Envelopment Analysis (DEA) and Stochastic Frontier Analysis (SFA). In the study, the Z-score methodology was used to explore the relationship between efficiency and financial stability of banks. The study found conventional banks are more efficient than their Islamic counterparts. It was also found that Islamic banks are financially more stable than conventional banks. The Financial Stability Report 2015 compared the revenue earning efficiency of Islamic Banks and Conventional Banks in Bangladesh, stating that:

'The profit income to total assets ratio of Islamic banks reached 7.7 percent, which is higher than that of the conventional banking sector (interest income to total assets ratio of 6.2%), the non-profit income to total assets ratio was only 1.0 percent as compared with the industry average of 2.7 percent, representing a lower income from off balance sheet (OBS) transactions and service and fee-based incomes.' (Bangladesh Bank 2016: p.45)

Based on the practical implications of the findings above this paper aims to dive deep into finding out exactly in which subcomponents of income sources Islamic banks are lagging behind the conventional counterparts. The findings of this paper may help to explore additional or alternative investment opportunities.

Goal and Objectives

The primary goal of the study is to find out if there is any revenue generating gap between Islamic banks and conventional comparison banks. In doing this gap analysis, the study will compare different revenue earning sources of groups of banks through utilization of their resources and explore if Islamic banks have any further scope to enhance income from Investment Income¹ or Non-Investment Income².

Data and Methodology

The study is mainly based on secondary data collected from the annual audited financial statements of the banks. For non-financial data we have explored the websites of respective banks, Bangladesh Bank and BFID etc. This study is mostly descriptive and partly diagnostic in nature done through analysis on MS Excel 2007, and SPSS 24. To confirm those findings, BCG Matrix has been done.

Scope of the Study

The study will mainly focus on how efficiently a group of six Islamic banks generate revenue deploying their assets in comparison with two groups of twelve conventional private commercial banks of Bangladesh. This paper will only deal with the efficiency from the asset-revenue aspect not with the liability-expenditure of the banks.

Selection of Comparison Banks

Out of eight Islamic Banks working in Bangladesh, six banks have been selected for the study. ICB Islamic Bank Limited and Union Bank Limited have excluded as the former belongs to problem category and the latter is in operation for less than five years. To compare with this group of six Islamic Banks, two groups of Conventional Banks have been chosen. One group is based on corresponding time or date of operation started and the other group is based on corresponding total asset size as on December 31, 2015 (Table-1). For example, Islami Bank Bangladesh Limited started operation on 30 March, 1983 and its nearest Time Peer bank is The City Bank Limited which started operation on 27 March, 1983. As on 31 December 2015, the total asset size of IBBL is Tk.72,577 crore and its nearest Asset Size bank is United Commercial Bank Limited having asset of Tk.29,374 crore. The detailed list is given in Appendix-1 and Appendix-2.

Table 1: List of Islamic and Comparison Banks

Islamic Banks				Comparison Banks			
SN	Bank	Operation Started	Assets in 2015	Time Peer Banks		Asset Peer Banks	
		Date	Crore Taka	Bank	Operation Started	Bank	Assets in 2015
					Date		Crore Taka
1	IBBL	30 Mar, 1983	72,577	The City Bank Ltd.	27 Mar, 1983	UCBL	29,374
2	EXIM Bank Ltd.	3 Aug, 1999	26,515	Trust Bank Ltd.	9 Aug, 1999	Southeast Bank Ltd.	26,072
3	FSIBL	25 Oct, 1999	25,660	Mutual Trust Bank Ltd.	24 Oct, 1999	Prime Bank Ltd.	25,347
4	AIBL	27 Sep, 1995	22,911	Dhaka Bank Ltd.	5 Jul, 1995	BRAC Bank Ltd.	23,182
5	SIBL	22 Nov, 1995	18,001	DBBL	3 Jun, 1996	IFIC Bank Ltd.	18,074
6	SJIBL	10 May, 2001	14,126	Jamuna Bank Ltd.	3 Jun, 2001	NCC Bank Ltd.	14,761

¹Alternative term of conventional 'Interest Income'

²Alternative term of conventional 'Non-Interest Income'

Limitations

One of the basic limitations of this paper is only 5 years of time series data have been analyzed while 10 years of data could be more acceptable. Not using sophisticated professional research tools and techniques is another down side of this study so far.

Asset and Income Components of Bank

Banks in our country prepare the financial statements in line with the Bangladesh Accounting Standards (BSA) and guidelines from the Central Bank to maintain the conformity in reporting.

Figure 1: Asset Components of Banks

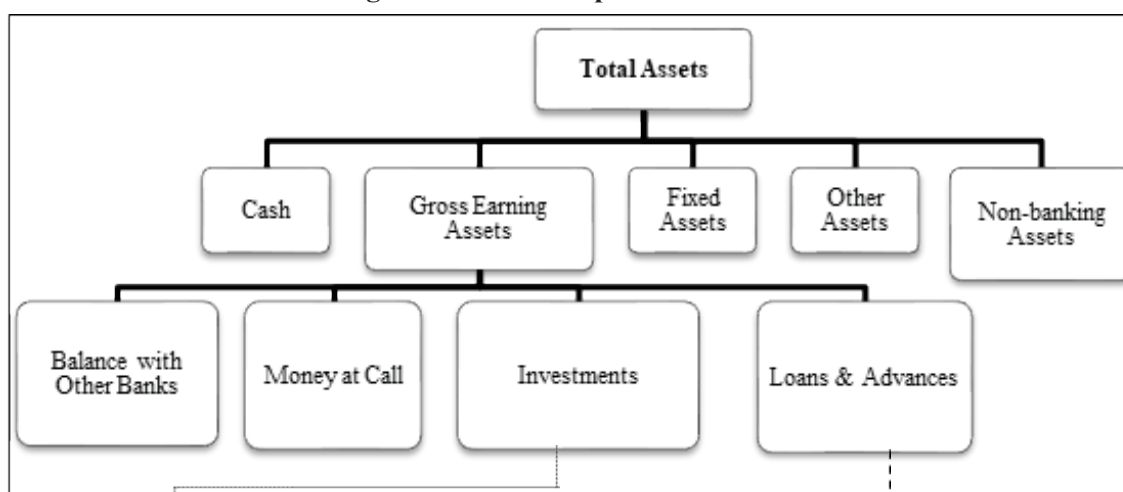
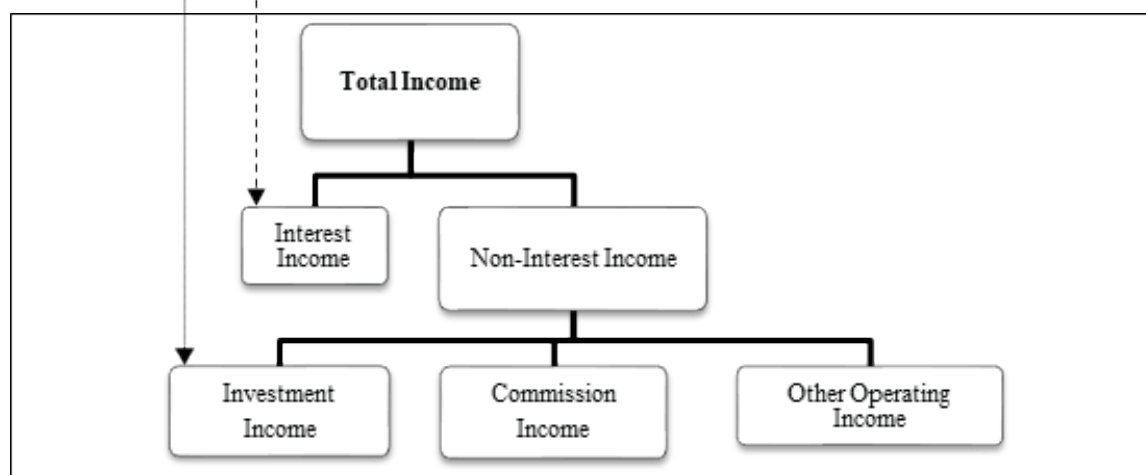


Figure 2: Income Components of Banks



As the study is about revenue generation, only the asset and income components are shown in the above figures. Assets generate revenue whether directly and indirectly. Banking assets directly contributing to the earning mainstream revenue have been categorized as Gross Earning Asset in Figure-1. Investments include both government securities and capital market exposure. Loans and Advances cover the bills purchased and discounted. Being insignificant in amount and rarely found in income statement of a bank, non-operating income component has been excluded from this study.

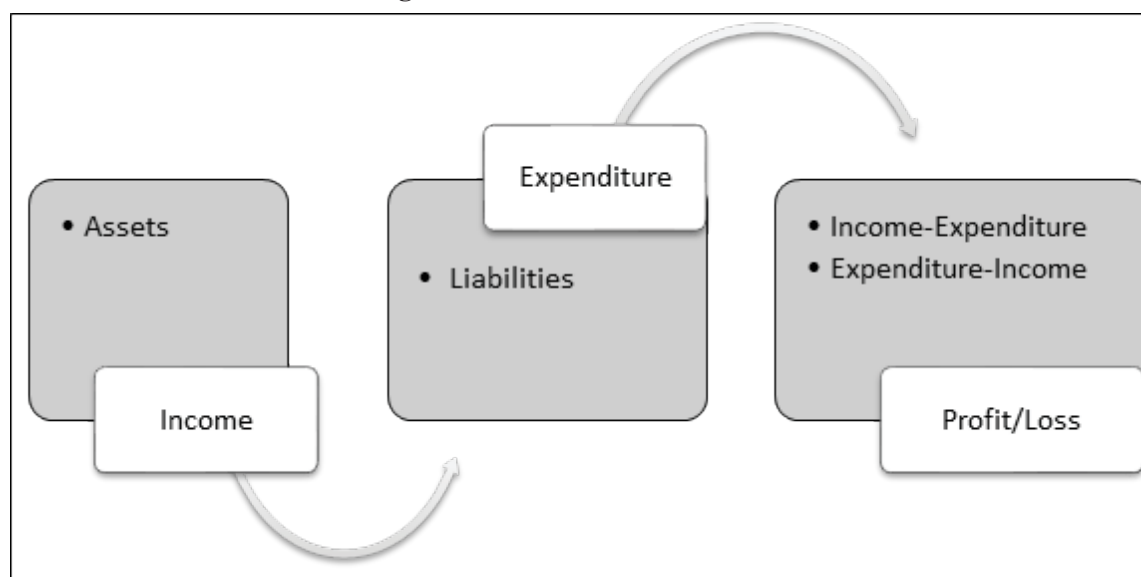
Table 2: Equivalent Terms of Income Components

SN	Conventional	Islamic
1	Total Income	Total Income
2	Interest Income	Investment Income ³
3	Investment Income	Income from Investments in Shares & Securities
4	Income from Commission, Exchange, and Brokerage	Income from Commission, Exchange, and Brokerage
5	Other Operating Income	Other Operating Income

Income Advantage versus Expenditure Advantage

From the Business Profit Formula shown in Figure-3, if a business enterprise has any competitive advantage in earning, that does not guarantee its strength in profitability unless the expenditure impacts negatively.

Figure 3: Business Profit Formula



As this study doesn't deal with the expenditure advantage, lower earning efficiency of assets doesn't necessarily confirm the lower profitability.

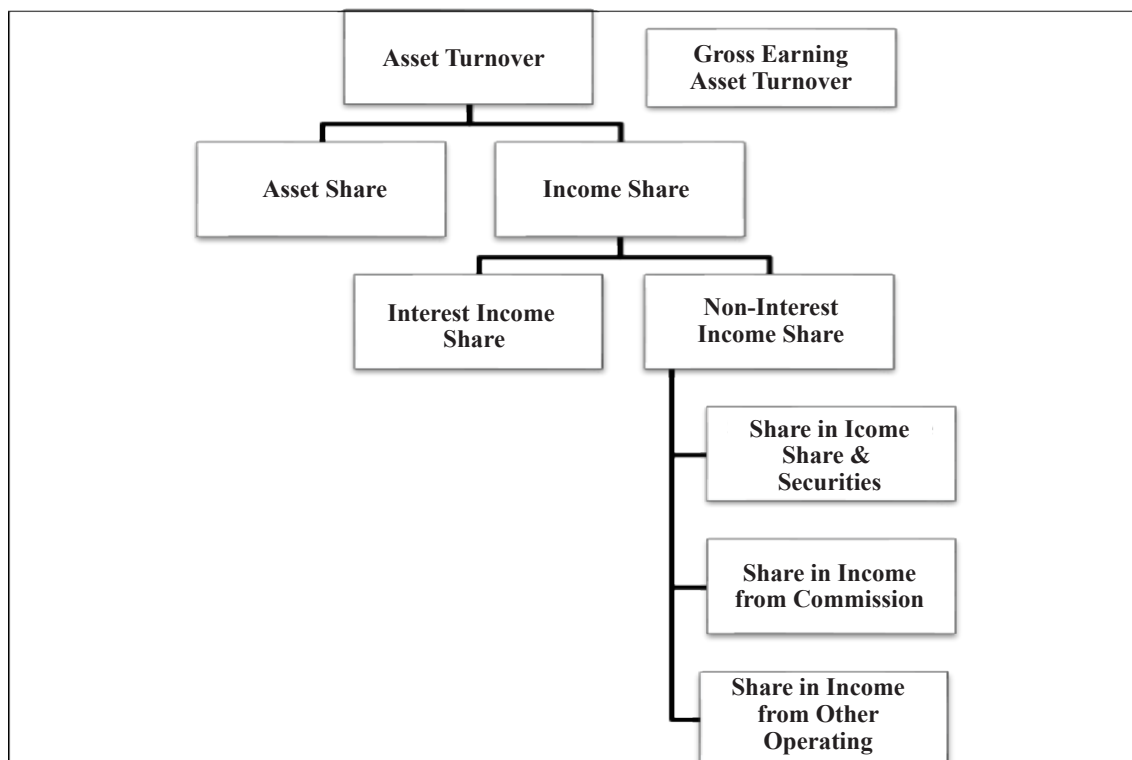
Framework of the Analysis

The Asset Turnover widely used as one of fundamental ratios of earning efficiency in the business analytics. Total Gross Income includes Gross Interest Income and Non-interest Income. To see the effects of fixed assets, other assets, and non-banking assets, the Gross Earning Asset Turnover ratio has been calculated. The components of Gross Earning Assets are shown in (Figure-1). All market shares in this paper have been calculated out of entire banking industry though the banks under the study belong to the domestic Private Commercial Banks. In addition to market share calculations, Efficiency in Interest Income and Efficiency in Income from Shares & Securities have also been calculated to see the Sectoral efficiency.

³To avoid the confusion 'Profit Income' has been used in this paper as conventional bank uses the term 'Investment Income' for denoting Income Shares & Securities.

Analyses and Findings

Like a typical business setting, banks allocate resources into different portfolio to generate revenue. The asset turnover ratio measures the ability of a bank to use its assets to efficiently generate income. The higher the ratio indicates that the bank is utilizing all its assets ably to generate revenue.



Asset Turnover

Figure 4: Asset Turnover⁴

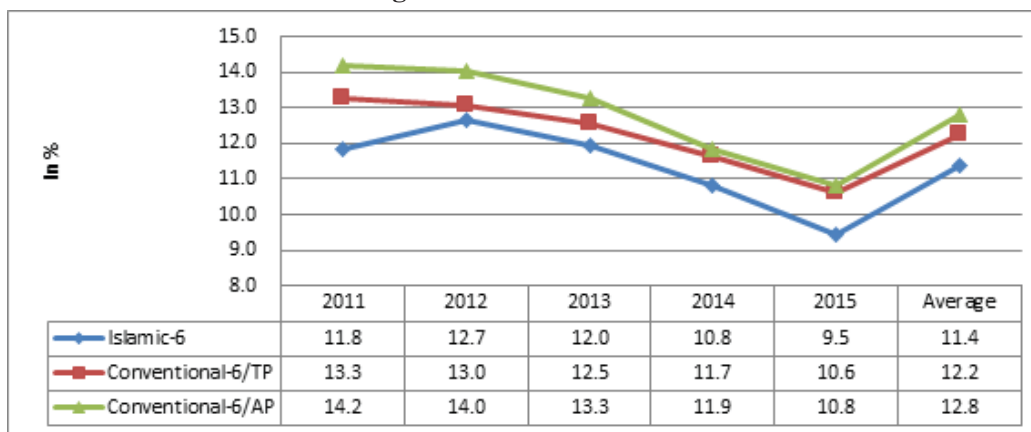


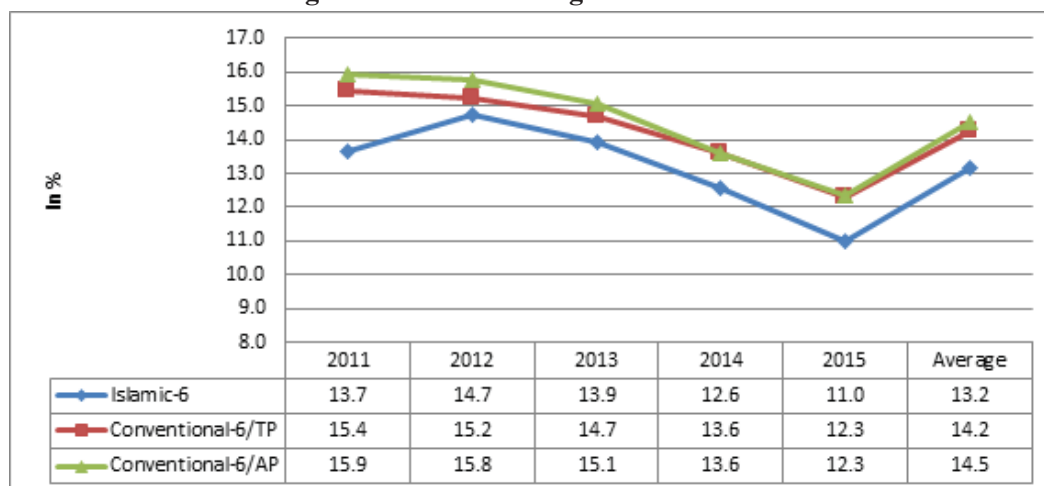
Figure-4 shows that throughout the period under study Islamic Banks' Asset Turnover is lower than that of Conventional Banks. All banks have been experiencing downward Asset Turnover except Islamic Banks going up in 2012. However, on an average Islamic Banks have 0.80 per cent less Asset Turnover than Time Peer banks and 1.4 per cent less than Asset Peer banks.

⁴Total Gross Income divided by Average Total Assets multiplied by 100

To see the effects of fixed assets, other assets, and non-banking assets, the Gross Earning Asset Turnover ratio has been calculated shown in Figure-5.

Gross Earning Asset Turnover

Figure 5: Gross Earning Asset Turnover⁵



Like the Asset Turnover ratio shown in Figure-4, the Gross Earning Asset Turnover ratio is lower in case of Islamic Banks compared to two groups of comparison banks. Both the above figures confirm that Islamic Banks are lagging behind in generating revenue from their allocated resources.

Those turnover findings can be further explained by comparing the Income Market Share with Asset Market Share within the groups in the following figures.

Market Share and Efficiency Comparison

Figure 6: Market Share in Total Assets

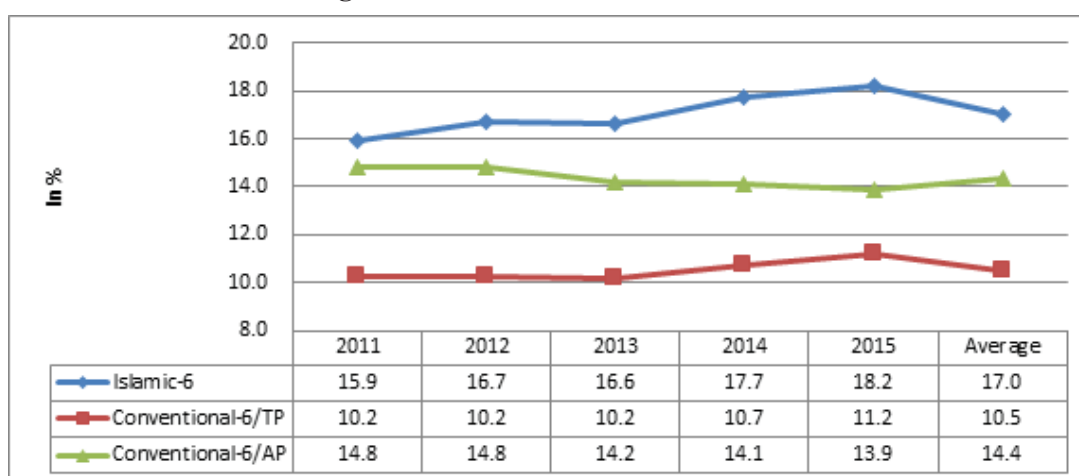
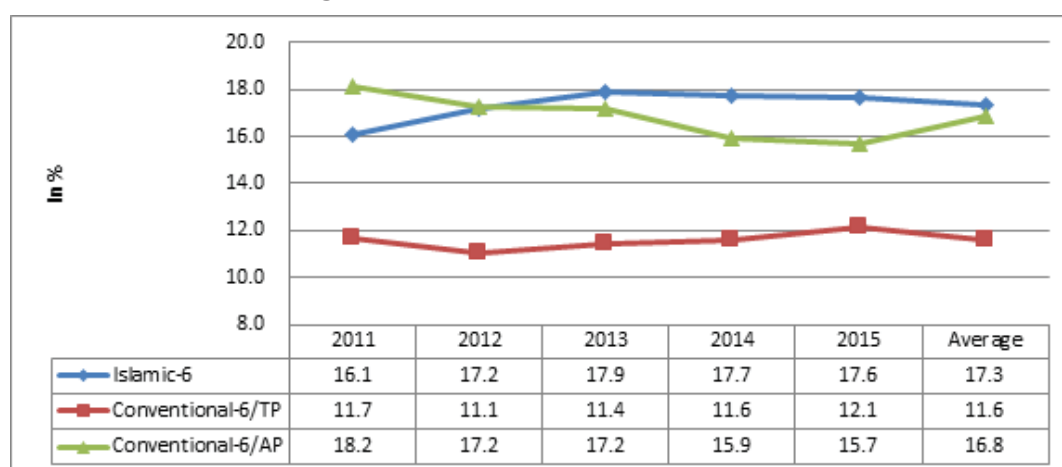


Figure-6 shows Islamic Banks have higher and growing market share in terms of banking assets than both the Conventional Time Peer Banks and Asset Peer Banks across the years. This seemingly depicts the stronger market position for Islamic Banks so far.

⁵Total Gross Income divided by Average Gross Earning Assets multiplied by 100.

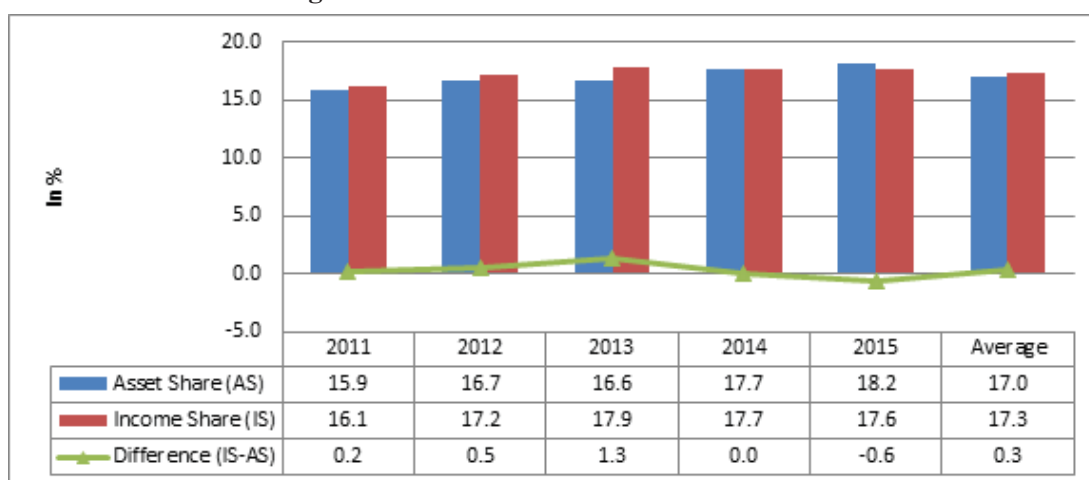
Figure 7: Market Share in Total Income



Though the asset market share of Islamic Banks is clearly higher and growing (Figure-6), the picture is quite mixed in terms of their market share in total income (Figure-7)

This phenomenon implies that Islamic Banks' higher market share in asset doesn't reflect in market share in total income.

Figure 8: IB's Income Share vs. Asset Share



The Figure-8 shows that on an average Islamic Banks have marginal advantageous positions in Income Market share against their Asset Market Share. In 2014, this rate is zero and in 2015 this rate has been even negative. To see the comparative standing in this regard, the same market share comparisons have been done for the peer groups of banks in the following figures.

Figure 9: CB's (TP) Income Share vs. Asset Share



This group of comparison banks have always experienced higher market share in income than market share in asset. Unlike Islamic Banks, during this period, this rate never happened to be negative.

Figure 10: CB's (AP) Income Share vs. Asset Share



Figure-10 shows this group of banks even have much more favorable market share in income than market share in asset.

Figure 11: Difference between Income Share and Asset Share

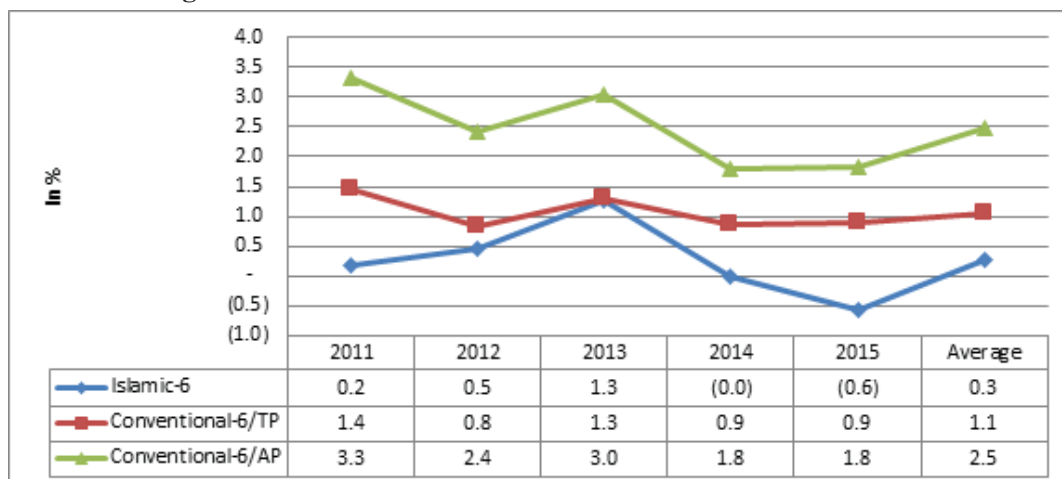


Figure-11 clearly enumerates that both the Conventional Time Peer and Asset Peer Banks have higher market share in total income than in assets compared to Islamic Banks throughout the years. In case of Islamic Banks, the Income share is only marginally higher than asset share. In 2014 and 2015 this was rather negative meaning Islamic Banks experienced lower market share in total income compared to asset market share which never happened in case of their conventional counterparts.

From the above discussion, it can be concluded that Islamic Banks' asset generate less revenue than that of conventional counterparts. To see the specific areas of revenue where these banks have further income opportunities compared to conventional comparison banks, the following market share comparisons have been done.

Interest Income

Figure 12: Market Share in Interest Income

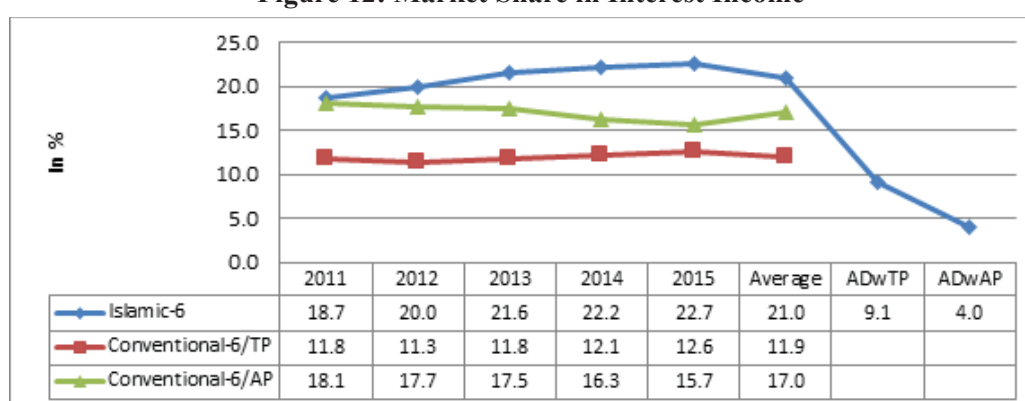
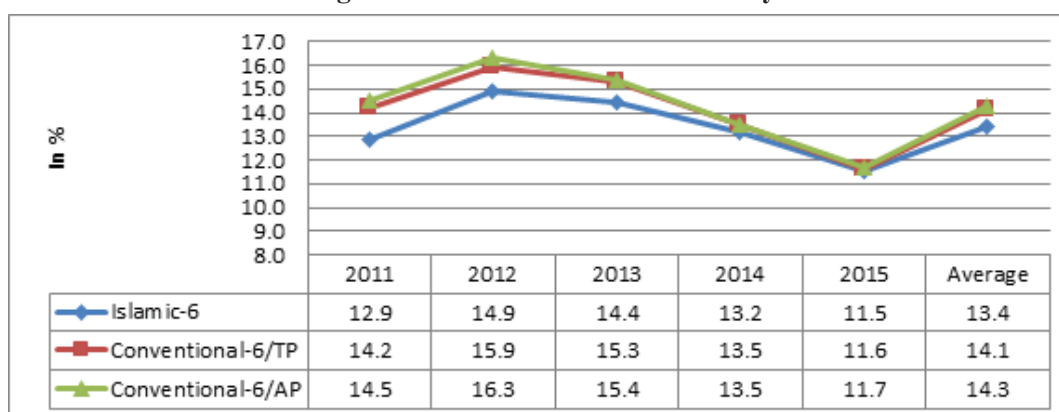


Figure 12 shows that Islamic Banks have higher market share in Interest Income compared to both the peer groups. They hold 9.1 per cent more market share in Interest Income than the Conventional Time Peer banks and 4 per cent more compared to the Conventional Asset Peer banks. This higher market share of Islamic Banks in Interest Income is a symbol of their comparative advantage.

Figure 13: Interest Income Efficiency⁶



Though Islamic Banks have higher market share in Interest Income (Figure-12) compared to the conventional counterparts, their Profit Income Efficiency is less than those counterparts (Figure-13).

⁶Total Interest Income divided by Average Loans & Advances multiplied by 100

Non-Interest Income

Figure 14: Market Share in Non-Interest Income

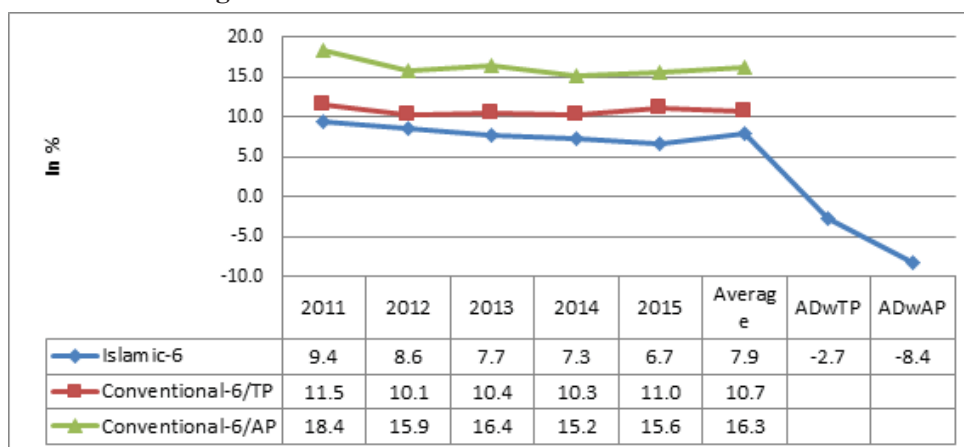


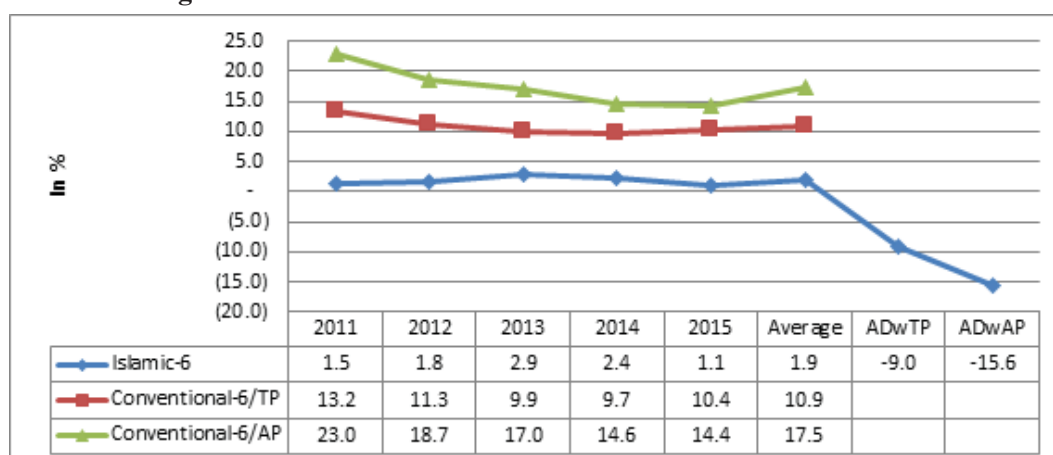
Figure-14 depicts that Islamic Banks have much lower market share in Non-Interest Income compared to both the peer groups. They have 2.7 percent less share in comparison with Conventional Time Peer banks and 8.4 per cent less share than Asset Peer banks.

So, the above tables and figures confirm though Islamic Banks have some market share advantage in Profit Income segment, they are quite disadvantageous condition in terms of Non-Interest Income segment. This much lower market share in Non-Interest Income has caused the lower Asset Turnover shown in Figure-4.

To further analyze the scenario, we need to dig deep into the components of Non-Interest Income like Income from Shares & Securities, Income from Commission, and Other Operating Income.

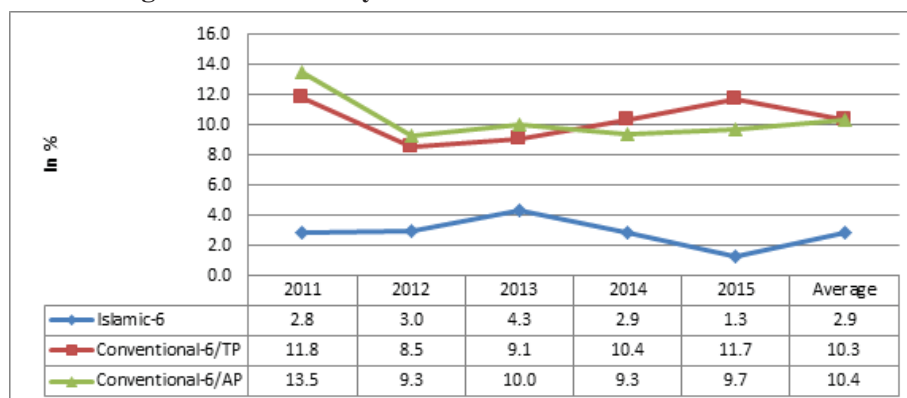
Income from Shares & Securities

Figure 15: Market Share in Income from Shares & Securities



Islami Banks' market share in Income from Shares and Securities is quite negligible compared to that of conventional banks as the Figure-15 shows this rate has always been single digit. The Conventional Asset Peer Banks have always held highest market share in this business segment. The Time Peer Banks have also enjoyed quite handful of market share which is much higher than that of Islamic Banks.

Figure 16: Efficiency in Income from Shares & Securities⁶



In terms of Efficiency in Income from Shares & Securities shown in Figure-16, Islamic Banks are in disadvantageous position in comparison with their peer banks.

Income from Commission, Exchange, and Brokerage

Figure 17: Market Share from Commission, Exchange, and Brokerage Income

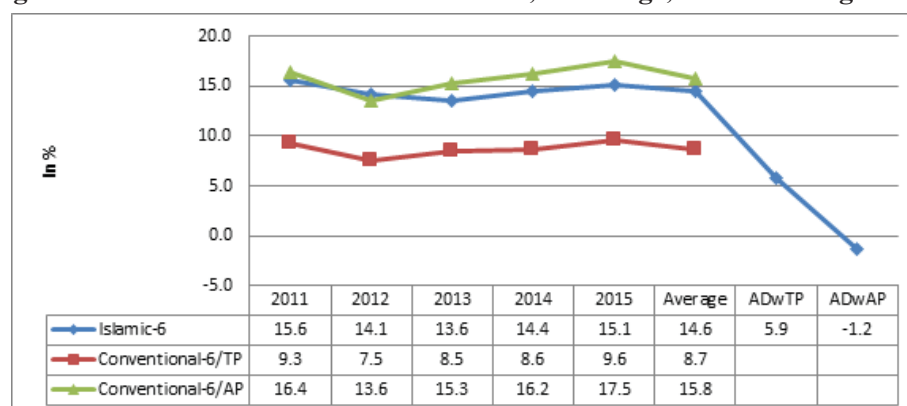
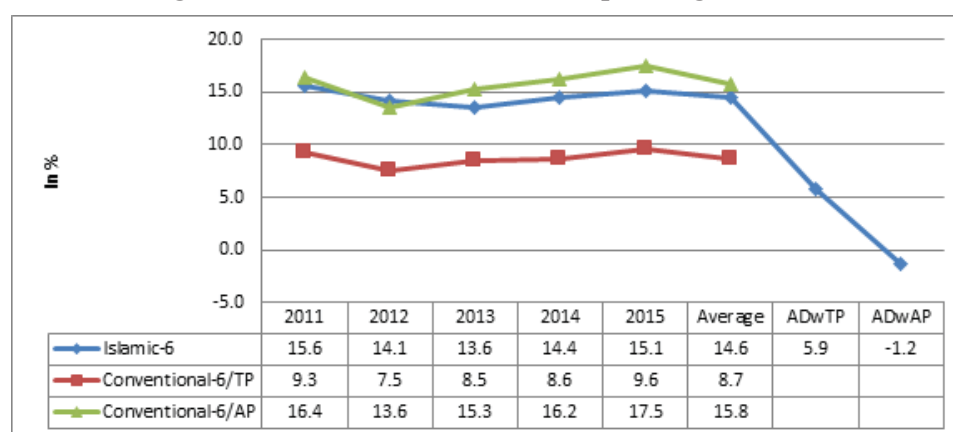


Figure-17 shows that Islamic Banks have higher market share in Income from Commission, Exchange, and Brokerage compared to Time Peer Banks but lower market share compared to Asset Peer Banks.⁸

Other Operating Income

Figure 18: Market Share in Other Operating Income



⁷Total Income from Shares & Securities divided by Average Total Investment in Shares & Securities multiplied by 100.

Figure-18 shows that compared to both the peer banks, Islamic Banks have no market share advantage in Other Operating Income segment. The Average Difference with Time Peer is 4.9 percent and with Asset Peer is 2.3 percent.

Summary Findings

Table 3: Summary Findings

Indicator	Peer Bank	In %	ADwTP	ADwAP
1. Asset Turnover	Islamic-6	11.4	-0.9	-1.5
	Conventional-6/TP	12.2		
	Conventional-6/AP	12.8		
1.1 Asset Share	Islamic-6	17.0	6.5	2.7
	Conventional-6/TP	10.5		
	Conventional-6/AP	14.4		
1.2 Income Share	Islamic-6	17.3	5.7	0.5
	Conventional-6/TP	11.6		
	Conventional-6/AP	16.8		
1.2.1 Interest Income Share	Islamic-6	21.0	9.1	4.0
	Conventional-6/TP	11.9		
	Conventional-6/AP	17.0		
1.2.2 Non-Interest Income Share	Islamic-6	7.9	-2.7	-8.4
	Conventional-6/TP	10.7		
	Conventional-6/AP	16.3		
1.2.2.1 Share in Income from Shares & Securities	Islamic-6	1.9	-9.0	-15.6
	Conventional-6/TP	10.9		
	Conventional-6/AP	17.5		
1.2.2.2 Share in Income from Commission, Exchange, and Brokerage	Islamic-6	14.6	5.9	-1.2
	Conventional-6/TP	8.7		
	Conventional-6/AP	15.8		
1.2.2.3 Share in Other Operating Income	Islamic-6	13.1	-4.9	-2.3
	Conventional-6/TP	18.0		
	Conventional-6/AP	15.4		

Compared to both the Peer Banks, Islamic Banks' Asset Turnover is lower implying lower revenue generation from the resources they hold. This lower Asset Turnover has been reflected in higher market share advantage in asset compared to lower market share advantage in income. The lower market share in income has been due to comparative disadvantage in market share from Non-Investment Income though Islamic Banks have some comparative advantage in market share from Interest/Profit Income. The comparative disadvantageous position in Non-Interest/ Profit income of Islamic Banks has been mainly contributed by the comparative disadvantage in market share in Income from Shares & Securities. The situation has been aggravated by the lower market share of Islamic Banks in Income from Other Operating though in terms of Income from Commission, Exchange, and Brokerage, Islamic Banks have comparative advantage over Time Peer Banks.

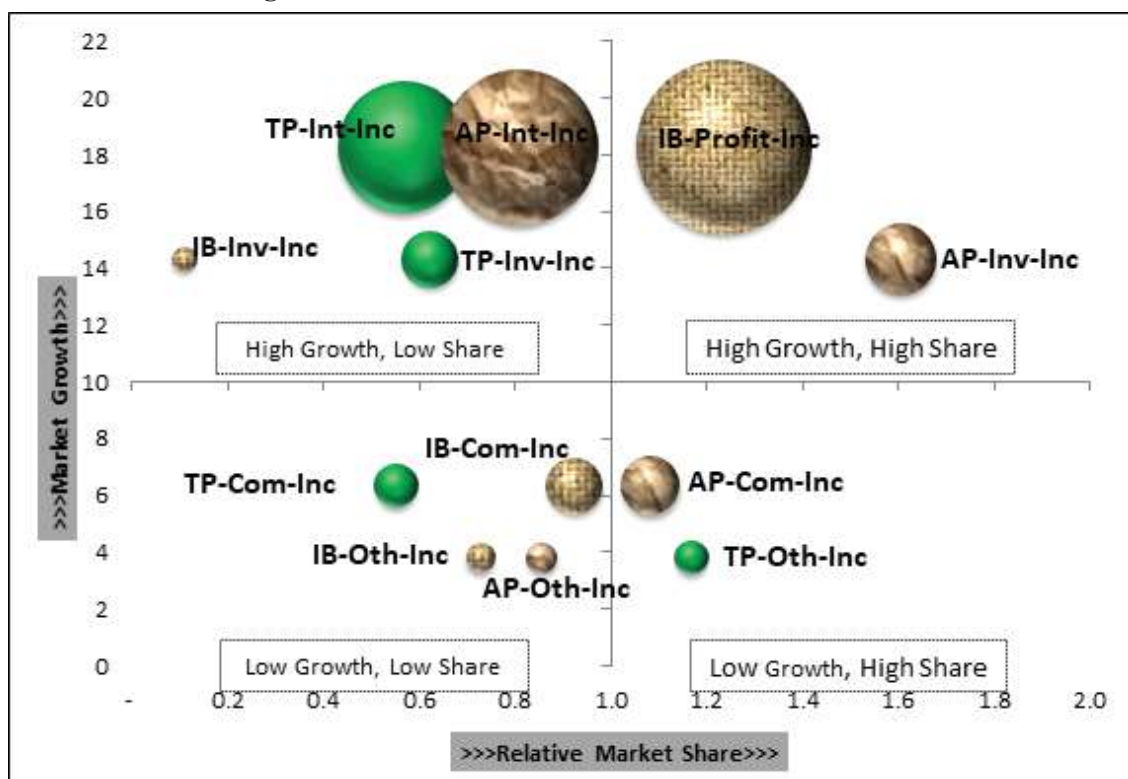
⁸Five-Year Average

Strategic Implications: The BCG Matrix

The BCG Matrix (also known as Growth–Share Matrix, the Product Portfolio Matrix, Boston Box, Boston Matrix, and Portfolio Diagram) is a chart developed by Bruce D. Henderson for the Boston Consulting Group in 1970s to help corporations analyze their business units or product lines. Though the matrix has some limitations, it helps the company allocate resources and is widely used as an analytical tool in strategic management. From the perspectives of Islamic Banks, to find out the areas deserving more attention for enhancing the total income the BCG Matrix has been developed in Figure-19

In the Matrix, Market Growth⁹ represents the vertical axis and Relative Market Share¹⁰ represents horizontal axis. As a rule of thumb, the vertical axis (Market Growth) intersects the horizontal axis (Relative Market Share) at 1 percent and the horizontal axis (Relative Market Share) intersects the vertical axis (Market Growth) at 10 percent. These intersections have created four quadrants; (a) Upper Right or High Growth and High Share, (b) Upper Left or High Growth but Low Share, (c) Lower Right or Low Growth but High Share, and (d) Lower Left or Low Growth and Low Share. The size of the circle indicates the volume of income from a particular sub-sector of income.

Figure 19: Banks' Income Position in the BCG Matrix



The figure above clearly shows that Islamic Banks hold higher relative market share in Profit Income which is the highest among four components in market growth. This higher relative market share gives them competitive advantage though it was not sufficient to yield better Asset Turnover. The reason lies in the underperforming Investment Income being the third in relative market share among these peer banks. Other Operating Income segment of Islamic Banks are also underperforming compared to comparison banks (Figure-19).

⁹ Five Year Average

¹⁰ Market Share divided by Biggest Competitor's Market Share multiplied by 100

Table 4: Islamic Banks' Income Market Share and Market Growth

Income Segment	Relative Market Share		Market Growth		Taka ¹¹ (In Crore)
	%	Rank ¹²	%	Rank	
Islamic Banks	%	Rank ¹²	%	Rank	
IB Profit Income	1.24	1	18.3	1	12,161.8
IB Investment Income ¹³	0.11	3	14.3	2	231.6
IB Commission Income	0.92	2	6.3	3	1,218.5
IB Other Operating Income	0.73	3	3.8	4	309.2

Table-4 shows that Islamic Banks have competitive advantage in Profit Income having the highest relative market share of 1.24 percent among these three groups of banks. This Profit Income has also had highest market growth rate of 18.3 percent.

Table-5: Conventional Banks' (TP) Income Market Share and Market Growth

Income Segment	Relative Market Share		Market Growth		Taka (In Crore)
	%	Rank	%	Rank	
TP Interest Income	0.57	3	18.3	1	6,855.3
TP Investment Income	0.62	2	14.3	2	1,266.0
TP Commission Income	0.55	3	6.3	3	728.4
TP Other Operating Income	1.17	1	3.8	4	424.6

Table-4 shows that Islamic Banks have competitive advantage in Profit Income having the highest relative market share of 1.24 per cent among these three groups of banks. This Profit Income has also had highest market growth rate of 18.3 per cent.

Table 5 depicts that Conventional Time Peer Banks have competitive advantage in Other Operating Income having the highest relative market share of 1.17 percent among these three groups of banks but these income segment has the lowest market growth among four income sub-sectors.

Table-6: Conventional Banks' (AP) Income Share and Market Growth

Income Segment	Relative Market Share		Market Growth		Taka (In Crore)
	%	Rank	%	Rank	
AP Interest Income	0.81	2	18.3	1	9,729.1
AP Investment Income	1.61	1	14.3	2	1,974.6
AP Commission Income	1.08	1	6.3	3	1,324.4
AP Other Operating Income	0.86	2	3.8	4	364.2

Conventional Asset Peer Banks have competitive advantage in two income segments like Investment Income and Income from Commission which have given this group of banks edge over other banks. Due to this competitive advantage this group has much higher Asset Turnover ratio compared to Islamic Banks.

¹¹ Five Year Average

¹² Among Three Groups of Banks like Islamic, Conventional TP, and Conventional AP

¹³ Income from Shares & Securities

Conclusion

The study concludes that Islamic Banks' Assets Generate Less Revenue than their Conventional Counterparts' in Bangladesh as these banks have higher market share in assets but lower market share in income generation. The study also found that Islamic Banks have higher market share in Profit Income as they have higher limit in Investment Deposit Ratio compared to Credit Deposit Ratio of conventional banks. However, this higher market share in Profit Income was not sufficient enough to cover up the lower market share in non-investment income segments. It is found that the lower asset turnover of Islamic Banks is mainly due to non-investment income which has been primarily caused by disproportionately lower market share in Income from Shares & Securities and Income from Other Operating segments. The paper found no significant difference in Commission Income segment between Islamic and conventional banks.

Recommendations

With a view to enhancing the earning efficiency, Islamic Banks need to deploy more assets for generating more Income from Shares & Securities and Other Operating Income sources. A vibrant Islamic Money Market with more and more Islamic financial instruments is required to pave the level playing way for Islamic Banks and Financial Institutions. At the same time, Islamic Banks need to avail the opportunities of investing in share market especially in shariah index scripts. Moreover, Islamic Banks need to diversify their alternative banking products, and consumer banking like mobile banking, internet banking, agent banking, and card business. Yes, of course, to avail the missing opportunities, there should have concerted efforts from all respective stakeholders like the central bank, customers, and bankers themselves.

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Appendix 1: List of PCBs Based on Operation Starting Time

SN	Bank	Operation Started	Peer
1	Pubali Bank Ltd	1959	
2	Uttara Bank Ltd	1965	
3	IFIC Bank Ltd	1976	
4	AB Bank Ltd	April 12, 1982	
5	National Bank Ltd	March 23, 1983	
6	<i>The City Bank Ltd</i>	<i>March 27, 1983</i>	<i>Conventional/TP</i>
7	<i>Islami Bank Bangladesh Ltd</i>	<i>March 30, 1983</i>	<i>Islamic</i>
8	United Commercial Bank Ltd	June 29, 1983	
9	ICB Islamic Bank Ltd	May 20, 1987	
10	Eastern Bank Ltd	August 16, 1992	
11	National Credit & Commerce Bank Ltd	May 17, 1993	
12	Southeast Bank Ltd	March 12, 1995	
13	Prime Bank Ltd	April 17, 1995	
14	<i>Dhaka Bank Ltd</i>	<i>July 5, 1995</i>	<i>Conventional/TP</i>
15	<i>Al-Arafah Islami Bank Ltd</i>	<i>September 27, 1995</i>	<i>Islamic</i>
16	<i>Social Islami Bank Ltd</i>	<i>November 22, 1995</i>	<i>Islamic</i>
17	<i>Dutch-Bangla Bank Ltd</i>	<i>June 3, 1996</i>	<i>Conventional/TP</i>
18	Bangladesh Commerce Bank Ltd	September 16, 1997	
19	Mercantile Bank Ltd	June 2, 1999	
20	Standard Bank Ltd	June 3, 1999	
21	One Bank Ltd	July 14, 1999	
22	<i>EXIM Bank Ltd</i>	<i>August 3, 1999</i>	<i>Islamic</i>
23	<i>Trust Bank Limited</i>	<i>August 9, 1999</i>	<i>onventional/TP</i>
24	<i>Mutual Trust Bank Ltd¹⁴</i>	<i>October 24, 1999</i>	<i>onventional/TP</i>
25	<i>First Security Islami Bank Ltd</i>	<i>October 25, 1999</i>	<i>Islamic</i>
26	Premier Bank Ltd	October 26, 1999	
27	Bank Asia Ltd	November 27, 1999	
28	<i>Shahjalal Islami Bank Ltd</i>	<i>May 10, 2001</i>	<i>Islamic</i>
29	<i>Jamuna Bank Ltd</i>	<i>June 3, 2001</i>	<i>Conventional/TP</i>
30	BRAC Bank Ltd	July 4, 2001	
31	South Bangla Agri & Commerce Bank Ltd	March 25, 2013	
32	Midland Bank Ltd	April 9, 2013	
33	NRB Commercial Bank Ltd	April 18, 2013	
34	Meghna Bank Ltd	May 9, 2013	
35	Union Bank Ltd	May 20, 2013	
36	NRB Bank Ltd	May 28, 2013	
37	The Farmers Bank Ltd	June 3, 2013	
38	Modhumoti Bank Ltd	September 19, 2013	
39	NRB Global Bank Ltd	October 23, 2013	

¹⁴ For First Security Bank, Mutual Trust Bank has been selected as Premier Bank has Islamic Banking operation while Mutual Trust Bank has no Islamic Banking operation at all.

Appendix 2: List of PCBs Based on Assets in 2015

SN	Bank	Crore Taka	Peer
1	Islami Bank Bangladesh Ltd	72,577	Islamic
2	<i>United Commercial Bank Ltd</i>	29,374	Conventional/AP
3	AB Bank Ltd	28,694	
4	Pubali Bank Ltd	28,544	
5	National Bank Ltd	28,272	
6	EXIM Bank Ltd	26,515	Islamic
7	<i>Southeast Bank Ltd</i>	26,072	Conventional/AP
8	First Security Islami Bank Ltd	25,660	Islamic
9	<i>Prime Bank Ltd</i>	25,347	Conventional/AP
10	Dutch-Bangla Bank Ltd	24,406	
11	<i>BRAC Bank Ltd</i>	23,182	Conventional/AP
12	Al-Arafah Islami Bank Ltd	22,911	Islamic
13	Bank Asia Ltd	22,567	
14	The City Bank Ltd	21,421	
15	Eastern Bank Ltd	19,109	
16	Mercantile Bank Ltd	18,378	
17	Trust Bank Limited	18,191	
18	<i>IFIC Bank Ltd</i>	18,074	Conventional/AP
19	Social Islami Bank Ltd	18,001	Islamic
20	Dhaka Bank Ltd	17,721	
21	One Bank Ltd	15,413	
22	Uttara Bank Ltd	15,123	
23	<i>National Credit & Commerce Bank Ltd¹⁵</i>	14,761	Conventional/AP
24	Mutual Trust Bank Ltd	14,607	
25	Jamuna Bank Ltd	14,343	
26	Shahjalal Islami Bank Ltd	14,126	Islamic
27	Standard Bank Ltd	13,237	
28	Premier Bank Ltd	13,144	
29	Union Bank Ltd	6,306	
30	The Farmers Bank Ltd	4,108	
31	South Bangla Agri& Commerce Bank Ltd	3,669	
32	NRB Commercial Bank Ltd	3,626	
33	NRB Global Bank Ltd	3,143	
34	Bangladesh Commerce Bank Ltd	3,026	
35	Midland Bank Ltd	2,389	
36	Modhumoti Bank Ltd	2,377	
37	Meghna Bank Ltd	2,276	
38	NRB Bank Ltd	2,053	
39	ICB Islamic Bank Ltd	1,275	

¹⁵ NCC Bank has been selected as comparison bank of Shahjalal Islami Bank as Jamuna Bank and Mutual Trust have already been taken in Time Peer comparison.

Appendix 3: BCG Matrix in Detail (Five Year Average)

Peer Bank & Income Segment	Market Share	Biggest Competitor's Market Share	Relative Market Share ¹⁶	Market Growth	Taka (In Crore)
IB Profit Income	21	17	1.24	18.3	12,161.8
IB Investment Income	1.9	17.5	0.11	14.3	231.6
IB Commission Income	14.6	15.8	0.92	6.3	1,218.5
IB Other Income	13.1	18	0.73	3.8	309.2
TP Interest Income	11.9	21	0.57	18.3	6,855.3
TP Investment Income	10.9	17.5	0.62	14.3	1,266.0
TP Commission Income	8.7	15.8	0.55	6.3	728.4
TP Other Income	18	15.4	1.17	3.8	424.6
AP Interest Income	17	21	0.81	18.3	9,729.1
AP Investment Income	17.5	10.9	1.61	14.3	1,974.6
AP Commission Income	15.8	14.6	1.08	6.3	1,324.4
AP Other Income	15.4	18	0.86	3.8	364.2

¹⁶Market Share Divided by Biggest Competitor's Market Share

The Causal Relationship between Financial Development and Environmental Quality in Bangladesh: An Empirical Study

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1. Introduction

In recent years, Bangladesh has witnessed a steady economic growth and has been considered as one of the high-growth countries, achieving over 7 percent growth in 2016 (World Bank, 2017). Economists suggest that a sound and efficient financial sector has an important and effective role to play in maintaining the growth. The financial sector is believed to improve productive endeavors through proper mobilization of savings and allocation of funds, which could boost the economic growth. However, amidst the attempt to achieve more growth and prosperity, the environment is often overlooked. The emission of the greenhouse gases such as the CO₂ gas has been on the rise over the years and its impact on the global warming and climate change has been a world-wide concern. Experts believe that climate change could distort the natural order and functioning of the ecosystems which would exacerbate the environmental quality and lead to further extreme climate conditions (Charfeddine, 2016). Therefore, effective policies are required to reduce the environmental degradation. In order to formulate such policies, the factors that affect the environmental quality needs to be taken into account.

Recently, a number of factors such as financial development and trade have been identified as key determinants of CO₂ emissions (Sadorsky, 2010; Zhang, 2011; Hossain and Hasanuzzaman, 2012). Nonetheless, the effects of financial development and trade on CO₂ emissions are found to be ambiguous. Economists delineate that trade and investment opportunities aid in economic growth (Sadorsky, 2012) demanding more energy and in the process releasing pollutants in the air thus degrading the environment (Ahad and Khan, 2016). However, a number of studies also portray that trade openness could also improve the environmental quality (Adams *et al.*, 2016). Some studies are found to depict that no relationship exists between trade openness and environmental quality in the long run (Naranpanawa, 2011). However, one of the most important factors to be considered in this study is the effect of financial development on CO₂ emissions.

According to Sadorsky (2010) and Zhang (2011), financial development could actually deteriorate the environment by increasing the emissions. The studies suggest that the development in stock market could help listed enterprises to lower the financing costs and improve channels which would lead to investments projects, demanding more energy and ultimately leading to more CO₂ emissions. A development in the financial sector could also attract more and more foreign direct investment which could increase the CO₂ emissions as well. The effects of financial development on the environmental quality are ambiguous, since there are also studies suggesting that financial development could improve the environmental quality by providing the opportunities to use advanced technology and environment friendly production processes (Tamazian and Rao, 2010). However, a large number of papers have not considered the financial constraints of the countries and propose policies that require environment friendly production. Unfortunately, evidence from

developing countries suggest otherwise, pointing out that enterprises from such countries may face huge financial constraints while promoting environment friendly production processes. These countries may as well have limited access to external sources of funds. (Perotti and Vesnaver, 2004; Beck and Demirguc-Kunt, 2006). Under such circumstances, the economic performance may be fundamentally affected by the financial development of a country (Yuxiang and Chen, 2011). The extent to which the financial development could influence the quality of the environment has not been answered equivocally by the previous literature. The results for different studies vary depending on the choice of country, explanatory and control variables and the methodology used. Thus, further studies are required in this field to understand the relationship to a greater extent.

Bangladesh, being a poor country with a high population, can be considered to be a potential pollution haven. Firms often take advantage of flexible and less stringent environmental standards and degrade the environment in the process. Air pollution is most severe in urban cities where most of the air pollutants originate from vehicular and industrial emissions especially in the dry season, while burning of biofuels contributes to indoor pollution (Dewan *et al.*, 2012). Dhaka metropolitan area has been found to be one of the most polluted cities in South Asia, with a cardiovascular mortality rate of 7000 per year (Gurjar *et al.*, 2010). However, there have been efforts by the government in recent years to cut back emissions through conversion of petrol/ diesel vehicles to compressed natural gas and introduction of environment friendly cleaner technology in different industries (Begum *et al.*, 2010). Water pollution is mainly caused by industrial wastes in the Dhaka Metropolitan City, where more than 40 percent of the country's industries are located. Rivers around Dhaka city and Narayanganj such as Buriganga, Balu and Turag rivers are the most polluted rivers in the country where untreated effluents from industries are released (Dewan *et al.*, 2012). A study by Bhuiyan *et al.*, in 2010 finds that anthropogenic sources heavily pollute groundwater system in the locality of largest coal mining area in northwestern Bangladesh (Bhuiyan *et al.*, 2010). In other areas, surface water is mostly contaminated by domestic wastes and agrochemicals, while arsenic poisoning is mainly responsible for groundwater contamination (Hossain, 2006). Overall environmental quality of Bangladesh has been deteriorating alarmingly with environmental pollution being a major concern, which results mainly from unplanned urbanization and climate change. Most studies have been conducted in major city areas including the capital city of Dhaka and nearby cities like Gazipur and Narayanganj, and thus national level data on pollution is not readily available.

To the best of our knowledge, only two studies have addressed the relationship between financial development and environmental quality in Bangladesh, using different variables and methodologies (Shahbaz *et al.*, 2014; Hossain and Hasanuzzaman, 2012). Therefore, further studies are required in this field to understand the relationship to a greater extent. We intend to fill this gap and contribute in the existing literature by using two indicators of financial development and incorporating trade and economic growth in a multivariate model over a period of 1980-2015.

The rest of the paper is organized as follows; the next section provides a review of the relevant literature followed by the methodology and data set. The subsequent sections discuss the results and conclusion.

2. Literature Review

Saidi and Mbarek (2017) use a panel model over a period of 1990-2013 in 19 emerging economies to find that a financial development reduces environmental degradation in the long run. They suggest that financial reforms must be made to improve the environmental quality in the emerging economies. On the other hand, Niharika *et al.*, (2017) empirically examine the relationship between sustainable and financial development in India during the period 1980-2011. The results show a weak directional causality from financial development to environmental outcomes. The authors suggest that development of the financial sector could successfully lead to poverty reduction without degrading the environment.

Shahbaz *et al.*, (2016) use a comprehensive index of financial development and quarterly frequency data for the period 1984-2014 to re-analyze the effect of financial development on environmental quality in Pakistan. The authors find that a unidirectional causality runs from bank-based financial development to CO₂ emissions, thus degrading the environmental quality. However, the scenario is different in case of Nigeria. The study by Maji *et al.*, (2016) analyze the effect of financial development on CO₂ emissions particularly from the agricultural sector in Nigeria over a period of 1971-2011. They use the Autoregressive Distributive Lag (ARDL) model to depict a negative relationship between financial development and CO₂ emissions from the agricultural sector.

Ayeche *et al.*, (2016) employ the General Linear Model (GLM) over a period of 1985-2014 for a panel data of 40 European countries to find support for the neutrality hypothesis between financial development and environmental degradation. The study by Sy *et al.*, (2016) use Ordinary Least Squares (OLS) method to find similar results in case of the selected 40 European countries. Omri *et al.*, (2015) also finds evidence for the neutrality hypothesis in case of MENA countries by using the panel data over a period of 1990-2011. However, Moghadam and Lotfalipour (2014) apply the Autoregressive Distributive Lag (ARDL) bound approach over a period of 1970-2011 to find that the financial development leads to the degradation of the environment in Iran, which is one of the MENA countries. The researchers also find that an increase in trade openness reduces the environmental degradation in Iran.

Charfeddine and Khediri (2015) utilize the unit root tests with multiple structural breaks and regime-switching cointegration techniques to investigate the link between financial development and CO₂ emissions in UAE by using the data for the period of 1975-2011. The researchers find that an inverted U-shaped relationship exists between the two concerned variables in the long run.

Alam *et al.*, (2015) employ the GMM (Generalized Method of Moments) technique over a period of 1975-2013 to study the environmental quality and financial development in Malaysia. The authors find that the energy sector being subsidized by the financial sector results in the emission of CO₂ which may hinder the sustainable development of Malaysia. On the contrary, the study by Shahbaz *et al.*, (2013a) over a period of 1971-2011 shows that financial development leads to a decrease in the CO₂ emissions in Malaysia. In another study by Shahbaz *et al.*, (2013b), similar results are found in case of Indonesia, where results show that financial development decreases the CO₂ emissions. In Turkey, however, the study by Ozturk and Acarvi (2013), which uses the cointegration approach over a period of 1960-2007, finds that financial development has no significant impact on CO₂ emissions.

Imamoglu (2013) uses both time series and panel data for a wide range of developed and developing countries over a period of 1960-2011 to find that financial sector has a negative effect on the carbon emissions in case of developed countries. However, the relationship is reversed in case of developing countries. The authors suggest that developing countries are in need to adapt energy conservation policies as financial development leads to an increase in carbon emissions through energy expansion. However, Hossain and Hasanuzzaman (2012) employ the Autoregressive Distributive Lag (ARDL) bounds testing approach over a period of 1975-2010 to find no evidence of causal relationship between carbon emissions and financial development in Bangladesh.

Al-mulali and Sab (2012a) employ the panel model taking the period 1980-2008 to understand the impact of energy consumption and CO₂ emissions on the economic and financial development in selected 19 countries. The study finds that both energy consumption and CO₂ emissions have a causal relationship between economic and financial development in the long run. It is found that high financial development due to energy consumption leads to an increase in CO₂ emissions in these countries. Another study is carried out on the Sub Saharan countries by Al-mulali and Sab (2012b) over a period of 1980-2008. The investigation finds similar conclusions that is, energy consumption positively affects the financial development in these countries but at the cost of high pollution.

Jalil and Feridun (2011) carry out a study to determine the relationship between financial development and pollution in China over a period of 1953-2006, using the Autoregressive Distributive Lag (ARDL) bounds testing approach. They conclude that an increase in the financial development leads to a decrease in the environmental pollution. Similarly, Tamazian *et al.*, (2009) also finds similar results in BRIC countries, where panel data over a period of 1994-2004 is used. However, the study by Zhang (2011) portrays that the financial development leads to an increase in the carbon emissions and thereby environmental degradation in China.

3. Methodology

We carry out the Augmented Dickey Fuller (ADF) unit root test to check for the stationarity of the variables used in the model (Dickey and Fuller, 1981). The financial and macro variables are well-known for their non-stationarity. Non-stationary data could result in spurious regression unless there exists at least one co-integrating relationship. The next step is to carry out the Johansen co-integration test to determine the existence of possible linear combinations of the variables, which could be considered stationary. The Johansen procedure is well-known to provide a unified framework for the testing of co-integration relations with respect to the Vector Autoregressive (VAR) error correction models. For this purpose, we estimate an Unrestricted Vector of Autocorrelation of the following form:

$$\Delta x_t = \alpha + \theta_1 \Delta x_{t-1} + \theta_2 \Delta x_{t-2} + \theta_3 \Delta x_{t-3} + \dots + \theta_{k-1} \Delta x_{t-k+1} + \theta_k \Delta x_{t-k} + u_t$$

Where, Δ is the difference operator; x_t is a $(n \times 1)$ vector of non-stationary variables (in levels); and u_t is $(n \times 1)$ the vector of random errors. The matrix θ_k contains the information regarding the long run relationship between variables; suppose, if the rank of $\theta_k = 0$, it means that the variables are not co-integrated. However, if the rank (usually denoted by r) is equal to 1, it denotes that there exists one co-integrating vector and finally if $1 < r < n$, it points out there exist multiple co-integrating vectors. The two tests for co-integration, namely the trace test and the maximum Eigen value test were derived by Johansen and Juselius (1990). The trace statistic test evaluates the null hypothesis that there are at most r co-integrating vectors whereas the maximum Eigen value test, evaluates the null hypothesis that there are exactly r co-integrating vectors in x_t . Once the variables are found to be co-integrated, the next step is to run the Granger causality tests. As proposed by Granger (1969), this test determines if a long run relationship exists between two variables at a time and which variable precedes the other. If x and y are our variables of interest, then according to Granger causality test, there could be four probable outcomes: (i) x Granger causes y (ii) y Granger causes x (iii) both x and y granger causes the other and (iv) neither of the variables Granger causes the other. The regressions that we estimate are:

$$x_t = \alpha_0 + \alpha_1 x_{t-1} + \dots + \alpha_l x_{t-l} + \beta_1 y_{t-1} + \dots + \beta_l y_{t-l} + u_t$$

$$y_t = \alpha_0 + \alpha_1 y_{t-1} + \dots + \alpha_l y_{t-l} + \beta_1 x_{t-1} + \dots + \beta_l x_{t-l} + v_t$$

We consider the above sets of equation for all possible pairs of (x, y) series in the group. The reported F-statistics are the Wald statistics for the joint hypothesis

$$\beta_1 = \beta_2 = \beta_3 = \dots = \beta_l = 0$$

Once the long run causalities between the variables are confirmed, we employ the Vector Error Correction Model (VECM) approach to find if there are any short run causal relationships between the variables or not. According to Engle and Granger (1987), VECM can properly model the short run as well as the long run dynamics among the co-integrated variables. The VECM equations we estimate are:

$$\Delta Y = \alpha + \sum_{i=1}^m \beta_i \Delta Y_{t-i} + \sum_{j=1}^n \gamma_j \Delta x_{t-j} + \sum_{k=1}^o \delta \Delta M^s + \sum_{l=1}^p \zeta \Delta N + \theta Z_{t-1} + \varepsilon_t$$

$$\Delta X = a + \sum_{i=1}^m b_i \Delta Y + \sum_{j=1}^n c_j \Delta X_{t-j} + \sum_{k=1}^0 d_k \Delta M^s + \sum_{l=1}^p e_l \Delta N + f Z_{t-1} + \xi_t$$

Where, z_{t-1} is the error-correction term which is the lagged residual series of the co-integrating vector. The deviation of the series from the long run equilibrium relations is measured by the error correction term. For instance, using the above equations, the null hypothesis that X does not Granger cause Y can be rejected if the set of estimated coefficients on the lagged values of X is found to be jointly significant. The hypothesis is also supported in the cases where X appears in the co-integrating relationship and the coefficient of the lagged error term is found to be significant. The short run causality is represented by the changes in an independent variable, whereas, the adjustment of Y and X towards the long run equilibrium is represented by the error correction term. The short run causalities that may exist between the variables (pairwise) are determined by the Chi-Square test statistic.

After the direction of causality is determined, we use the Dynamic Ordinary Least Square (DOLS) estimation (Stock and Watson, 1993) to find out how one variable affects the other. In order to do so, we adopt an approach used by Camacho-Gutierrez (2010). The Stock and Watson model of the following form is used in our study:

$$Y_t = \beta_0 + \beta X + \sum_{j=-q}^p d_j \Delta X_{t-j} + u_t$$

Where β is co-integrating vector that represents the effect of the change in the X variable on the Y variable; p and q represent the lag and lead length respectively. In order to make the stochastic error term independent, the lag and lead terms are included in the DOLS regression.

4. Data Set and Variables

Our study spans over a period of 1980-2015 and uses two different financial indicators to represent financial development and CO₂ emission as an indicator of environmental degradation. Based on previous literature, the two financial indicators used in the study are (i) ratio of M2 (broad money) to GDP (Gross Domestic Product) represented by FI1 and (ii) ratio of domestic credit to private sector represented by FI2 in the model. The proxy used to represent environmental quality is CO₂ emissions (in metric tons per capita). The control variables included in the model are GDP per capita (current US\$) to represent economic growth, and trade represented by the total amount of trade as a percentage of GDP. All the required data are collected from World Development Indicators (WDI) 2017, published by the World Bank. The software package the E-Views 8.1 is used to carry out the tests in our study.

5. Results

We carry out the Augmented Dickey Fuller (ADF) unit root test to find out if our time series data are stationary in nature. The results of the unit root test are shown in Tables-1a and 1b.

Table 1a : Augmented Dickey Fuller (ADF) Unit Root Test for the Selected Variables

Variables	ADF Statistics (only constant)	Probability Value	ADF Statistics (constant and trend)	Probability Value	Decision
CO2 emissions	1.509265	0.9990	-1.629289	0.7606	Non stationary considering constant and constant and trend
Financial Indicator 1	0.697124	0.9904	-1.871506	0.6471	Non stationary considering constant and constant and trend
Financial Indicator 2	0.330968	0.9767	-1.537422	0.7969	Non stationary considering constant and constant and trend
GDP per capita	16.49968	1.0000	5.087471	1.0000	Non stationary considering constant and constant and trend
Trade (as percent of GDP)	1.685881	0.9993	-3.160877	0.1140	Non stationary considering constant and constant and trend
Note: All regressions are estimated with and without trend. Selection of the lag is based on Schwartz Information Criterion (SIC). E-Views 8.1 software automatically selects the most significant lag length based on this criterion.					

Table 1b: Augmented Dickey Fuller (ADF) Unit Root Test for the Selected Variables

Variables	ADF Statistics (only constant)	Probability Value	ADF Statistics (constant and trend)	Probability Value	Decision
CO2 emissions	-4.650779	0.0007	-4.959480	0.0017	Stationary
Financial Indicator 1	-4.514596	0.0010	-4.527827	0.0051	Stationary
Financial Indicator 2	-5.616064	0.0000	-5.612254	0.0003	Stationary
GDP per capita	-0.107271	0.9407	-4.035381	0.0168	Stationary constant and trend; non-stationary considering constant
Trade (as percent of GDP)	-2.330655	0.1707	-4.773597	0.0039	Stationary constant and trend; non-stationary considering constant
Note: All regressions are estimated with and without trend. Selection of the lag is based on Schwartz Information Criterion (SIC). E-Views 8.1 software automatically selects the most significant lag length based on this criterion.					

We find our variables to be stationary at their first differenced form or integrated at first level, I(1). This allows us to proceed with the Johansen Co-integration test, using which we determine if any possible long run co-integration exist among the variables. The results of the Johansen Co-integration test are shown in Tables-2a and 2b (see Appendix).

Both the maximum Eigen value test and the Trace test (from Tables-2a and 2b) provide the evidence that at least one co-integrating relationship exist at 95 percent significance level. This prompts us to carry out the Granger Causality tests, the results of which are shown in Table-3.

Table 2a: Johansen Test for Co-integration (Maximum Eigen Value Test) Lag Intervals 1

Trend Assumption: Linear Deterministic Trend				
Null	Alternative	Statistics	95 percent Critical Value	Conclusion
r=0	r=1	49.30499	33.87687	1 Co-integrating equation at the 0.05 level
r<=1	r=2	24.51610	27.58434	
r<=2	r=3	18.84531	21.13162	
Trend Assumption: No Deterministic Trend				
Null	Alternative	Statistics	95 percent Critical Value	Conclusion
r=0	r=1	31.76058	30.43961	1 Co-integrating equation at the 0.05 level
r<=1	r=2	19.30148	24.15921	
r<=2	r=3	12.52725	17.79730	
Trend Assumptions: No Deterministic Trend (Restricted Constant)				
Null	Alternative	Statistics	95 percent Critical Value	Conclusion
r=0	r=1	49.97590	34.80587	1 Co-integrating equation at the 0.05 level
r<=1	r=2	25.51682	28.58808	
r<=2	r=3	18.84881	22.29962	
Trend Assumption: Linear Deterministic Trend (Restricted)				
Null	Alternative	Statistics	95 percent Critical Value	Conclusion
r=0	r=1	49.35535	38.33101	1 Co-integrating equation at the 0.05 level
r<=1	r=2	24.63285	32.11832	
r<=2	r=3	19.97185	25.82321	

Table 2b: Johansen Test for Co-integration (Trace Test) Lag Intervals Trend Assumption: Linear Deterministic Trend

Null	Alternative	Statistics	95 percent Critical Value	Conclusion
r=0	r=1	99.17692	69.81889	2 co-integrating equations at the 0.05 level
r<=1	r=2	49.87193	47.85613	
r<=2	r=3	25.35583	29.79707	
Trend Assumption: No Deterministic Trend				
Null	Alternative	Statistics	95 percent Critical Value	Conclusion
r=0	r=1	72.78494	60.06141	2 co-integrating equations at the 0.05 level
r<=1	r=2	41.02436	40.17493	
r<=2	r=3	21.72287	24.27596	
Trend Assumptions: No Deterministic Trend (Restricted Constant)				
Null	Alternative	Statistics	95 percent Critical Value	Conclusion
r=0	r=1	105.3613	76.97277	2 co-integrating equations at the 0.05 level
r<=1	r=2	55.38543	54.07904	
r<=2	r=3	29.86861	35.19275	
Trend Assumption: Linear Deterministic Trend (Restricted)				
r=0	r=1	108.1004	88.80380	1 co-integrating equation at the 0.05 level
r<=1	r=2	58.74506	63.87610	
r<=2	r=3	34.11220	42.91525	

Table 3: Granger Causality Tests (Lags 2)

Hypothesis	F-Statistics	P-Value	Granger Causality
FI1 does not Granger Cause CO ₂	2.92552	0.0696	Unidirectional Causality FI1 → CO ₂ emissions
CO ₂ does not Granger Cause FI1	0.70695	0.5014	
FI2 does not Granger Cause CO ₂	3.15582	0.0575	Unidirectional Causality FI2 → CO ₂ emissions
CO ₂ does not Granger Cause FI2	1.08139	0.3524	
GDP does not Granger Cause CO ₂	0.23726	0.7903	No Causality between GDP and CO ₂ emissions
CO ₂ does not Granger Cause GDP	1.58419	0.2224	
TRADE does not Granger Cause CO ₂	0.74698	0.4827	Unidirectional Causality CO ₂ emissions → Trade
CO ₂ does not Granger Cause TRADE	3.28039	0.0520	
FI2 does not Granger Cause FI1	2.43992	0.1049	Unidirectional Causality FI1 → FI2
FI1 does not Granger Cause FI2	5.11850	0.0125	
GDP does not Granger Cause FI1	0.82958	0.4463	Unidirectional Causality FI1 → GDP
FI1 does not Granger Cause GDP	3.15385	0.0576	
TRADE does not Granger Cause FI1	1.06549	0.3577	Unidirectional Causality FI1 → Trade
FI1 does not Granger Cause TRADE	3.18885	0.0560	
GDP does not Granger Cause FI2	1.09754	0.3472	No Causality between GDP and FI2
FI2 does not Granger Cause GDP	1.95970	0.1595	
TRADE does not Granger Cause FI2	1.41744	0.2586	Unidirectional Causality FI2 → Trade
FI2 does not Granger Cause TRADE	3.21874	0.0546	
TRADE does not Granger Cause GDP	1.86796	0.1726	Unidirectional Causality GDP → Trade
GDP does not Granger Cause TRADE	2.81177	0.0765	

We find unidirectional causality running from both FI1 and FI2 to CO₂ emissions and trade respectively. FI1 granger causes GDP, while both GDP and CO₂ emissions Granger cause trade. Interestingly, there is no causality between FI2 and GDP and a unidirectional causality runs from FI1 to FI2. Once the long run relationships between the concerned variables are confirmed, we then employ the VECM to determine any short run relationship that may exist among the financial indicators and the CO₂ emissions. Table-4 shows the results of the VECM approach.

Table 4: VECM Results

Causality Test Statistics between FI1 and CO2				
Dependent Variable	Null	Chi-square Statistic	P-Value	Conclusion
D(FI1)	FI1 does not cause CO2	0.360749	0.8350	No short run causality between FI1 and CO2 emissions
D(CO2)	CO2 does not cause FI1	0.521546	0.7705	
Causality Test Statistic between FI2 and CO2				
Dependent Variable	Null	Chi-square Statistic	P-Value	Conclusion
D(FI2)	FI2 does not cause CO2	2.089951	0.3517	No short run causality between FI1 and CO2 emissions
D(CO2)	CO2 does not cause FI2	0.794668	0.6721	

From the table we find that there is no causal relationship between the financial indicators and the CO₂ emissions in the short run. However, as found earlier, a long run relationship exists between these variables. Now, long run causality tells us that financial indicators lead to CO₂ emissions in the long run, but we do not know yet whether the effect is positive or negative in nature. In order to find that out we proceed with the DOLS procedure. The DOLS estimation results are provided in Table-5.

Table 5: DOLS Estimation

Variable	Coefficient	Standard Error	T-statistic	R-squared	Adjusted R-squared
FI1	0.003091	0.010299	3.957680	0.994376	0.991001
FI2	0.006478	0.008980	4.742665	0.995723	0.993157

The coefficients are found to be positive, which indicate that financial development contributes to higher level of CO₂ emissions in Bangladesh. The results further imply that the effect of financial development on CO₂ emissions may not be significant in the short run. However, the level of CO₂ emissions may accumulate over time and the effect of financial development on the environment would be realized in the long run.

6. Conclusion

The objective of our study is to shed light on the relationship between financial development and environmental quality in the context of Bangladesh, using two financial indicators over a span of 1980-2015. However, there are some limitations that need to be addressed in our study. There are other indicators that could have been used to represent air quality such as oxides of sulphur, nitrogen and particulate matter. Due to the unavailability of data, we could not include these indicators into our study.

In our study, we find that an increase in money supply leads to an increased domestic credit to private sector. This implies that when money supply is increased in the economy, the reserves of the financial institutions increases, enabling them to provide more credit to the private sector. However, the results from our study show that increase in domestic credit to private sector does not cause growth in the economy. One possible reason could be that most of the private sector credit are used for importing goods such as foreign capital machineries, raw materials, etc., as is supported by the unidirectional causality running from domestic credit to private sector to trade.

According to our study, economic growth does not lead to financial development during the specified time period. The reason could be that the progress of the financial system may depend on a number of factors other than economic growth. Factors such as the strength of the regulatory bodies, political stability within the economy, size of the bond market and the insurance sector and the soundness of the monetary policy play an important role in determining the health of the financial sector of an economy. However, our finding reveals that increase in the money supply leads to economic growth, which is considered as a natural market phenomenon.

Our study denotes that financial development leads to an increase in the CO₂ emissions in the long-run. We also find a unidirectional causality running from one of the financial development indicators to growth, which shows that strengthening of the financial sector in Bangladesh leads to rapid industrialization and infrastructure development. This prompts an increase in energy consumption and thus degrades the environment in the long run.

The findings of our study open up valuable insights for the policy makers, who may be misled into enacting policies on the basis of short run phenomenon only. Policies should be designed in such a way that new and cleaner technologies are nurtured and old, energy consuming technologies that pollute the environment are discouraged. However, the policy makers must also take into account the constraints faced by the financial sector of the economy before endorsing policies that require cleaner technology or environment friendly production processes.

A new direction for future research could be to investigate the causal relationship using more indicators such as financial openness to capture the level of financial development and taking more control variables such as capital, labor force, energy consumption, etc. into account. A panel study on South Asian countries could also be carried out. This would aid the countries to formulate policies and regulations necessary to promote financial development and growth without deteriorating the environment.

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Table 2a: Johansen Test for Co-integration (Maximum Eigen Value Test)

Trend Assumption: Linear Deterministic Trend				
Null	Alternative	Statistics	95 percent Critical Value	Conclusion
r=0	r=1	49.30499	33.87687	1 co-integrating equation at the 0.05 level
r<=1	r=2	24.51610	27.58434	
r<=2	r=3	18.84531	21.13162	
Trend Assumption: No Deterministic Trend				
Null	Alternative	Statistics	95 percent Critical Value	Conclusion
r=0	r=1	31.76058	30.43961	1 co-integrating equation at the 0.05 level
r<=1	r=2	19.30148	24.15921	
r<=2	r=3	12.52725	17.79730	
Trend Assumptions: No Deterministic Trend (Restricted Constant)				
Null	Alternative	Statistics	95 percent Critical Value	Conclusion
r=0	r=1	49.97590	34.80587	1 co-integrating equation at the 0.05 level
r<=1	r=2	25.51682	28.58808	
r<=2	r=3	18.84881	22.29962	
Trend Assumption: Linear Deterministic Trend (Restricted)				
Null	Alternative	Statistics	95 percent Critical Value	Conclusion
r=0	r=1	49.35535	38.33101	1 co-integrating equation at the 0.05 level
r<=1	r=2	24.63285	32.11832	
r<=2	r=3	19.97185	25.82321	

Table 2b: Johansen Test for Co-integration (Trace Test) Lag Intervals 1

Trend Assumption: Linear Deterministic Trend				
Null	Alternative	Statistics	95 percent Critical Value	Conclusion
r=0	r=1	99.17692	69.81889	2 co-integrating equations at the 0.05 level
r<=1	r=2	49.87193	47.85613	
r<=2	r=3	25.35583	29.79707	
Trend Assumption: No Deterministic Trend				
Null	Alternative	Statistics	95 percent Critical Value	Conclusion
r=0	r=1	72.78494	60.06141	2 co-integrating equations at the 0.05 level
r<=1	r=2	41.02436	40.17493	
r<=2	r=3	21.72287	24.27596	
Trend Assumptions: No Deterministic Trend (Restricted Constant)				
Null	Alternative	Statistics	95 percent Critical Value	Conclusion
r=0	r=1	105.3613	76.97277	2 co-integrating equations at the 0.05 level
r<=1	r=2	55.38543	54.07904	
r<=2	r=3	29.86861	35.19275	
Trend Assumption: Linear Deterministic Trend (Restricted)				
Null	Alternative	Statistics	95 percent Critical Value	Conclusion
r=0	r=1	108.1004	88.80380	1 co-integrating equation at the 0.05 level
r<=1	r=2	58.74506	63.87610	
r<=2	r=3	34.11220	42.91525	

Export Development Fund in the Banking Sector of Bangladesh: Status and Challenges

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1. Background

Exports of goods and services represent one of the most important sources of foreign exchange income that ease the pressure on the balance of payments and create employment opportunities. An export led growth strategy aims to provide producers with incentives to export their goods through various economic and governmental policies. So export oriented development has been the cornerstone of the economic policy of the Government of many countries. Now the main thrust of many Governments is promoting private sector led export development in their foreign trade policy (World Bank, 2015). Many developing countries like Czech Republic, Malawi, Zambia, India, Pakistan, Ghana¹, Rwanda etc. are considering different policy initiatives to fill up the gap of export financing.

Openness in trade and expansionary trade policy help trade picture of Bangladesh to show a competitive way over the years. After experimenting with domestic demand based import substitution strategy for nearly two decades, the country finally opted for a more open market-based economy where the private sector would take the lead role in the development of the economy. The country achieved remarkable success in export expansion, mainly because of the remarkable performance in RMG industry. The total merchandise export is increased 26.54 percent higher in July, 2017 compared to July 2016, according to EPB data. The importance of RMG in the country's export basket has increased steadily. From its humble beginning in the late seventies, the RMG sector now accounts for more than three quarters of the total exports of the country (Sattar, 2015). To boost the export market, exporters were encouraged through various measures and initiatives.

Export finance is one of the primary constraints inhibiting exports in many low-income developing countries like Bangladesh. Inadequacies may result from the overall weakness of the financial sector mainly in facing difficulties in assessing the creditworthiness of traders. Small firms bear the brunt in obtaining access to trade credit similar to the difficulties they face in accessing other parts of the financial sector. Two public sector mechanism used to promote access to finance (especially for smaller firms) are foreign currency revolving funds; Export Development Fund managed by the Bangladesh Bank and pre-shipment export finance guarantee scheme. In these financing facility EDF is playing a vital role in pre-shipment export financing phase.

¹Export Development and Investment Fund (EDIF) in Ghana to Promote Export was established on the 4th October 2000 to provide financial resources for the development and promotion of the export trade of Ghana

Initially, the main objective of creating EDF by GoB with the help of IDA in 1989 was to provide pre-shipment credit to meet exporters' foreign exchange loan requirements for imported inputs of private sector exporters. Particularly new nontraditional exporters were targeted here to stimulate the development of backward linkages by promoting the use of inland LCs for deemed exporters. With growing exports, the size of the EDF grew too. The fund was enhanced to USD 2500 million in 2017 (BB, 2017). The total disbursement and outstanding of EDF amount have a positive growth over the years. The compound annual growth rate of disbursement from FY-2005 to FY-2016 is around 27 percent (BB, 2017). The basic reason for this enhancement is the rising demand from exporters. This growth in EDF use shows the path of canalization of private sector in export led economy of Bangladesh. But the EDF is now facing a number challenges in operations and regulations aspect.

The overall objective of this study is to highlight the utilization of EDF facility. The utilization of EDF is trying to phase out with analysis of regulatory framework, current status and challenges of using this facility in catalyzing private sector to boost export market. Moreover some global experiences are also analyzed to draw some diversified options for EDF. With this view the specific objectives are one; to describe the regulatory framework of EDF in Bangladesh; two; to analyses the current status of EDF in Bangladesh and finally to find out related challenges in handling EDF.

The study is based on both primary and secondary information. Secondary published articles on export development and associated areas were sources of relevant global literature. Government publications of various departments like Export Promotion Bureau (EPB), and BB reports are important sources of our study. Moreover, consultation with officials of BB and trade officials from trade services department from banks is also conducted. A primary survey was conducted amongst AD bank branches-mostly Principal Branches/ Main Branches-of different banks of the country. A total number of 25 AD bank branches responded as part of the questionnaire survey of the study. Case studies on the Export Development Fund (EDF) of selected bank branches are accommodated in the paper to understand challenges from the banks' and clients' perspectives.

To summarize the research study the paper is divided in six chapters. First chapter considers background, objectives, methodology and chapter organization. Global practice in facilitating export are explained in chapter two. Export trend and Regulatory initiatives for export are explained in chapter three. Chapter four has explained the regulatory framework operational procedure and current trend of EDF. Some challenges in handling EDF are explained in chapter six. And chapter six comprises some recommendations with concluding remarks.

2. Global Practice to Boost Export Markets with Specific Facilities

Exports play an important role in an economy, influencing the level of economic growth, employment and the balance of payments. Growth of an economy is directly related to exports. If exports increase at a faster pace as compared to imports, nothing can stop an economy from being a developed one (UNCTAD, 2015). On the other hand, the instability in exports can adversely affects the process of economic development. So export oriented development has been the cornerstone of the economic policy of the Government of many countries. Now many Governments are promoting private sector led export development in their foreign trade policy (WB, 2015). European countries encourage their firms to export when their primary markets are saturated and depressed (WTO, 2017). Moreover export financing assumes even greater importance in the context of the lack of liquidity in European countries such as Portugal. In different fiscal policy, financial support is considered as a fundamental resource to boost export in view of the international markets. Many studies (Moini 1998, Kotabe and Czinkota 1992, Howard and Herremans 1988, Kedia and Chhokar 1986) have explored the efficacy of export assistance programs introduced by governments and central banks of different developing countries. As Janda claims (2008), state export support carried out through government agencies is a standard feature of the economies of a vast majority of countries, including the Czech Republic,

Malawi, Zambia, India, Pakistan, Ghana², Rwanda etc (Box-2.1 to 2.4). In many countries specific fund in different name are opened by government and its agencies to accelerate the export development in the country.

Box 2.1: Czech Export Strategy 2012 – 2020 to Boost Export

Several export strategies were introduced, including a strategy for years 2003 to 2006, 2006 to 2010 and the latest one for the period 2012 to 2020, which seems to be the most comprehensive (MIT, 2012a). The strategy provides three main pillars of the export strategy, which should secure its success and fulfillment of the specific goals. The first pillar “Information for export” should cover creation of a center for shared services and export information, one-stop-shop and global diversification. The second pillar “Export development” covers services for exporters, export financing and insurance (special export credits and guarantees), international sources of financing and development cooperation, clusters and export promotion and a control and communication platform. The last pillar “Business opportunities development” takes care of implementation of the EU trade policy and export to the EU internal market optimization of the foreign institution network, foreign network services and investment and innovation for export of goods and services.

Source: Ministry of Industry and Trade, Czech Republic, 2017

Box 2.2: Export Development Fund For The North Eastern Region in India

Following the announcements made by the Prime Minister of India in respect of measures for the development of exports from the North-Eastern region in Shillong on 2000, an Export Development Fund (EDF) has been set up by the ministry of commerce and industry. The objective of the Fund is to assist specific activities for promotion of exports from the North-Eastern region of the country including Sikkim. All activities, which have a linkage with the exports from the region and are designed to help exports, shall be eligible for assistance from the fund.

Source: Ministry of Commerce and Industry, India, 2016

Box 2.3: Export Growth Fund (EGF) Nurturing SMEs, closing the export deficit gap in Rwanda

The Ministry of Trade and Industry (MINICOM), under the fourth pillar of the National Export Strategy, established the Export Growth Fund (EGF) that will be managed in partnership with Development Bank of Rwanda (BRD). The facility is aimed at fast-tracking export growth through solving the challenge of access to finance and high interests that have as well as augment exporters’ ability to compete successfully on the international market and ultimately enhance the country’s export earnings. The principal objectives of the facility include; broaden the range of financial services of Rwanda’s finance sector, to facilitate access of Export oriented SMEs with growth potential to tailored export finance products and services, to provide access to finance at competitive prices to export oriented SMEs, improve knowledge of SMEs on export related finance via technical assistance, increase capacity building through improving knowledge of finance institution on export related financing instruments and related previously, the financial sector generally extended financing to traditional exports such as hotels and tourism, tea, coffee and minerals.

Source: International Growth Center, 2017

²Export Development and Investment Fund (EDIF) in Ghana to Promote Export was established on the 4th October 2000 to provide financial resources for the development and promotion of the export trade of Ghana

Box 2.4: Opportunity To Access Export Business Financing Through EDF in Malawi

Export Development Fund (EDF) is a Development Finance Institution with a particular focus on exports. EDF was set-up by the Government of Malawi to provide financial assistance required for the development of exports in order to expand the country's capacity to generate sufficient foreign exchange. Exporters are hereby reminded of the availability of project and trade finance facilities from the fund. Project Finance meant for startups, expansion and modernization of export projects in need of capital assets while Trade Finance is a working capital facility aimed at supporting viable export businesses to facilitate production and aggregation of agricultural commodities and other locally manufactured products.

Source: Ministry of Trade and Industry, 2016

3. Export Led Economy of Bangladesh: Export Trend and Regulatory Initiative to Promote Export

3.1 Export Trend in Bangladesh

When it emerged as an independent country Bangladesh was a relatively closed economy with the trade ratio at less than one-seventh. Since then merchandise exports and imports of Bangladesh have increased greatly in quantity and variety. In the early years, the country's exports comprised mostly raw jute and a few jute good items. These accounted for about nine-tenths of the total export revenue of US\$377 million during the fiscal year 1972-73 (Taslim & Haque, 2011). The export composition changed dramatically since then; Ready Made Garments (RMG) comprising knitwear and woven apparel products emerged as the principle export items of the country while jute export stalled (Figure-3.1 and 3.2). The country achieved remarkable success in export expansion, mainly because of the RMG industry. The total merchandise export increased to USD 3.21 billion in July, 2017 which was 26.54 percent higher than USD 2.53 billion in July, 2016, according to EPB data. The importance of RMG in the country's export basket has increased steadily. From its humble beginning in the late seventies, the RMG sector now accounts for more than three quarters of the total exports of the country. Thus, during the last three decades Bangladesh has moved from an excessive dependence on jute products to RMG products in its export trade. The major market for RMG are USA, Germany, UK, Japan, India, China, Australia, South Korea and Brazil (EPB, 2017).

Figure 3.1: Sectoral Distribution of Export in 1972-73

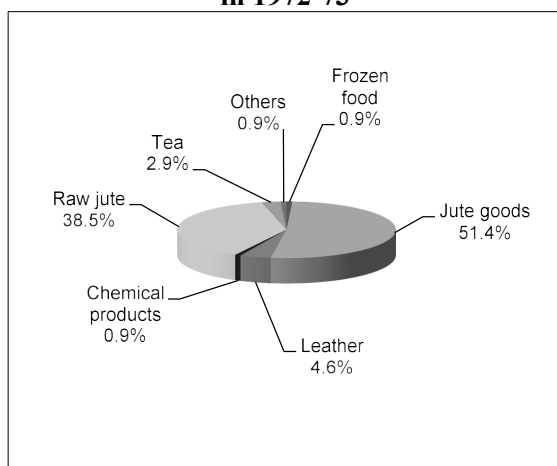
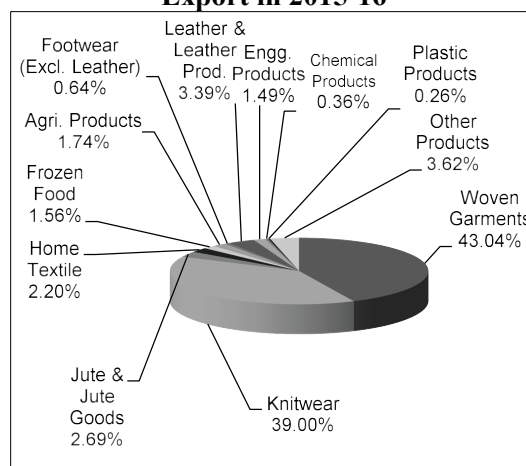


Figure 3.2 : Sectoral Distribution of Export in 2015-16

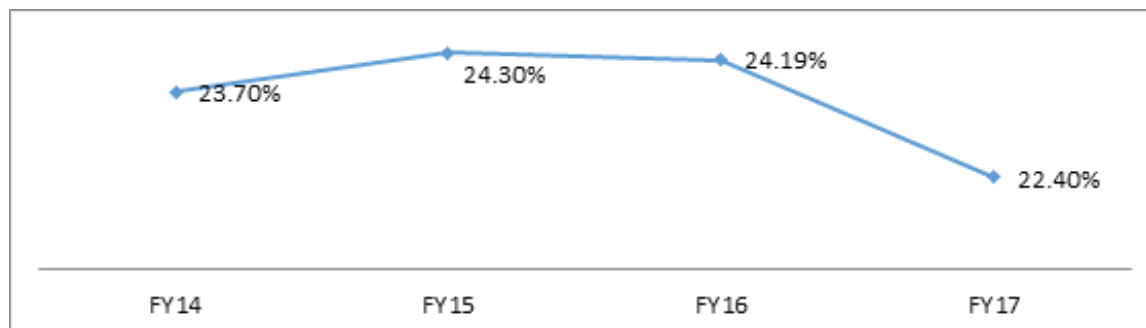


Source: Export Promotion Bureau, 2017

The RMG exports are also evidencing a huge import of raw materials over the year. The import of raw materials, like raw cotton, yarn textile etc., to support major export is about 22 percent of total import in fiscal year 2017. In last four fiscal years, this import was always over 20 percent of total import (Figure-3.3). And most of the cases, back to back LC facilities are used to procure raw

materials from global market as well as local market. Moreover, to support import need of exporter, government has introduced export development fund to provide pre-shipment export financing facility on revolving basis.

Figure 3.3 : Import Trends of Raw Cotton, Yarn, Textile and Articles thereof as Percentage of Total Import during FY14 to FY17



Source: Bangladesh Bank, 2017

3.2 Government's Initiative to Catalyze Export in Bangladesh

Export finance is one of the primary constraints inhibiting exports in many low-income developing countries like Bangladesh. Inadequacies may result from the overall weakness of the financial sector mainly in facing difficulties in assessing the creditworthiness of traders. Small firms bear the brunt in obtaining access to trade credit similar to the difficulties they face in accessing other parts of the financial sector. GoB has special focus in arranging export credit at comparatively lower interest rate to exporters along with other financial assistance. Product sectors have been identified as the "highest priority sectors" while some other product sectors as "special development sectors" depending on the level of production and supply, potential contribution to the export sector, demand in the international market and, above all, the capacity to contribute to the socio-economic development of the country. For both the sectors, government has a policy to provide exporters soft loan and lower interest rate. In the policy, Export Promotion Bureau (EPB) has been given authority to provide necessary financial assistance from Export Promotion Fund (EPF) and Export Development Fund (EDF). Two public sector mechanism used to promote access to finance (especially for smaller firms) are foreign currency revolving funds (e.g. Export Development Fund managed by the Bangladesh Bank) and pre-shipment export finance guarantee scheme³. In policy it is also mentioned to increase the amount of Export Development Fund when required. According to the export policy, commercial banks are to provide export credit to the exporters at least 90 percent of L/C or contract value against irrevocable letter of credit or confirmed contract. Banks are also authorized to fix the exporters' cash credit limit based on the success of export earning of previous years and bank-client relation and in light of actual potential/ management of export growth. Commercial banks cannot charge overdue interest in case of the products exported on the basis of sight-payment under irrevocable letter of credit on condition of submitting necessary export documents by the exporter.

³The revolving funds provide finance for imported inputs based on the exporter presenting the letter of credit which allows the exporter's bank to access the fund's foreign exchange to pay for the imports. The guarantee schemes cover exporters' manufacturing non-performance risks and are generally targeted at smaller firms and new entrants into the export area that have difficulty in satisfying bank's collateral requirements.

4. Export Development Fund in Bangladesh: Regulatory Framework and Operational Procedure

4.1 Regulatory Framework in EDF Management

Initially, the main objective of creating EDF by GoB with the help of IDA in 1989 was to provide pre-shipment credit to meet exporters' foreign exchange loan requirements for imported inputs of private sector exporters. Particularly new Non-traditional exporters are targeted here to stimulate the development of backward linkages by promoting the use of inland LCs for deemed exporters⁴. Considering the importance of pre-shipment trade finance, IDA and government of Bangladesh had approached to create a fund named Export Development Fund. Initially IDA has contributed USD 25 million with government in total size of USD 30.16 million of EDF. As Bangladesh Bank is the regulatory authority for regulating and supervising all foreign exchange transactions that mainly include trade payment and financing activities, the operational procedure and banking regulations regarding EDF are mainly linked with central bank. Practically, ADs offer services as the agents or dealers of the central bank, and ADs are required to follow Foreign Exchange Regulation Act 1947, trade policies and a sets of international rules and guidelines formulated by International Chamber of Commerce (ICC). The major regulations relevant for all foreign exchange transactions (that ensures foreign currency inflows and outflows) may be summarized as follows (Box-4.1).

Box 4.1: Regulation/ Rules/ Guidelines Relevant for Short Term Foreign Currency Financing by Banks	
Domestic Regulations/ Rules: Foreign Exchange Regulations Act 1947; Export Policy 2015-2018; Import Policy Order 2015-18; Bangladesh Export Processing Zones Authority Act 1980; The Bangladesh Economic Zones Act 2010; Bangladesh Investment Development Authority Act 2016.	International Guidelines/Rules: Uniform Customs and Practice for Documentary Credit (UCP 600); Uniform Rules for Collections (URC 522); International Standby Practices (ISP 98); Uniform Rules for Demand Guarantees (URDG 758).

Foreign Exchange Regulation Act 1947 or FERA, 1947 has empowered Bangladesh Bank to regulate all kinds of foreign exchange dealings in Bangladesh. Empowered by the Act, Bangladesh Bank issues AD licenses for conducting trade payments, financing and other international banking operations. Following the provisions of the Act, Bangladesh Bank issues circulars/guidelines time to time to regulate trade payment, financing, remittance services etc. activities to be followed by the banks. In this process, one cannot by-pass the policy decisions and directives of the government in the form of Export Policy and Import Policy Order issued from the Ministry of Commerce of the country as empowered by the Imports and Exports (Control) Act, 1950.

The issues related to EDF is held and managed by the Foreign Exchange Reserve and Treasury Management Department (FERTMD) of Bangladesh Bank and policy related issues are managed by Foreign Exchange Policy Department of Bangladesh Bank. With growing exports, the size of the EDF grew too. The fund was enhanced to USD 2500 million in 2017. Furthermore, USD 200 million has been allocated to refinance the Green Projects. Exporters can avail EDF loan for imports against export LC/ firm export contract/ inland back to back L/C through Authorized Dealer (AD) banks. The EDF refinancing covers sectors like textile, garments, accessories/ packaging material, plastic goods, leather goods & footwear, ceramic wares, dyed yarn, agro-food processing, bicycle, etc.

⁴Supplier of local goods & raw material used in industries/ projects will be considered as deemed exporter. Deemed exporters, like direct exporters, will enjoy all export facilities including duty-drawback, local raw materials used for producing export, and

In 2009 a master circular was published by Bangladesh bank. The main purpose of the master circular was to make the operational procedures for Authorized Dealers (ADs) more easy and strict compliance. Interest rate on borrowing from EDF, tenor of EDF loans, eligibility of EDF loans, amounts of EDF loans and application for EDF loans from BB are the main focus of the master circular. BB changes interest rate considering local market and international market interest rate. Currently ADs charge interest rate @ six month LIBOR +1.5 percent to the export clients and BB charge @ six month LIBOR +1 percent. ADs are to repay EDF loans to BB upon receipt of proceeds of the relative exports in all cases within 180 days from dates of disbursement which is extendable by BB up to 270 days upon application to BB explaining the necessity of longer period for repatriation of export proceeds. So far 15 numbers of circular and circular letters have been issued by BB after issuance of master circular in 2009 (Appendix-1). BB has set some common eligibility criteria to avail the fund. ADs are required to follow the instructions before providing EDF Loan facilitation and that is shown in box-4.2

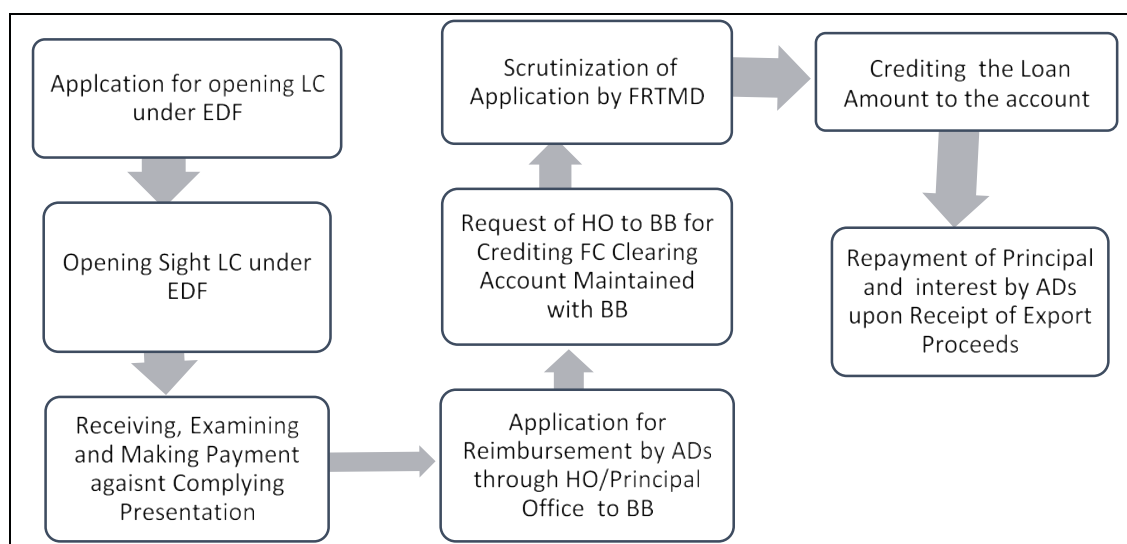
Box 4.2: Some Common Eligibility for Availing EDF Loan	
• Input imports by manufacturer-exporters in full compliance with the value addition and Import Policy Order (IPO) • No overdue Bill of Export and Bill of Entry • Not exceeding single borrower exposure limit • Manufacturer-exporters who are not loan defaulters including those whose loan accounts have been rescheduled • Utilization in the case of importing raw-materials for manufacturing the exportable products • Borrowing as many times in a year on revolving basis under limit	
Source: BB	

EDF financing is admissible for input procurements against back to back import LCs/ inland back to back LCs in foreign exchange; by manufacturers producing final output for direct export. This can also be used by producers of local deliveries of intermediate outputs to manufacturers of the final export. At present, the single party borrower limit is set at USD 20.0 million, except leather goods & footwear, ceramic wears, dyed yarn, agro-food processing, bicycle, accessories and packaging and plastic goods manufacturer exporters. However, this limit is maximum USD 15.0 million for leather goods & footwear, ceramic wears, dyed yarn, agro-food processing, bicycle and USD 2.0 million for accessories and packaging and 1.00 million for plastic goods manufacturers. The appendix-2 indicates different sectors/ products including purpose and maximum outstanding for a single borrower from EDF loan.

4.2 Operational Procedure of EDF in Bangladesh

Normally for some instances to import raw materials, ADs are requested to issue sight LCs and importers apply to avail EDF facilities for repayment of those LCs. ADs, after receiving and examining documents, make sight payment against complying presentation. On the day of payment, ADs claim reimbursement from BB through its head office or principal branches. This claim is made to Bangladesh Bank through online. FRTMD of Bangladesh Bank scrutinizes applications, if claim is genuine, makes reimbursement into ADs foreign currency clearing account maintained with BB. In case of repayment to BB, the International Division of respective bank authorize BB for debiting principal and interest/ profit amount of EDF. A prescribed detailed calculation worksheet is also prepared by ADs for reimbursement and repayment of EDF loan. If ADs cannot repay the loan within the stipulated period, in that case, BB may consider extending the tenor of the loan with valid justification. In the time of application for EDF, ADs have to authorize BB to debit banks' foreign currency account with BB in realization of principal and accrued interest due upon expiry of the permissible tenors of the loans, if not repaid earlier by ADs. The detail procedures is shown in Figure-4.1

Figure 4.1: Procedure of Getting Export Development Fund



4.3 Analysis of EDF in Bangladesh: Current Trends and Status

The total disbursement, on a revolving basis, from EDF in FY16 stood at USD 3.84 billion compared to USD 3.55 billion in FY15. The outstanding balance at the end of June, 2016 stood at USD 1.69 billion which was USD 1.64 billion in the previous year (Figure-4.2 and 4.3). The total disbursement and outstanding of EDF amount have a positive growth over the years. The compound annual growth rate of disbursement from FY2005 to FY2016 is around 27 percent. The basic reason for this enhancement is the rising demand from exporters. Earlier only 2-3 export items like garments qualified for EDF assistance. Now the basket of export items are diversified under EDF facilities. Considering the increasing demand, size EDF is also increased by central bank.

Figure 4.2: Disbursement from EDF in Million USD from FY05 to FY16

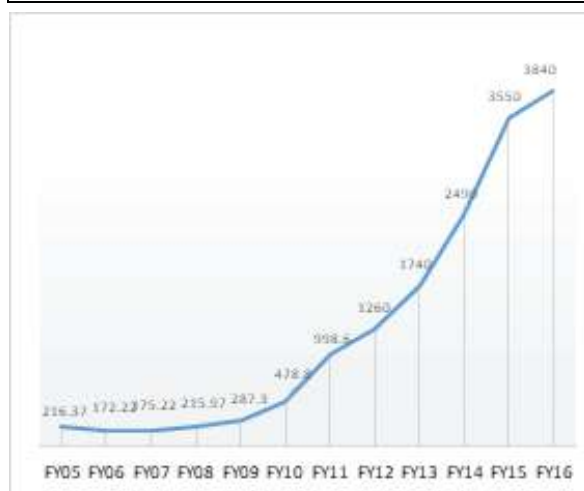
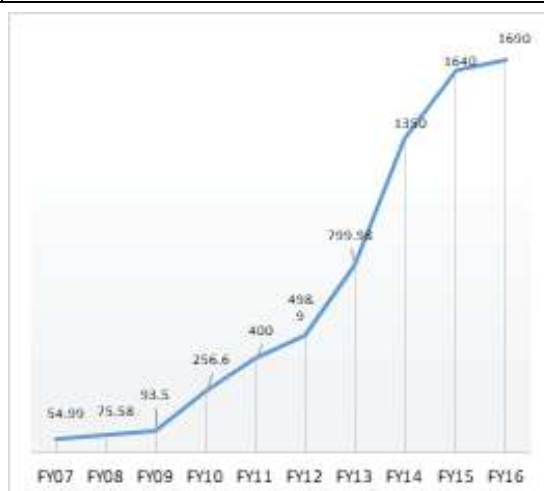


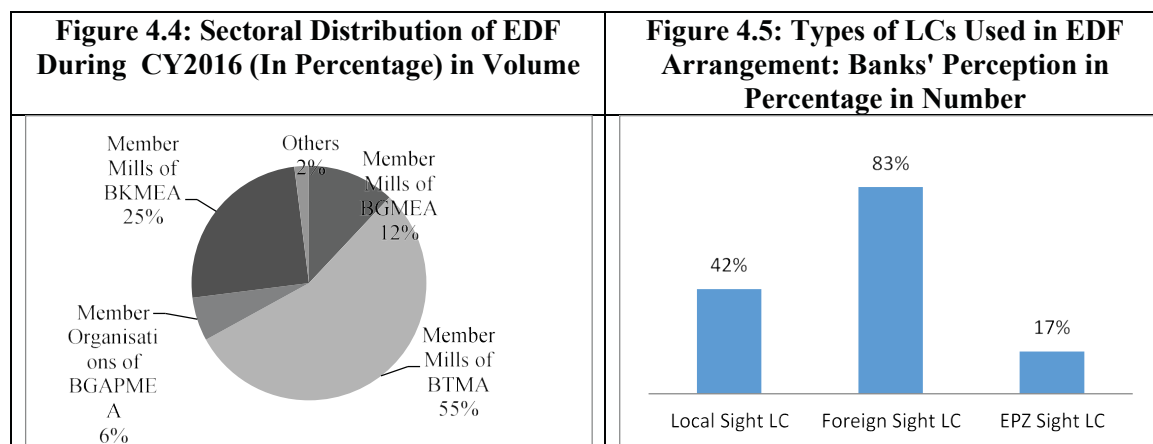
Figure 4.3: Outstanding Balance of EDF in Million USD from FY05 to FY16



Source: BB,2016

As observed in survey data during CY2016, member mills of BTMA bagged 55 percent of total EDF facility which is followed by member mills of BKMEA (25 percent) member mills of BGMEA (12%), member organizations of BGAPMEA (6 percent) (Figure-4.4). The members of these associations normally import cotton, yarn, textiles, garments accessories etc. From survey

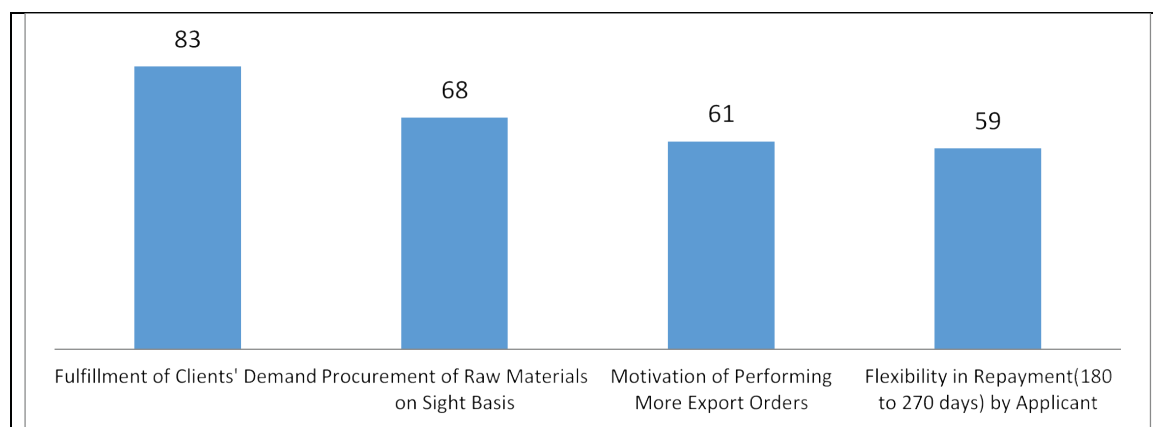
data, it has been observed that main sources of raw materials from abroad under EDF are from China and India (Figure-4.4). Different coded of LCs are used in EDF arrangement, foreign sight LC topped most with 83 percent , on the other hand local sight LC and EPZ sight LC were 42 percent and 17 percent respectively. Basically these foreign sight LCs under EDF are opened to import cotton, yarn etc. Sometimes, foreign buyers' requirement and also to ensure quality in low price, our exporter prefers to import raw materials which increase the demand for foreign back to back LCs under EDF facility.



Source: Survey Data

The increasing demand for EDF is also an opportunity for banks in export business. As sight LCs in importing raw material is competitive payment terms, exporter sometimes demands sight LCs in importing raw materials. In survey fulfillment of client's demand and procurement of raw materials on sight basis are considered as important benefits of utilization of EDF fund from bankers' point. Moreover, EDF facilities also boost the financing which gives larger flexibilities in repayment from exporters. This facility also encourage and support exporters to perform according to the export order on time, which motivates more export order (Figure-4.6).

Figure 4.6: Benefits of EDF: Banks' Perception in Percentage



Source: Survey Data

5. Challenges in Utilization of EDF in Bangladesh

In connection with EDF in Bangladesh, most of the cases of challenges are related to non-compliance of regulation or guidelines. Some of these are intentional, and many of these are due to knowledge gap of the service providers. There are also instances when fraudulent activities or undue legal steps by the clients resulted in difficulties. Behavior on the part of clients and other

external steps also affect country risk, and thus export business as well. Of the different trade related frauds, delay payment, compliance and undue charging issues are very concerning to all policy makers in country. Some of these key challenges of EDF are summarized as follows:

5.1 Delay payment may cause to reduce competitiveness

LC is globally guided by UCPDC and international standards. Sometimes violation of international practice may reduce the competitiveness of domestic client. There are instances that to utilize EDF facilities bankers are delaying payment under sight LCs. But as per BB guideline, ADs are to make payment of sight LCs first and then claim for reimbursement. But some are waiting for fund from BB and then make payment of the LCs (Mini case-5.1). However, sometimes nonpayment or delay in export proceed may also lead to the delay payment of import LC under EDF. In our survey this is considered as cause by the bankers (Figure-5.2). This practice is becoming a threat to country risk and exporter's competitiveness. This challenge is also identified by bankers in our survey data and it is 59 percent (Figure-5.2).

Mini Case 5.1: Intentional Late Payment of EDF Import Bill

Mr. L is the GM (commercial) in ABC Garments Ltd. He came to the manager of the bank branch with a request to open a sight back to back LC to import cotton. He also applied for EDF facilities. The bank branch issued the LCs. Upon receiving complying documents, the AD did not make payment from his own account though the LC was on sight terms. AD claimed the fund from BB and held the compliant document for long 19 days. He made payment after getting reimbursement from Bangladesh Bank. This goes against the spirit of international trade standards as well as violation of domestic regulations in the country.

Note: Bank source.

5.2 Undue Charging for the Lead Time in EDF Arrangement

Normally banks are supposed to make payment in foreign currency and they claim for reimbursement from BB and for the lead period between payment of sight LC and reimbursement from BB, banks are asked to charge LIBOR + 2.5 percent. But in some cases banks are creating BDT loan as well as applying commercial rate, which is violation of regulations (Mini case-5.2). Here undue charging is creating a pressure on exporter and creating BDT loan in client's name also has exchange rate risk exposure for the exporter. It is simply misusing the facility to promote export.

Mini Case 5.2: Undue Charging of Additional Profit for the Lead Time on EDF Import Bill

An EDF LC was issued at the request of an importer. After having compliant document, AD bank branch requested its' treasury to make payment in foreign currency. And AD also created a loan in BDT at client's account. The AD got reimbursement from BB after 13 days from the creation of PAD in the name of client. But interest rate in BDT loan account was charged at commercial rate rather than BB prescribed EDF rate. Here in this case, bank cannot charge commercial rate for the lead time in EDF arrangement. Moreover, EDF prescribed rate is for foreign currency denominated facility.

Note: Bank Source

5.3 Malpractice in EDF may Create Risk for Banker

EDF is a trade financing facility to support exporters. There are some criteria from BB for eligibility to get EDF facility. Sometimes avoiding those criteria to select client for EDF facility may create undue risk for ADs as well as for bankers (Mini Case-5.3 and Mini Case-5.4). As EDF is foreign currency fund and it is not for all, proper utilization of this fund is really required. The selection of borrowers is a crucial parameter for Bankers to provide EDF facility. However, strict monitoring and supervision for proper utilization of EDF fund is really the gap here.

Mini Case-5.3: Undue Influence of Loan Defaulter

A client (exporter), who had rescheduled investment, approached AD bank branch for issuance of EDF LC. At first, the manager denied to open the LC as customers having reschedule investment are not eligible for EDF facility. But for undue influences of the client, the manager was forced to provide EDF facility. Ultimately, EDF LC was issued and settled by the AD bank branch in time. But, a special team from BB came to the branch and scrutinized the data of investment and trade finance. They easily found the wrongful presentation of fact about-Opening of EDF LC while one of the investments of the said client was further rescheduled. Finally, the manager and the trade finance in-charge was suspended and AD license was seized for some days.

Note: Bank Source

Mini Case-5.4: Issuance of EDF LC Having Overdue Export Bill and Bill of Entry

Mr. A is an exporter who came to the bank with a request to open an EDF LC. But the client had a long overdue EXP (for which the actual export bill still was not repatriated) with other lien bank and an overdue Bill of Entry with the said Branch. At first, the manager denied to open the EDF LC but later on based on the client earnest request he opened the said LC without complying the directions of Central Bank guidelines and rules of other controlling authorities. But after issuance EDF LC, the client failed to make payment on time. But BB had debited the bank's foreign currency account on due time. The banker was penalized by its' internal bank management for violating the domestic regulation.

Note: Bank Source

5.4 Fund Diversion May Affect the Utilization of EDF

EDF is a facility for exporters to get finance for importing raw materials by sight LC. It's a foreign currency pre shipment financing. All export industries are not eligible to get this fund. But some eligible exporters are misusing the fund by diverting its proper interest (Mini Case-5.5). Sometimes the EDF import accommodation bills are drawn in our country simply to meet emergency cash mismatches, easy way of financing and making speculative profit on it. It is sometimes difficult for banker to find out this fund diversion motive. Clients' moral hazard and bankers' asymmetric information problem induce the risk of fund diversion. It is also found in our survey as a big challenge for bankers which is 67 percent (Figure-5.2).

Mini Case-5.4: Issuance of EDF LC Having Overdue Export Bill and Bill of Entry

Mr. A is an exporter who came to the bank with a request to open an EDF LC. But the client had a long overdue EXP (for which the actual export bill still was not repatriated) with other lien bank and an overdue Bill of Entry with the said Branch. At first, the manager denied to open the EDF LC but later on based on the client earnest request he opened the said LC without complying the directions of Central Bank guidelines and rules of other controlling authorities. But after issuance EDF LC, the client failed to make payment on time. But BB had debited the bank's foreign currency account on due time. The banker was penalized by its' internal bank management for violating the domestic regulation.

Note: Bank Source

5.5 Inappropriate Approach of Bankers may Create Obstacles in EDF Utilization

The background to create EDF is not reflected sometimes in utilization of EDF facilities by bankers. Moreover, the bankers' are also unable to disseminate the information of this facility to the client properly in several cases. This inappropriate information may create business challenge for clients (Mini case-5.6). So bankers' unprofessional approach sometimes play a crucial role for proper utilization of EDF.

Mini Case 5.6: Inappropriate Approach of Trade Official in EDF Settlement

An EDF LC was issued and paid by AD bank branch of a private commercial bank. Due to non-repatriation of related export proceeds, the AD failed to repay the EDF payment. Though there is an option of extending the maturity date up to 270 days, a forced loan was created by the branch in the name of the importer at commercial rate. Here the official had option to apply for extending maturity date from BB with valid justification.

Note: Bank Source

5.6 Regulatory Challenge Faced by the Bankers

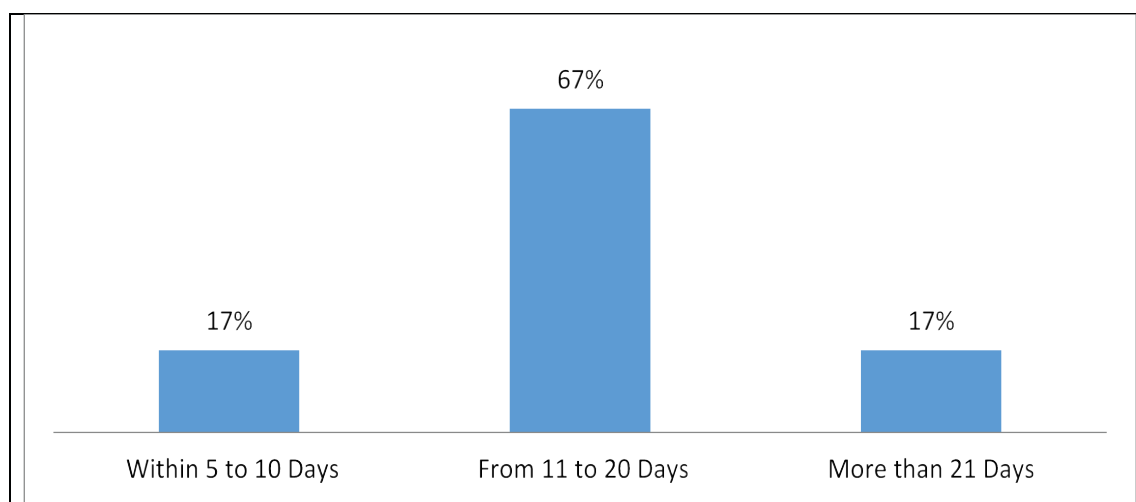
Uncertain lead time is an ambiguous risk for bankers to handle EDF fund. In different circulars from BB, clear information of lead time is absent. Bankers are certain to get reimbursement from BB but they are uncertain about the exact time (Mini case-5.7 and Figure-5.1). In our survey it is found average lead time is 11 to 20 days (Figure-5.1). Moreover, Criteria to incorporate a new sector under EDF facilities are not made public and are not known to exporters. Various sectors of export are entitled to get this facility; the inclusion of a sector is solely determined by BB. However, there is a gap in proper regulatory information for bankers as well as clients. In some cases the permitted limit for the single borrowers may not be enough to support the exporters. However, though the list for EDF facilities are updated but some sectors are also important enough to get EDF facilities. In some exports like Pharmaceuticals, Ship Building, Light Engineering etc. are getting importance in export bundle and they are in need of pre-shipment export financing facility like EDF.

Mini case-5.7: Uncertain Lead Time for Receiving EDF May Create Operational Challenge

An exporter approached to an AD to open a sight LC under EDF facility. AD opened the LC. After complying presentation of documents under that LC, AD approached to its' treasury to make the LC payment. The treasury settled the LC and created a foreign currency loan in client's name according to the prescribed rate of EDF. But AD was not certain when reimbursement would be given by BB. Ultimately it created foreign currency cash flow management problem for treasury of respective bank. But the reimbursement from BB was came after 23 days. Reimbursement uncertainty may create some undue environment for banks to handle EDF.

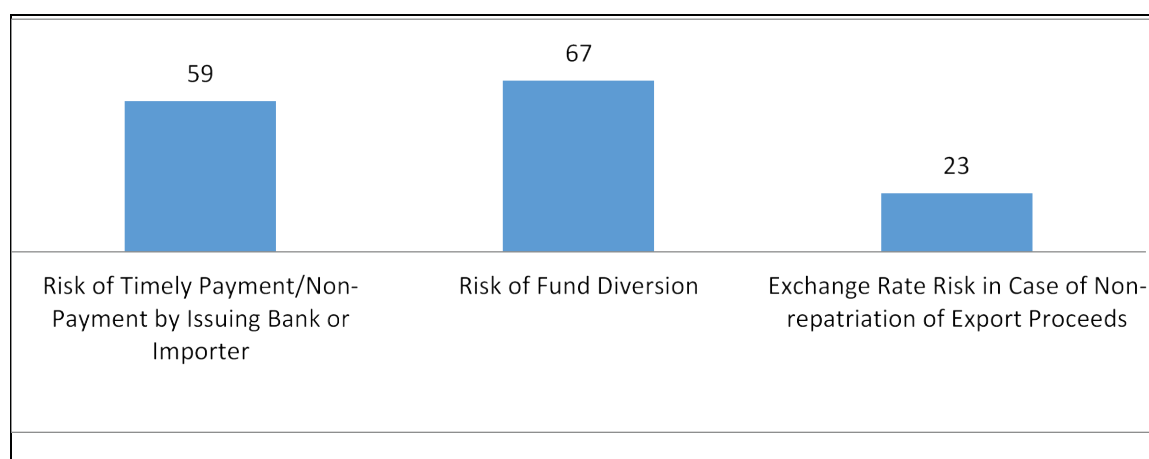
Note: Bank Source

Figure 5.1 : Lead Time for Receiving EDF Disbursement from BB: Banks' Perception in Percentage



Source: Survey Data

Figure 5.2: Challenges of EDF: Banks' Perception in Percentage



Source: Survey Data

6. Recommendations

Considering the practice, trend and challenges in this study some recommendations are summarized below:

6.1 Lower Lead Time to Get EDF

In survey, higher lead time to get reimbursement is considered as an inconvenience challenge for bankers. The demand for EDF is increasing over the period. So sometimes, for BB, lead time for reimbursement becomes higher. Actually bankers are also not informed how long it would take to get reimbursement. Though banks are charging interest rate they are facing sometimes mismatch in foreign currency liability. So, if they have the information of how long will be the lead time, it would be better for them to manage the liability under EDF facility.

6.2 Criteria to get EDF Facility to be Made Public

Though the list for EDF facilities is updated but some sectors are also important enough to get EDF facilities. In some exports like Pharmaceuticals, Ship Building, Light Engineering. etc. are getting importance in export bundle. And some are importing raw materials and capital machineries in these sectors. For getting more acceptance in global market these sectors are importing raw materials from abroad. But they are not getting the pre-shipment financing facility under EDF. Regulators special ministry of commerce may disclose the criteria to be included in the EDF list.

6.3 Bankers' Need to Minimize Fund Diversion Risk

Moral hazard and asymmetric information problem sometimes create a risk of fund diversion. This facility is a remarkable pre shipment financing option for exporters. As exporters' are bank's client they need to justify properly the amount that is imported under EDF facility. It is difficult for them to justify all imports but it is expected. They need to do proper investigation before applying for EDF facilities.

6.4 Value Addition Criteria Needs to be updated

As EDF is a facility, it should be used to encourage to use domestic backward and forward linkage facility. High value added exports need to be inspired by different facilities. Under EDF, value addition is considered as criteria for eligibility. But the quantification of this value addition to get EDF facility is needed for all selected export sectors. Moreover, this quantification needs to be updated after a certain period of time. The limit to get EDF can also be linked with the value addition requirement.

6.5 Need Proper Monitoring for Malpractice under EDF

In the study, we have found different types of malpractice which actually hamper the true interest of EDF facility. Delay payment, nonpayment, overdue bill of entry, fund diversion etc. are reflected as major malpractice in the study. This misconduct may cause high country risk, business risk and exchange rate risk. In this case, Bangladesh Bank should come forward to introduce mechanism for reducing the malpractice. In this case proper reporting on EDF facility can be an option. However absence of proper disclosure of EDF utilization data may create ambiguity in market. So effective data disclosure mechanism is needed for proper monitoring and motivation

6.6 Customized Limit to Get EDF Facility

Under EDF there is single borrower limit which justifiable. But this limit can be used as a motivational tool for exporter. Regulators may think to introduce criteria for customized single borrower limit under EDF facility. Good exporters should be considered under this customization. This may also act as a reward for good export.

6.7 Innovation Needed in Utilizing EDF

Basically EDF is used as pre-shipment export facility. In many countries, policy makers are allocating soft fund, both in domestic and foreign currency, to boost the export market. Some funds are considering financing as well as technical and capacity development of exporters. In our country major motive of EDF is to meet export financing need in foreign currency. In our country only foreign currency financing is considered under EDF. But this fund can be diversified in category of utilization. Capacity development of exporters as well as bankers are really challenge in export market, which can be consider under export development soft fund. But in many countries domestic currency financing is also available for export development to boost local backward linkage. These issues can be considered under innovation in soft fund facility for export development.

6.7 Integration among Stakeholders to Build Awareness

EDF is a facility for exporter. But there is knowledge gap in the market on the criteria as well as the parameters of using EDF facility. In these circumstances, Bangladesh Bank and bankers are not enough to remove this gap in the market. Different other regulators, business associations, training and research intuitions are needed to come forward to build awareness in the market for proper utilization of EDF facility. Moreover, the integration among stakeholders also can remove the barriers among them and a possible policy changes can come out to match the market.

Concluding Remarks with Recommendation

In order to make interest more competitive on foreign currency loans for Exporters, EDF facility is introduced. The goal of this facility to support exporters trying to diversify into higher value products. The demand for this fund is growing over the years. But growing demand of EDF is also introducing some challenges. Malpractice by bankers, willful default of clients and fund diversion risk may cause an operational obstacle at proper utilization of EDF. Moreover, absence in quantification of Value addition of export products, lack of monitoring and information gap of criteria for being in EDF list are also making some regulatory challenge in this facilities. Data on EDF is needed to be disclosed for proper monitoring and motivation. In the path to boost export, stakeholders' integration is also required for better utilization of EDF facility. However, innovation in financing export development is required to reflect local currency soft loan facility for exporters. Capacity development is also an issue for further consideration.

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<http://www.epb.gov.bd>

www.bb.org.bd

Appendix-1

Summary of FEPD Circulars and Circular Letters Issued during CY 2002 to 2017	
DBOD Circular No. 02: Export Development Fund (Date: 02-07-2002)	Profit Rate Reduction from 4.35 percent to 2.96 percent effective from 01-07-2002
DBOD Circular Letter No. 09: Export Development Fund (Date: 23-09-2002)	EDF claim through ID.
DOS Circular No. 01: Export Development Fund (Date:12-01-2005)	Profit Rate increased 3.79 percent from 2.96 percent effective from 01-01-2005
DOS Circular No. 04: Export Development Fund (Date :02-04-2005)	Profit Rate increase 4.39 percent from 3.79 percent effective from 02-04-2005
FRTMD Circular No. 03: Export Development Fund (Date: 25-10-2007)	Total EDF volume limit increase from \$100.00 million to \$ 150.00 million
FRTMD Circular No. 01: Export Development Fund Repayment (Date: 23-04-2008)	EDF repayment tenor increased from 180 days to 270 days effective from 04-05-2008
FRTMD Circular No. 01: Export Development Fund (Date: 30-06-2009)	EDF Exports' borrowing limit enhanced from \$1.50 million to \$2.00 million effective from 01-07-2009
FE Circular No. 25: Master Circular on Export Development Fund (EDF) (Date: 22-12-2009)	Master Circular on Export Development Fund (EDF) on overall issues and reporting procedure
FE Circular No. 19: Interest rate on Export Development Fund (EDF) loans (Date:22-09-10)	Manufacturer-exporters are charged interest @ six-month LIBOR +2.5 percent p.a. on EDF loan
FE Circular No. 20: Enhancement of Export Development Fund (EDF) (Date: 27-10-2010)	Total EDF volume limit enhanced to USD 400 million from existing USD 300 million.
FE Circular No. 21: Inclusion of Export Registration Certification (ERC) No. of direct/deemed Exporter for loan from Export Development Fund (EDF) (Date: 14-11-2011)	Inclusion of ERC No. of direct/deemed Exporter for loan from Export Development Fund (EDF) in all the reporting forms.
FE Circular No. 04 : Export Development Fund (EDF) (Date: 10-02-2013)	Inclusion of BGAPMEA members for enjoying EDF loan.
FE Circular No. 13 : Export Development Fund (EDF) (Date :10-10-2013)	Total volume of EDF for single member of BGAPMEA/BTMA increased.
FE Circular No. 15 : Interest rate on borrowing from Export Development Fund (EDF) (Date:15-12-13)	AD will charge six-month LIBOR + 1.5 percent p.a applicable for the next Six months from the date of this circular.
FE Circular No. 16: Export Development Fund (EDF) (Date: 18-12-2013)	Inclusion of LFMEAB /BCWMA members for enjoying EDF loan.
FE Circular No. 26: Export Development Fund (EDF) (Date : 22-06-2014)	Total volume of EDF for single member of BGMEA/BKMEA/BTMA increased from \$12.00 million to \$15.00 million.
FE Circular No. 30: Export Development Fund (EDF) (Date: 21-07-2014)	Total volume of EDF for single member of BGAPMEA increased from \$1.00 million to \$2.00 million.
FE Circular No. 20: Export Development Fund (EDF) to Type C industries in Export Processing Zones (Date: 13-12-2015)	Export Development Fund (EDF) to Type C industries in Export Processing Zones
FE Circular No. 22: Enhancement of Export Development Fund (EDF) (Date: 23-12-2015)	Total volume of EDF for single member of BTMA increased from \$15.00 million to \$20.00 million.
FE Circular No. 17: Enhancement of Export Development Fund (EDF) (Date: 19-06-2016)	Total volume of EDF for single member of BGMEA increased from \$15.00 million to \$20.00 million.
Source: summarized from www.bangladeshbank.org.bd	

Appendix 2

Table 4.1: Eligible Entities, Purpose and Amount of EDF Facilities		
Member Mills of BTMA	Bulk import of raw cotton or other fibers against deemed exports (Local deliveries of yarn to manufacturer-exporters against inland BTB LC in foreign exchange)	The amount in foreign exchange realized against inland back to back LCs over the past twelve months, or ii) USD 20 million, whichever is lower.
Member Mills of BGMEA	input procurement for a manufacturer-exporter against an export LC/ firm export contract	20.00 million
Member Mills of BKMEA	input procurement for a manufacturer-exporter against an export LC/ firm export contract	15.0 Million
Member Mills of BGAPMEA	bulk import of raw materials for local deliveries of garment accessories to manufacturer-exporters against inland back to back LCs in foreign exchange	The amount in foreign exchange realized against inland back to back LCs over the past twelve months, or ii) USD 2 million, whichever is lower
member mills of the Bangladesh Plastic Goods Manufacturers and Exporters Association (BPGMEA)	bulk import of raw materials for local deliveries of garment accessories to manufacturer-exporters against inland back to back LCs in foreign exchange	value realized in foreign exchange against inland back to back LCs and export LCs/ contracts over the past twelve months, or (ii) USD 1 million (five hundred thousand), whichever is lower.
Manufacturer-exporters of Leather goods & Footwear Manufacturers & Exporters Association of Bangladesh (LFMEAB)	input import needs of finished leather/leather goods/ ceramic ware manufacturer-exporters	Bulk imports against estimated requirements for up-to one year, based on their export performance over the preceding year.
Bangladesh Ceramic Wares Manufacturers' Association (BCWMA)	input import needs of finished leather/ leather goods/ ceramic ware manufacturer-exporters	
Member mills of BDYEA	Bulk import of unprocessed yarn and chemicals for processing yarn for local deliveries to manufacturer exporters against inland back to back LCs in foreign exchange	Value realized in foreign exchange against inland back to back LCs and export LCs/ contracts over the past twelve months, or (ii) USD 15 million ,whichever is lower.
Type C industries in Export Processing Zones	back to back import LCs for input procurements	According to designated Category.
Source: Bangladesh Bank		

An Analysis of Determinants of Job Satisfaction of Private Commercial Banks in Bangladesh

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1. Introduction

Job satisfaction of employees means positive feeling towards the job and arises when job characteristics are in agreement with job demands of the employees (Locke, 1976). Job satisfaction has some significant relation with mental health of the employee. It generates the goodwill of an organization. Job satisfaction of the employees reduces absenteeism, and enhances the employee's morale and productivity. It develops innovative ideas among the employees of the organization. If an employee satisfying with his job may become more loyal towards the organization. An employee is satisfied with the organization, if he gets what he expects. Job satisfaction refers to the attitude or feelings of the employees regarding job. Generally it is the satisfied employee who has the maximum effectiveness and efficiency in his job. Employees are concerned more about pay rather than other variables of job satisfaction which affects their level of satisfaction, such as salary, autonomy, working environment, among others.

Job satisfaction is the difference among the employee's expectations and wants related to their job, and what is really offered to them. Job satisfaction is significant not only for employees but also for the development of any organization. If an employee has not been satisfied with his job then he will not be loyal with the organization. Job satisfaction is defined as the extent to which employees like their jobs (Spector, 1997). Several studies discuss the various aspects of the employees' job satisfaction such as job, salary levels, promotion opportunities, and relationship with co-worker.

There are thirty nine Private Commercial Banks (PCBs) which are now operating in Bangladesh (Activities of Bank, Insurance and Financial Institutes, 2014-2015). PCBs take active part in the development of our economy. Many PCBs have upazila and district level branches. There are lots of employees working in PCBs and apparently it seems that the satisfaction levels of those employees are high. This paper is designed to evaluate the determinants of job satisfaction of employees of PCBs in Bangladesh.

The rest of the paper is organized as follows. Section-2 provides a brief literature; Section-3 explains major job-related motivators; Section-4 details methodology; Section-5 discusses results and Section-6 concludes the paper.

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2. Review of Literature

Parvin (2011) identifies the indicators that can influence job satisfaction level of employees in Bangladesh. Result reveals that working conditions, fairness, promotion and pay are the main indicators that affect employee's job satisfaction. Wahab (2016) examines the relationship among job satisfaction, job performance and employee engagement in an explorative way. Result show that the employee engagement is directly related to the employees' job satisfaction for increasing productivity. The employees' dissatisfaction can cause lower profit margins, poor customer service, increasing employee turn-over and decreasing competitive edge.

Parvaiz, *et al.*, (2015) evaluate the relation between role-conflict, role-overload, leadership support and organizational politics with job stress. Results show that all those variables are positively related with job stress. Mehr, *et al.*, (2012) explore the relationship between job satisfaction and organizational culture in staffs and experts of physical education officers of Mazandaran Province in Iran. The outcome shows that there exists no significant relation between job satisfaction and organizational culture in physical education office staffs.

Khartabiel, *et al.*, (2014) emphasize banks employees' job satisfaction as a result of customer's satisfaction of the employees in banks existing in the city of Girne-North, Cyprus. Results reveal that the banking functions, training programs, wages, communication within the bank, team work, job satisfaction, promotional opportunities, appropriateness of the bank, customer loyalty and provision of high quality services to clients are important job satisfying factors.

Thangaswamy (2016) examines employees' job satisfaction in State Bank of India in Kanyakumari District. Result reveals that employees are satisfied with their job. Shegal (2012) compares the job satisfaction of the employee's bank of Shimla in India. Findings reveal that there are not much differences of job satisfaction among the employees of the Axis and the UCO banks. But, in the case of job security, salary offered to employees in relation to their experience and benefits given to the employees, the satisfaction level differs for both banks. Arif (2012) analyzes employee job satisfaction on the organizational citizenship behavior in the banking sector in Pakistan. It reports that both job satisfaction and organizational citizenship behavior are highly correlated.

Shanmugapriya (2016) explores the determinants of job satisfaction of bank employees in an Indian context. The outcome shows that employee's personal characteristics, namely gender, branch location, educational qualification, family background, residential status, migrated family, monthly emoluments and total earning members in the family are significantly and positively correlated with the employees' level of job satisfaction. On the other hand, employees' personal attributes namely age, marital status, spouse status, type of family and family size are significantly and negatively correlated with the employees' job satisfaction.

Osei-Bonsu (2014) analyzes the role of change in management on employee's job satisfaction in Ghana's banking sectors. Results suggest that employees' involvement in the process is limited in case of adequate information. It is revealed that the change has a positive impact on employees' job satisfaction.

Osibanjo (2012) examines the relation between human resource management practice and employee job satisfaction from the Nigerian banking sector. This study evaluates the effect of human resources management practices on employees' job satisfaction. Result suggests that human resources management practice has an impact on employee job satisfaction.

Rao, *et al.*, (2014) analyze employee's job satisfaction on the job performance of the national bank of Ethiopia. The study reveals that there presents a positive relation between job satisfaction and job performance. So, good working condition, reasonable pay system, fair promotion and appropriate work affect employee job performance.

Bora (2014) examines job satisfaction of bank employees of Jorhat in India. Findings suggest that degree of employees' job satisfaction of private sector banks is comparatively slightly lower than in the public sector banks. Employees of the private sector banks feel that their job is not secure.

Nasser, *et al.*, (2014) assess the role of demographic factors on employees job satisfaction among banking employees of Kingdom of Saudi Arabia. Results show that manager and subordinate staff are found to differ significantly in terms of job satisfaction. Again, the younger and older in age group, and high and low work experienced group of bank employees do not differ significantly with job satisfaction. The married and the single group of bank employees differ significantly in terms of job satisfaction.

Richard, *et al.*, (2009) identify a model of employee job satisfaction based on gender differences in the US extension employees. Results reveal that no difference exists in the antecedents of employees' job satisfaction between genders.

From the review of literature, it is evident that there are few researches which deal with job satisfaction of employees of banking industry in Bangladesh. Hence this study provides some new insight regarding the banking satisfaction in Bangladesh.

3. Major Job Related Motivators

3.1 Experience

Employee's job experience means how many years employees are working in the organization. It is assumed that the more experience the employee is the more satisfied the employee may be. Different studies reveal that employees job experience or the tenure acts as an independent variable (Borjas, 1979).

3.2 Salary

According to Al-Zoubi (2012), an increase in salary ultimately enhances the level of job satisfaction. Again, employees' salary positively relates the organizational performance (Curral, 2005). So, employees' job satisfaction is positively related with salary (Muhammad, *et al.*, 2010). The link between salary and job satisfaction is well-established (Herzberg, *et al.*, 1957).

3.3 Financial Benefits other than Salary

It means that only salary cannot satisfy the employees need, rather employees expect other benefits than salary. Fisher (2003) categorizes reasons to quit in two stages: one is external and the other is internal factor. External factors consist of unemployment rate and employees' perceptions of the external job opportunities available to them. Hong, *et al.*, (1995) find that the performance of employees on benefit is changed according to their personnel characteristics.

3.4 Work-Load

It is assumed that employee's work load negatively relates the employees' job satisfaction. Employee's increased work-load results in decreased level of work satisfaction. Any decrease in work satisfaction is particularly considered to be related to such problems as uneasiness, tension, anger, depression and fatigue in the working place (Beehr, *et al.*, 1992). These problems directly affect work performance (Matrunola, 1996).

3.5 Job Security

If the employee feels that it is not easy for the management to terminate him easily, then his job satisfaction becomes high. On the other hand, if he thinks that he can be terminated without good reason, then he remains panicked. So, job security enhances the level of job satisfaction (Souza-Poza, 2000).

3.6 Working Environment

It is a recognized issue that working environment is a considerable factor of job satisfaction. The employee's working environment refers at which employees work. The working environment consists of the indoor and the outdoor facilities equipped for the employees. Working environment means the physical aspects of a workplace environment that has a positive impact on the productivity, health and safety, comfort, concentration and morale of the employees. Important facets in the working environment that should be considered include building design and age, workplace layout, workstation set-up, furniture and equipment design and quality, space, temperature and ventilation. It is believed that employees' working environment directly affect the employees' level of job satisfaction. So the conducive working environment influences the service climate and ultimately enhances the job satisfaction (Ram, *et al.*, 2011).

3.7 Co-worker Relation

Co-worker relation creates positive working environment in the organization. It actually generates enhanced communication, creates respect, builds trust among the employees of the organization. According to Berman, *et al.*, (2002), workplace friendship or the co-worker relation or non-exclusive voluntary workplace relation that improves mutual trust commitment, reciprocal liking, shared interest and values. Again, it reduces feeling of insecurity and uncertainty among the employees (Hamilton, 2007).

3.8 Branch Computerization

If the employees are working in manual process then it takes time to execute the task, and ultimately their job satisfaction becomes low. The opposite happens if the employees are working with the help of computer. By using computer, employees' job becomes very much flexible and takes a little time to execute. Agboola (2001) studies the impact of computer automation on the banking services in Lagos and discovers that electronic banking has tremendously improved the services of some banks in Lagos. The study however restricts to the commercial center of Nigeria and concentrates on only six banks.

3.9 Hour Worked

Employee's hour worked reports negative relationship with job satisfaction (Clark, *et al.*, 1996). Sometimes, hour-worked creates positive impact on the job satisfaction when employees feel that their job is pleasant and employees get essential support to do their job.

3.10 Autonomy

Autonomy in job is defined as the degree to which the job offers considerable liberty, proving free hand choice to the individual in scheduling the work and defining the means to achieve the tasks (Hackman, *et al.*, 1975). More specifically, it can be defined as "the freedom and choice inherent in the job to execute numerous tasks (Brey, 1999). An autonomous employee can make or take action which he/she feels right for their organization. Sousa-Poza, *et al.*, (2000) comment that the relation between the employee job satisfaction and autonomy is positive.

3.11 Job Fit

The eleventh determinant is the job fit. It refers whether the employees have required skill and acclimatized well with their job in their working place. Green (2006) comments if the employees, who are not acclimatized while they execute a certain job in the right place, has a detrimental effect on the job satisfaction. Although employees work in their working place with required skill and capabilities, they murmur because they are not acclimatized well with their works.

3.12 Job Rotation

According to Jorgensen (2005), job rotation can be defined as "working at different tasks or in different position for a set period of time". Job rotation is a process which helps enhance motivation, develop and enhance productivity in humanized resources and uplift organization performance (Soltani, 2000).

3.13 Supervisor Support

It is defined as the extent to which supervisor values their employees' contributions and care about their well-being. Strong supervisor support improves the quality of the employment and has direct impact on job satisfaction, thus results in decrease of employees' turn over and of course better family balances (Bhate, 2013).

3.14 Timely Vacation

Employees sometimes get exhausted or tired while they work over longer period of time. If the employee gets vacation from their regular duties and responsibilities, then after coming back from the vacation employee feels recharged. We expect a positive relationship between timely vacation and the employee's job satisfaction. Happier and healthier employees usually mean greater productivity. Because of this, many employers choose to offer vacation as a benefit of employment.

3.15 Performance Evaluation

The term 'performance evaluation' refers the process in which employees are evaluated regarding their performance. Employees' performance evaluation technique is a major concern for job satisfaction. Employees with high quality performance appraisal experiences are more likely to be satisfied with their job. Again, performance appraisal is considered to encourage employee performance.

3.16 Prize Distribution

Sometimes organizations distribute prizes among their employees whether they are eligible or not considering the exact proportion. So, it creates impact on the employees' job satisfaction.

3.17 Promotional Opportunity

Employees' promotional opportunity means whether employee gets promotion timely. Employees who get promotion in the past two years and the employees who expect promotion in the next two years reports higher job satisfaction (Kosteas, 2004). Again, opportunity for promotion is positively related with job satisfaction (Sousa-Poza, 2000).

3.18 Monotonous Job Nature

Employees with monotonous job environment feel dullness at work. Hence, stimulating and interesting jobs are more satisfying than tedious and monotonous jobs. Melamed, *et al.*, (1995) find an inverse association between subjective monotony of work and job satisfaction. Monotony may be a situation where an individual is compelled to continue in a particular activity in spite of his reluctance. It can be considered an unpleasant state arising out of work which the worker seeks to avoid as far as possible. Routine and repetitive work or lack of variety produces monotony. It is a characteristic of the relationship between the job and the worker at a particular time.

3.19 Job Knowledge

Job knowledge refers the required level of knowledge to execute a certain job. Employee needs to acquire a certain level of knowledge of job for his job life. Employees who have proper job knowledge can execute a certain job easily.

3.20 Corporate Social Responsibility (CSR)

According to Carroll (1999), "CSR refers to the obligations to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society". CSR is to make an effort for the society and the organization. Bronn, *et al.*, (2001) define CSR as "the implementations and participation policies of a company for social benefit that are above and beyond the legal responsibilities". All these definitions are to give an emphasis on the direction that represents more than the organizations' economical and legal responsibilities.

4. Methodology

4.1. Sample and Data Collection Methodology

Primary survey data are used and the survey is conducted during the period from December 2014 to November 2015. A total of bank 250 employees are taken from Islami Bank Bangladesh Limited, Dutch Bangla Bank Limited and Jamuna Bank Limited based on purposive cluster random sampling covering Dhaka, Rajshahi and Khulna divisions. The job satisfaction questions contain five point Likart scale ranging from ‘very much dissatisfied’ to the ‘very much satisfied’.

The closed ended question is coded 0 for no and 1 for yes, and job related question is coded -2 for ‘very much dissatisfied’, -1 for ‘dissatisfied’, 0 for ‘neutral’, 1 for ‘satisfied’ and 2 for ‘very much satisfied’. After that average is taken for each question for getting overall job satisfaction. Median is calculated. Below median is taken as 0 and equal, and above median is taken as 1 for constructing dummy variable. This overall job satisfaction is taken as dependent variable and other variables are taken as independent variables.

4.2 Probit Model

The probit model constrains the estimated probabilities to be between 0 and 1 and relaxes the constraints that the effect of independent variable is constant across different predicted value of the dependent variables. In common parlance, the probit model assumes an s-shaped response curve such that in each tail of the curve, dependent variable, $Pr(Y_i=1)$, responses slowly to the changes in the independent variable. But toward the middle of the curve, the dependent variable responds more swiftly to the changes in the independent variable. The model assumes that while we observe the value of 0 and 1 for the variable Y, there is a latent unobserved continuous variable Y^* that determines the value of Y. Y^* can be specified as follows:

$$Y^* = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_k X_k + u_i \quad (1)$$

Here, $Y_i=1$ if $Y^*>0$, then $Y_i=0$, otherwise. Again, $X_1, X_2, X_3, \dots, X_k$ represents the vector of variables and u_i represents the random disturbance term. Now from equation (1), we obtain:

$$Pr(Y_i=1) = Pr(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_k X_k + u_i > 0) \quad (2)$$

Rearranging term yields

$$\begin{aligned} Pr(Y_i=1) &= Pr(u_i > -(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_k X_k)) \\ &= 1 - Pr(u_i < -(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_k X_k)) \\ &= 1 - F(-(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_k X_k)) \end{aligned} \quad (3)$$

Where, F is the cumulative density function of the variable. If we make the usual assumption that u is normally distributed we have:

$$\begin{aligned} Pr(Y_i=1) &= 1 - \Phi(-(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_k X_k)) \\ &= 1 - \Phi(-X_i \beta) \Phi(X_i \beta) \end{aligned}$$

Where Φ represents the cumulative normal distribution function.

5. Results Discussion

Table 1 shows descriptive statistics of different job related variables of PCBs employees. The mean of overall job satisfaction is 0.56, median is 1, standard deviation is 0.49, maximum is 1, minimum is 0, skewness is -0.25 and lastly, kurtosis is 1.06. In case of salary, the values of mean, median, standard deviation, maximum, minimum, skewness and kurtosis are 1.08, 2, 1.36, 2, -2, -1.22 and 3.04 respectively. For working environment, the values of mean, median, standard deviation, maximum, minimum, skewness and kurtosis are 0.61, 1, 0.75, 2, -2, -1.08 and 4.17 respectively.

Table 1: Descriptive Statistics of the PCBs Employees (n=250)

Variables	Mean	Median	Max	Min	Std. Dev.	Skewness	Kurtosis
Overall job satisfaction	0.56	1.00	1.00	0.00	0.49	-0.25	1.06
Working experience	5.79	4.00	19.00	0.00	4.73	1.44	4.53
Salary	1.08	2.00	2.00	-2.00	1.36	-1.22	3.04
Financial Benefits other than Salary	0.60	1.00	2.00	-2.00	0.96	-1.47	4.60
Work load	-0.02	0.00	2.00	-2.00	1.31	0.05	2.08
Job security	-0.22	-1.00	2.00	-2.00	1.19	0.64	2.37
Working environment	0.61	1.00	2.00	-2.00	0.75	-1.08	4.17
Co-worker support	1.09	1.00	2.00	-2.00	0.60	-1.68	11.32
Branch computerization	0.78	1.00	2.00	-1.00	0.80	-0.91	3.56
Hour worked	0.10	0.00	2.00	-2.00	1.34	0.05	2.00
Autonomy	-1.69	-2.00	2.00	-2.00	0.74	2.85	11.59
Job Fit	0.67	1.00	2.00	-2.00	0.73	-1.16	4.73
Job rotation	0.47	1.00	2.00	-2.00	0.92	-1.01	3.25
Supervisor support	0.67	1.00	2.00	-2.00	0.99	-0.71	2.64
Timely vacation	-0.87	-1.00	2.00	-2.00	1.16	0.82	2.60
Performance evaluation	0.64	1.00	2.00	-2.00	0.97	-1.08	3.85
Prize distribution	0.77	1.00	2.00	-2.00	0.79	-2.22	8.40
Promotional Opportunity	-0.06	1.00	2.00	-2.00	1.24	-0.28	1.56
Monotonous job nature	0.67	1.00	1.00	0.00	0.46	-0.75	1.56
Job knowledge	0.72	1.00	1.00	0.00	0.44	-1.00	2.00
CSR	0.90	1.00	1.00	0.00	0.30	-2.66	8.11

Table-2 shows results of binary probit model. Experience is statistically significant at 1 percent level. This tells us the positive relation between the employees' year of service and job satisfaction. Again, estimated coefficient reports 67 percent increase in overall job satisfaction with the 1 percent increase in experience. It reveals that employees are satisfied with salary. So, it clarifies that PCBs employees are given handsome salary. Overall job satisfaction of PCBs employees increases by 61 percent if salary increases by 1 percent.

The coefficient of the variable- financial benefits other than salary shows statistically significant result at 5 percent level. This indicates a positive relation between financial benefits other than salary and overall job satisfaction. Results report that overall job satisfaction increases by 90 percent with 1 percent increase in the variable as it is seen by its estimated coefficient.

Work-load of employees shows a statistical significance at 1 percent level. It indicates a positive relation between work load and employees' overall job satisfaction. Although it is expected that work-load negatively affects the employee's overall job satisfaction but employees are satisfied due perhaps to presence of other variable of job satisfaction.

Table 2: Results of Binary Probit Model

Variable	Coeff.	Variable	Coeff.
Experience	0.6776*	Job Fit	-0.6260
Salary	0.6142*	Job Rotation	0.5516***
Financial Benefits other than Salary	0.9004**	Supervisor Support	0.2192
Work Load	0.6627*	Timely Vacation	0.6514*
Job Security	0.3523***	Performance Evaluation	1.0093*
Working Environment	1.2273*	Prize Distribution	1.2003**
Co-worker Relation	1.1193	Promotional Opportunity	0.6608**
Branch Computerization	0.3153	Monotonous Job Nature	0.3784
Hour Worked	0.7525*	Job Knowledge	0.9244

Variable	Coeff.	Variable	Coeff.
Autonomy	0.5027***	CSR	-0.2098
No. of Observation	250	LR statistic (20 df)	281.6231
Sum squared resid	7.9090	Probability(LR stat)	0.000000
Note: *, ** and *** indicate 1 percent, 5 percent and 10 percent levels of significance respectively.			

For the explanatory variable- the employee's job security, the result is statistically significant at 10 percent level. It indicates that employees are satisfied with the level of job security. This reveals that they feel secured regarding their job. Estimated co-efficient shows that the overall job satisfaction increases by 35 percent with 1 percent increase in job security.

Response category-working environment shows significant result at 1 percent level. It shows a positive relation between overall job satisfaction and working environment. Employees are satisfied with the environment they are working with. PCBs are being modernized with up-to-date technologies. Young, dynamic and enthusiastic employees are being recruited. For these reasons, working environment is improved. The overall job satisfaction is increased by 122 percent with 1 percent increases in working environment.

Co-worker relation reveals no significant relation with job satisfaction. Computerized environment (branch computerization) is not a statistically significant variable. So, employees report dissatisfaction with this variable. Although it is hypothesized that employees are well educated with computer, but due to presence of other factors like handing so many software, low speed of the internet and inadequate infrastructure, no significant statistical evidence is found that affects employees' overall job satisfaction.

Results report significant relationship between the overall job satisfaction and the employees' hour-worked. It is hypothesized that the longer the hour worked the more dissatisfied the employees. But, employees are satisfied with their job due to some intrinsic and extrinsic factors provided by the banks management. For this reason, employees are motivated and inspired while they execute their job. In case of marginal effect, the estimated coefficient of binary probit regression reports 75 percent increase in overall job satisfaction with the 1 percent increase in the explanatory variable.

Table-2 reveals a positive relationship between autonomy and the job satisfaction. When we consider marginal effect, estimated coefficient reports 50 percent increase in the overall job satisfaction level with the increase in 1 percent of this control variable. Another variable is the employees' job fit which shows no significant relationship between employee's job fit and job satisfaction. So, in most cases, the employees are not satisfied with this variable. Employees' marginal effect reports no significant evidence.

Marginal effect reports that employees' overall job satisfaction increases by 55 percent with 1 percent increase in the job rotation, as it is seen from the estimated coefficient. No significant relationship between job satisfaction and the supervisor support of the employees is found. Employees are not getting due support from their supervisor and, as a result, dissatisfaction prevails.

Regression result presents a positive relationship between the employees' job satisfaction and employees' timely vacation. Estimated coefficient reports 65 percent increase in the overall job satisfaction with the 1 percent increase in the respective control variable.

We find that performance evaluation affects the employees' job satisfaction positively. Employees think that their performance is evaluated by the management effectively and neutrally. The estimated coefficient of the overall job satisfaction increases by 100 percent with increase in 1 percent of this variable. The result indicates that management practices are good for performance evaluation system.

Regression results indicate that employees feel positive regarding prize distribution. Employees' promotional opportunity is an important job related variable. Result reveals that promotional opportunity has significant impact on the employees' job satisfaction at 5 percent significant level. Management of the PCBs provides their employees with better promotional opportunity. The estimated coefficient of employees' promotional opportunity of employees reports 66 percent increase in overall job satisfaction with 1 percent increase in the variable. The eighteenth, nineteenth and the twentieth response variable - monotonous job nature, job knowledge and Corporate Social Responsibility (CSR) have had no significant impact on the overall job satisfaction for the PCBs employees.

5. Conclusion

This paper aims to assess the determinants or motivators associated with job satisfaction of employees of three Private Commercial Banks (PCBs) in Bangladesh using primary survey data from 250 respondents of three divisions applying probit model. Results provide significant impact on the overall job satisfaction of different motivators. Results exhibit that motivators like experience, salary, other benefits than salary, work-load, job security, working environment, hour worked, autonomy, job rotation, timely vacation, performance evaluation, prize distribution and promotional opportunity have had significant impact on the employees' overall job satisfaction. The rest of motivators like co-worker relation, branch computerization, job fit, supervisor support, monotonous job nature, job knowledge and Corporate Social Responsibility (CSR) show no significant impact on the employees' overall job satisfaction. Working environment ranks the highest job satisfaction motivator and supervisor support the lowest job satisfaction motivator. On the other hand, prize distribution is found to be the second highest motivator to job satisfaction.

Further, employee experience, salary, financial benefits other than salary, work-load, job security, working environment, hour worked, autonomy, job rotation, timely vacation, performance evaluation, prize distribution and promotional opportunity all report positive marginal effects. This study reports marginal effect that ranges from 22 percent to 123 percent. We can conclude that the private commercial banks should enhance working environment and hence increase productivity of the employees through proper prize distribution system for their good works. Further, policies leading to the improvement of the employee-non-satisfying factors could enhance the level of satisfaction of the employees and enhance bank's performance and profitability.

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Effect of Human Resource Practices in the Employees' Intention to Stay of Nepalese Banking Sector

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Introduction

In this competitive and globalized era, the importance of employees to an organization as a resource is increasing. Human resource now is regarded as most important capital to the organizations. Organizations are becoming well aware of designing their goals in such a way that they could also equally serve the personal goals of employees. The development plan of the organizations must address the employees' career growth opportunities. There must be a mutually beneficial human resource policies and practices with the organization for their employees to have an enduring relationship, which provides competitive advantage, facilitates job satisfaction to the employees and increases productivity and efficiency. It is believed that, employees intend to stay longer if they find proper human resource policies and practices in their working environment. Some researchers have defined the employees' intention to stay as the reflection of the probability where employees do not change their job in within a certain period of time (Sousa-Poza & Henneberger 2002, p.113). They explained that turnover intention can be voluntary or involuntary. Voluntary turnover is about a process where an employee making decision on staying or leaving the organization. Moreover, involuntary turnover is a situation where an organization has the control over the employee's decision in staying or leaving the organization.

The researchers commented where high turnover brings destruction to the organization such as direct and indirect cost (Long, Thean, Ismail & Jusoh 2012, p.575). Direct cost is the cost, which occurred in selecting, recruiting, and training of new employees (Staw 1980, p.253). According to Dess and Shaw (2001, p.446), indirect cost is the cost of learning, pressure on employees and loss of social capital. In an organization, what caused an employee to leave or intend to leave is always a big question.

Organizations should develop human resource policies and strategies, including selection and recruitment, training and development, and performance management, that reflect their beliefs and principles as well as maintaining acceptable relationships between management and employees. However, some human resource departments merely devise policies that deal only with current problems or requirements (Delery & Doty 1996, p.808).

Problem Statement

Employees' intention to leave shows a serious problem to an organization in terms of losing of talents, additional employment and training costs. There are several factors that lead to employees' turnover intention. A high employees' turnover is always a serious threat and severely affects the efficiency and productivity of the company. Employees play an important role in the productivity of an organization. They are the backbone of the organization, without employees, organizations can not at all operate. HRM practices are one of the important factors that endure the employees' intention to stay in the current job. Benefit packages, training, performance management system, career development programs and relations management system are very widely and most commonly established determinants of what an organization practices as its HR policy and are very effective tools for the long-term retention of the employees. These determinants may or may not equally work in all type of economy, time and context was to be tested.

The Objectives

The basic objectives of this research are:

- To explore the factors influencing employees' intention to stay in Nepalese banking organizations.
- To measure the relationship of employees' intention to stay with the HR practices of Nepalese banking organizations.

Hypotheses of the Study

Prior to the study, the following alternative hypothetical assumptions were made:

- H1a: There is significant relationship between compensation/ benefits and employees' intention to stay.
- H1b: There is significant relationship between training and employees' intention to stay.
- H1c: There is significant relationship between performance management and employees' intention to stay.
- H1d: There is significant relationship between career development and employees' intention to stay.
- H1e: There is significant relationship between employee relations and employees' intention to stay.

Review of Literature

It is important for HR managers to overcome employees' turnover intention. Huselid (1995), suggested that high involvement work practices could enhance employee retention. However, most examinations of retention and commitment are from the employer's point of view; as a result, new and refined programs are continuously introduced. These programs are expected to have a positive impact on employee retention and commitment; therefore, investments in high involvement work practices may promote of a positive work climate that may result in low turnover intention. Above all, organizations have implemented HR practices and policies to reduce unnecessary and unwanted employee turnover (Guthrie 2001, p.189).

In contemplating the future prospects of HRM, it is worthwhile to examine the developments and directions of HR policies in terms of their relevance to the contemporary workforce, especially in the area of the attraction and retention of employees. Effective HRM practices have been deemed by many researchers to be of utmost importance in providing firms with competitive advantages and the ability to operate effectively within a competitive landscape (Huselid 1995).

Employees' Intention to Stay

Employees' intention to stay can be defined as an intention of an individual not to be separated voluntarily from an organization. The intention to turnover is the last part in a sequence of withdrawal cognition, and an intermediary between evaluations that are related to the decision to leave and the actual turnover in process of turnover. Job dissatisfaction is a strong predictor of intentions to quit (Price & Mueller 1981, p.1)

Employees' intention to stay refers to as the propensity to leave, intent to quit, turnover intention, behavioral commitment and attachment (Halaby 1986, p.636; Mueller, Iverson & Price 2001, p.191). Several studies have revealed that this concept whether it was called 'intent to stay' or 'propensity to leave', it was clearly the most important determinant of turnover (Tett & Meyer 1993, p.262; Igharia & Greenhaus 1992, p.480). According to Steel and Ovalle (1984, p.682), Carsten and Spector (1987, p.379) and Iverson (1996, p.146), intention to stay had a strong negative relationship with turnover. Dalessio, Silverman and Shuck (1986, p.261) have emphasized that more concern should be given on intention to stay rather than turnover, as whenever an employee exit, an organization has to incur the cost of recruiting and maintaining another employee.

Employees' turnover intention is shown by three signals (Jaros 1997, p.317). The signal is whether employee thinks of quit, searches for other employment opportunities and forms an intention to leave. In intention to leave, employees have the thinking to leave or stay in the current employer organization. Anyway, there is difference between turnover and turnover intention. Turnover is the actual action that employees had leaved the company and move to other company for new employment relationships (Price 2001, p.600). On the other hand, turnover intention is behavior that employees thinking of leaving and terminate for the current employment relationship, which is not actual action to leave the current job (Cotton & Tuttle 1986, p.65). Increasing job satisfaction and organizational commitment are good strategies for increasing intention to stay (Cohen & Golan 2007, p.416). Intentions are important outcomes of socialization. Therefore, if employees intend to leave the organization it means the organization did not meet their demands. There was also researchers commented where high turnover brings destruction to the organization such as direct and indirect cost (Long 2012, p.580).

Compensation and Benefit

Compensation is the reward that employee receives from organization for service and effort they put. Reward consists of financial and non-financial reward. Financial reward having monetary value, it is made up of fixed, variable pay and employee benefits. On the other hand, non-financial reward is consider having no monetary value and made up of recognition, praise, achievement and personal growth (Opote 2007, p.4). Employee compensation and benefits include all form of pay, rewards, bonuses, commissions, leaves, recognition programs, flexi work hours and medical insurance (Sherman & Snell 1998).

A finding in a research study by Shahzad, Bashir and Raymay (2008, p.309) revealed a positive relationship of reward practices with the performance of university teachers in Pakistan. In a study in Hong Kong and China, it was revealed that compensation components are important factors to retain and motivate employees (Reddy 1996). Evidently a study conducted on managing compensation and rewards through organizational pay, the human resource department can use a compensation strategy to strengthen the business strategy by enhancing individual performance. This may in turn negate turnover (Huselid 1995).

Pinder (1984) opine that salary strategies and job enrichment strategies were positively related to job satisfaction and thus have also a positive effect on intention to stay. When high performers are inadequately rewarded, they quit. It is their opinion that, the jobs which able to provide adequate financial incentive are more likely to make employees stay with the organization (Mbah 2012, p.278). Therefore, desire to leave and ease of leaving the organization are affected by reward. Besides that, kind and level of compensation and benefit an organization offers influences who is attracted to work for the organization and who will continue to retain in work. The organizations, which give the most compensation and benefit, tend to attract and retain most People (Gerhart & Milkovich 1992).

Training

Training is a method, which can allows the employees from an organization to acquire job related knowledge and skills and also improves and changes the attitudes and behaviors of employees in order to meet the objectives of organizations (Noe 2002). The competencies include skills and knowledge. Effective training can increase the organization efficiency and production (Harris 1990).

A research on staff intention to stay results revealed that constant training and development to bring staff to an acceptable level of performance and keeping them engaged actually has a significant link and relation to job satisfaction, morale and optimism thus impacted on employee's intention to stay (Chow, Haddad & Singh 2007, p.83). Another research conducted on the influence of employee development in predicting intention to stay revealed that one of the variables of human resources practices of providing continual training and development programs to the employees supported

the hypothesis that training and employee development has a direct link to staff intention to stay (Mohamad & Aizzat 2006, p.40). Another research conducted in University of Texas show that on-the-job training was positively related to organizational commitment and negatively related to intention to turnover (Benson 2006, p.189).

Several researches have stated that, training is an important factor to increase intention to stay among employees at workplace (Reddy 1996). Chang (2006, p.377) explained that the more training and professional development provided for employees will have higher intention to stay. Other than that, companies which provided training and development for the employees to improve their skills and knowledge will have higher intention to stay compare with the companies which were not provided any training and development for the employees (Martin 2003, p.400). On the other hand, there have some studies stated that training and development practically increase the employee intention to stay because of their skills and knowledge they can get better opportunity from other companies (Haines Jalette & Larose 2010, p.241).

Performance Management

Performance appraisal is defined as formal system of review and evaluation of individual or team task performance (Mondy 2010). This system identifies the development goals and also the plan for achievement of the particular goals. Ahmad, Lemba and Ismail (2010, p.99), found that the system is designed mainly to evaluate, manage and made the improvement on employees' performance. Performance appraisal is playing an important role in assessing employees and develops their competencies, boost performance and distribute reward (Fairris 2004, p.592). It also served as motivation tool to identify the individual needs when it is practiced regularly in the organizations.

Performance management can focus on the performance of an organization, a department, employee, or even the processes to build a product or service, as well as many other areas. It is acknowledged that a lack of performance appraisal can have adverse effect on employees' motivation and contribute to employees' turnover intention (Abdullah, Bilau, Enegbuma, Ajagbe & Bustani 2012, p.35). Whenever performance appraisal is perceived by employees' to have organization political motives, this affect their job satisfaction and prone to turnover intention (Poon 2004, p.330). Another study revealed that a better understanding of how employees' job performance affects their turnover decisions and how organizations can control turnover through integrated performance management system that includes rating by supervisors and enhanced management of better and poor performance employees through a comprehensive appraisal system (Zimmerman & Darnold 2006, p.144).

Career Development

Career development is one of the main human resource characteristics that provide the opportunity for employees to continuously be a part in the diverse activities in the organization that develops employees. Career development activities include succession planning, talent management, leadership development, structured career management and self-assessment (Chang 1999, p.1259).

Career development in an organization should be viewed as a very dynamic process that attempts to meet the needs of managers, subordinates and the organization. It is the responsibility of managers to encourage employees to take responsibility for their own careers, offering continuous assistance in the form of feedback or individual performance and making information available from the company about the organization, career opportunities, positions and vacancies that might be of interest to the employees (Cook 2008). It cannot be denied that in career development process, the organization must supply adequate information about its mission, policies, and support for self-assessment, training and development. It is important to note that significant career growth can occur when individual contribution combines with organization opportunity. Increase in skills and the opportunity to manage their career successfully helps to retain valued employees (Sherman & Snell 1998).

A study revealed that depending upon which stage of their career the employees have reached, the larger the gap, the higher the levels of both turnover intention and job dissatisfaction (Chen, Chang & Yeh 2004, p.424). Another study in US concluded that professional growth related to career progression was related to intention to stay and thus the companies were advised to have regular career advancement opportunities and professional growth for its staff in a bid to retain them (Muliawan, Green & Robb 2009, p.132). Furthermore, another study revealed that the existence of career advancement within the organization actually increases intention to stay. Similar study by University of Technology MARA, Malaysia revealed that besides having good HR practices, other predictors such as career advancement program is essential to negate turnover intention (Helmi 2006). Similarly, CHANG, CHOU and CHENG (2007, p.110), claimed that if organization satisfies the career need of the employees at different career stages, then employees' commitment towards organization may increase and their intention to stay may also increase.

Employee Relations Management

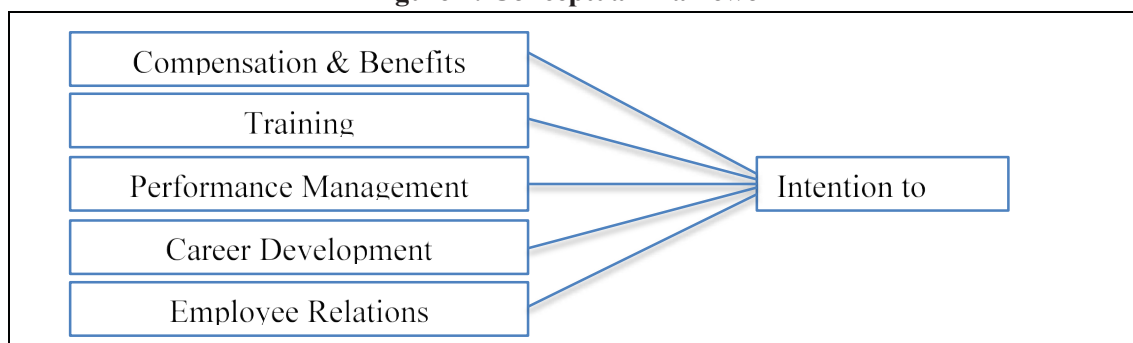
Employee relations in an organization are simply described as maintaining a healthy working relationship between management and employees. This contributes and sustains a satisfactory productivity, motivation and high morale work environment that enhance job satisfaction for the employee and meet goals of the organization. (Sherman & Snell 1998).

A study in China revealed that perceived supervisory support has a direct relation to employees' intention to stay (Newman 2012, p.12). Another study on 1187 registered nurses revealed that unsupportive work environment and poor leadership quality which is an indicator of poor employee and employer relationship have implication for nurses to resign in a year (Van der Heijden van Dam & Hasselhorn 2009, p.616). Another study carried in Norway also results a strong positive relation between employee relations as an HR practices against intention to stay (Kuvaas 2006, p.514).

Conceptual Framework

Stewart and Brown (2009), stated that the employees are less likely to have intention to leave, rather to stay longer with the current organizations when they perceive positive HRM practices such as job freedom, job security and better pay. Hence, the HRM practices and intention to stay have been surveyed in this research. After a careful study of the related literature, five independent variables Compensation and Benefits, Training, Performance Management, Career Development and Employee Relation Management and one dependent variable intention to stay were chosen and attempted to test them among the employees of Nepalese banking sector.

Figure 1: Conceptual Framework



Research Design and Methodology

Research Design

The study follows both descriptive as well as inferential research design to observe the potential relationship between independent variables i.e. performance management, compensation and benefits, employee relations management, training, career development and independent variable i.e. intention to stay. The data were collected using structured questionnaires. The findings of this research are based upon the primary survey. The survey was conducted by collecting the responses

of the employees working in different Nepalese banks through self-administered questionnaire. Related secondary data were also collected and analyzed from previous literatures and researches to verify the hypotheses.

The reliability of scales is analyzed by using Cronbach's Alpha. When the Cronbach's Alpha coefficient value is above 0.60, the collected responses are regarded as significant. The Cronbach's Alpha coefficients for the study before and after factor analysis were found to be as follows.

Table 1: Comparative Cronbach's Alpha The Cronbach's Alpha Coefficient

Before Factor Analysis			After Factor Analysis		
Variables	Cb.	N.	Variables	Cb.	N.
Intention to stay	0.753	5	Intention to stay	0.745	3
Compensation & benefits	0.741	5	Compensation &	0.672	3
Training	0.875	5	Training	0.875	5
Performance Management	0.760	5			
Career development	0.871	5	Career development	0.900	8
Employee relations	0.806	5	Employee relations	0.840	4

As depicted in the above Table-1, the Chronbach's Alpha coefficient of all the variables before and after factor analysis are above 0.06, which indicates that the factors taken and surveyed in each variables were reliable for the further study.

The Population and Sample

The convenient sampling technique was used to collect the responses. Hence the population of the study includes all level employees working in different Nepalese banks. Out of 185 self-administered questionnaires distributed online (with the help of email, social media etc.) as well as personal visits, 171 errorless responses were expected to be collected but 176 responses were returned, however only 168 were completely useable for the analysis. As the size of the population was unknown, the sample size was determined by using the following formula:

$$n = \{z^2 \times p (1-p) \} / e^2$$

Where,

n = sample size

z = Confidence Level = 95 percent = 1.96

p = Percentage of Picking a Response = 50 percent

e = Error = 7.50 percent

Actual error = 7.56 percent

The questionnaire was divided into respondents' demographic information part and independent/dependent variables part. In the second part, the questions for five independent factors for dependent factor employees' intention to stay were asked using a five point Likert Scale indicating 1 as strongly disagree, 2 as disagree, 3 as neutral, 4 as agree, and 5 as strongly agree.

Statistical Analysis

The software called Statistical Package for Social Science (SPSS), Microsoft Excel, Google sheets, Google form etc. were used to analyze and interpret the quantitative data. The collected responses are coded and entered into the SPSS worksheet. Mean, Standard Deviation, Factor Analysis, Pearson's Correlation Coefficient, and Regression Analysis were used to conclude the Objectives and hypothesis of the study.

Result Analysis and Discussion

Number of Jobs Changed

Among various demographic indicators, number of jobs changed seems more relevant and has been taken for the interpretation. The result shows that the majority of respondents had changed their job two to three times, which was 51.2 percent or 86 people of respondents. Followed by 29.8 percent or 50 people who are in their first job. The study showed that 11.9 percent of respondents or 20 employees had changed their jobs four to five times and 7.1 percent of respondents or 12 employees had changed their jobs more than five times.

Factor Analysis

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.903
Bartlett's Test of Sphericity	Approx. Chi-Square	2714.408
	df	435
	Sig.	.000

The KMO measure of sampling adequacy indicated by 0.903 showed that the data collected was sufficient for the factor analysis and the Bartlett's Test of Sphericity was significant at 0.000 level, which was an indication for the further processing of factor analysis. All the diagonal coefficients of anti-image correlation matrix were above 0.50, this also supported for the factor analysis (Annex-1).

The communalities having extraction values lower than 0.50 are removed. Under the performance management variable, the factor "I regularly receive feedback on my job performance" was having with the extraction value as 0.399 (Annex-2). The factor was removed from the further analysis.

The eigenvalues analysis indicated seven factors having their respective eigenvalues greater than one, are taken for the further analysis. As shown in the Table-3, this analysis shows, these seven factors could explain or contribute 65.76 percent of the total variation (Annex-3).

Table 3: Total Variance Explained

Component	Initial Eigenvalues		
	Total	Percent of Variance	Cumulative Percent
1	11.111	37.038	37.038
2	2.139	7.128	44.166
3	1.535	5.118	49.285
4	1.49	4.965	54.25
5	1.267	4.223	58.473
6	1.13	3.767	62.24
7	1.055	3.515	65.756

The principal component analysis loaded 7 factors for the study. The factors having loading value greater than 0.45 were taken into account for the study. Since the factor "I am satisfied with the quality or quantity of the compensation and benefits" under the variable compensation and benefits had a factor loading value lower than 0.45, which was dropped from the analysis. Again in the 7th component, factor "I am ready to increase my work effort in order to gain the reward and benefits" from the variable compensation and benefits and factor "My relationship with my colleagues is good" from the variable employee relations management, were having only two factors loaded, which were also removed from the study. Since, four factors were dropped, there were only 26 factors taken for the further analysis.

Table 4: Rotated Component Matrix

	Components						
Code	1	2	3	4	5	6	7
ITS1				0.617			
ITS2				0.780			
ITS3					0.597		
ITS4				0.782			
ITS5					0.622		
CB1						0.512	
CB2						0.573	
CB3						0.795	
CB4							
CB5							0.597
TN1		0.798					
TN2		0.573					
TN3		0.779					
TN4		0.736					
TN5		0.794					
PM1	0.567						
PM2	0.559						
PM3							
PM4			0.481				
PM5					0.575		
CD1	0.602						
CD2	0.687						
CD3	0.723						
CD4	0.758						
CD5	0.700						
ER1							0.728
ER2			0.691				
ER3			0.716				
ER4			0.672				
ER5	0.568						
Extraction Method: Principal Component Analysis.							
Rotation Method: Varimax with Kaiser Normalization.							
a Rotation converged in 17 iterations.							

As shown in Table-4, all factors of Career Development (CD), two factors from Performance Management (PM) and one factor from Employee Relations (ER) are taken and built a new independent variable called Career Development (CD). As second independent variable, all factors from Training (TN) are taken and named as Training (TN). Similarly, three factors from employee relations (ER) and one factor from performance management is taken to form third independent variable and named as Employee Relations (ER). Further, three factors are taken from intention to stay to form (ITS). Though, there were three factors in the fifth component, due to lack of common suitable feature among them, these factors are removed from the analysis. Taking three factors from Compensation Benefits (CB), a new dependent variable Compensation Benefits (CB) is formed. Finally, there were only two factors in the 7th component from compensation and benefits and employee relations, which were discarded.

Correlation Analysis

Correlation refers to synonym for association or the relationship between variables. It measures the degree to which two sets of data are related. Higher correlation value indicates stronger relationship between both sets of data. When the correlation is 1 or -1, a perfectly linear positive or negative relationship exists; when the correlation is 0, there is no relationship between the two sets of data. The standard correlation coefficient is Pearson's (r), which applies primarily to variables distributed more or less along interval or ratio scales of measurement.

Table 5: Correlation Analysis

	CD	TR	ERM	ITS	CB
CD	1				
TR	.576**	1			
ERM	.691**	.567**	1		
ITS	.470**	.237**	.419**	1	
CB	.508**	.430**	.502**	.413**	1

** Correlation is significant at the 0.01 level (2-tailed).

As shown in the Table-5 above, the Pearson Test shows a significant positive relationship between career development and employees intention to stay. This is indicated by the correlation coefficient 0.470. It also depicts a positive correlation between training and employees' intention to stay indicated by coefficient 0.237. Further, the table also shows a significant positive correlation of employee relations management with their intention to stay with the coefficient 0.419. In the same way, employees' intention to stay has a significantly positive correlation with the variable compensation and benefits. This shows that when career development, training, employee relations management, and compensation & benefits are good enough, the employees intend to stay longer in the current organization. Since the p value is less than alpha i.e. $0.00 < 0.01$, the correlation is significant in all the variables at 1 percent level of significance.

Regression Analysis

Regression is a measure of association between two quantitative variables. This form of statistical test is only possible with interval or ratio data. In this study, the regression analysis was used to test the hypotheses.

Table 6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.530 ^a	.280	.263	2.32341

a. Predictors: (Constant), CB, TR, ERM, CD

The multiple correlation coefficient R is found to be 0.530. This indicates the correlation of all the variables (i.e. compensation benefits, training, employee relations management and career development) collectively on employees' intention to stay is positive. This shows, 28 percent of variation in intention to stay is explained by compensation benefits, training, employee relations management and career development. After adjusting by degree of freedom, 26.3 percent of variation in ITS is explained by CB, TR, ERM & CD. The deviation from regression plane is 2.32, which is not so high. So prediction seems to be reliable.

Table 7: ANOVAa Table

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	343.032	4	85.758	15.886	.000 ^b
Residual	879.914	163	5.398		
Total	1222.946	167			

a. Dependent Variable: ITS
b. Predictors: (Constant), CB, TR, ERM, CD

Since, the ANOVA table above shows, the linear model is significant at 1 percent level of significance, Multiple Linear Model could be used to analyze data.

Table 8: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.969	.977		2.016	.045		
CD	.146	.045	.323	3.273	.001	.452	2.211
TR	-.082	.051	-.137	-1.601	.111	.603	1.659
ERM	.119	.073	.159	1.626	.106	.461	2.169
CB	.263	.093	.228	2.841	.005	.685	1.459
a. Dependent Variable: ITS							

The above table shows that, variables CD and CB are significant at 5 percent level of significance. Whereas, variables TR and ERM are insignificant. Moreover, when level of CD increased by one point than ITS is expected to be increased by 0.146. Similarly, when CB is increased by one point, than ITS can expected to be increased by 0.263. Since, VIF is less than 10, this shows there is no problem of multi-collinearity among the independent variables.

Hypotheses Testing

In hypothesis testing, p-value was used to decide whether we have enough evidence to accept the alternative hypothesis and say our hypothesis is supported by the data. In this part, possible relationships between independent variables and dependent variables are analyzed. In the beginning, there were five hypothesis set to analyze the relationship of independent variables compensation/ benefits, training, performance management and career development with the dependent variable intention to stay. But, since factor analysis has dropped the variable performance management, only four hypotheses were tested.

Table 9: Summary of Hypothesis	Result
H1a: There is significant relationship between compensation/benefits and employees' intention to stay	Accepted
H1b: There is significant relationship between training and employees' intention to stay	Rejected
H1d: There is significant relationship between career development and employees' intention to stay	Accepted
H1e: There is significant relationship between employee relations and employees' intention to stay	Rejected

As depicted in the above Table 9, the first alternative hypothesis, H1a: There is significant relationship between compensation/ benefits and employees' intention to stay is accepted. The linear regression analysis result indicated a significant relationship between compensation/ benefits and employees' intention to stay.

The second alternative hypothesis H1b: There is significant relationship between training and employees' intention to stay has been rejected. The linear regression analysis result indicated an insignificant relationship between training and employees' intention to stay.

Similarly, the forth alternative hypothesis H1d: There is significant relationship between career development and employees' intention to stay has been accepted. The linear regression analysis shows a significant correlation between these two variables.

And, the fifth alternative hypothesis H1e: There is significant relationship between employee relations and employees' intention to stay is rejected, as the linear regression model produces an insignificant result in between the relationship of employees' relations and employees' intention to stay.

Discussion

The main aim of this study was to examine the relationship between the various factors of human resource practices with the employees' intention to stay in their currently working banks or financial institutions. The study shows a significant positive relationship between the compensation and benefits with the employees' intention to stay. This result seems to be similar to the study by Shahzad, Bashir and Raymay (2008, p.309), whose findings revealed positive relationship between compensation practices and the performance of university teachers in Pakistan when countering the other factors of intention to stay in the long run. Chiu Luk and Tang (2002) also have concluded that, compensation components are important factors to retain and motivate employees. This study is also in line with the opinion of Pinder (1984) that salary strategy and job enrichment strategies were positively related to job satisfaction and thus have also a positive effect on intention to stay. When high performers are inadequately rewarded, they quit. It is their opinion that, the jobs which able to provide adequate financial incentive are more likely to make employees stay with the organization (Mbah 2012, p.278).

The study shows a insignificant relationship of training with employees' intention to stay in their current job. This conclusion seems contrary to some of the earlier researches. For instances Joarder and Sharif (2011, p.159) and Fairris (2004, p.592). Their studies indicated that employee's training is positively related to intention to stay. Similarly, Chee, Kamal, and Gangaram, (2007, p.73) also went against this research concluding constant training and development to bring staff to an acceptable level of performance and keeping them engaged actually has a significant link and relation to job satisfaction, morale and optimism thus impacted intention to stay. Providing continual training and development programs to the employees supported the hypothesis that training and employee development has a direct link to staff intention to stay (Mohamad & Azzat, 2006, p.40).

The finding of this study, banking employees intention to stay is positively related their career development is in line with the finding professional growth related to career progression was related to intention to stay and thus the companies were advised to have regular career advancement opportunities and professional growth for its staff in a bid to retain them (Muliawan, Green & Robb 2009, p.132). The conclusion is also supportive with conclusion of Sherman and Snell, (1998) as increase in skills and the opportunity to manage their career successfully helps to retain valued employees. This also in line with the finding, job satisfaction derived from an established career development program and putting people in the right job and responsibility actually reduce stress because of better cohesion and work schedule management. This in turn has significant relationship with staff retention and negate turnover intention (Shader, Broome & Carroll 2001, p.210). Similar study by Helmi, (2006), as besides having good HR practices, other predictors such as career advancement program is essential to negate turnover intention is also consistent with the finding of this study.

Another objective of the study was to find out the relationship between employee relations and their intention to stay. The result shows insignificant relationship of employee relations practices with employees' intention to stay. This indicates that employee relations practices and policies of organization are irrelevant with its employees' turnover intention plan. The study seems against the conclusion that perceived supervisory support has a direct relation to employees' intention to stay (Newman, 2012, p.12). This study has also gone against the conclusion of Van der Heijden van Dam & Hasselhorn (2009, p.616), unsupportive work environment and poor leadership quality which is an indicator of poor employee and employer relationship have implication for nurses to resign in a year. Kuvaas (2006, p.514), examined whether and how quality employee

-organizational relationship influence intention to stay, the results goes against this research and indicated a strong positive relation between employee relations as an HR practice against turnover intention.

Conclusion

There were several researches in different periods in time and different context to explore the factors, which could contribute to the employees' intention to stay. All the researches had their own conclusion, some of them were similar and some of them were not. It is not necessary that the conclusion drawn by one study in one context and time should match the conclusion drawn by another study in different context and time. Hence, the necessity of this study was realized from the context that whether or not the generalized factors or variables concluded by various models and theories of various researches are also particularly applicable in Nepalese banking industry or not.

One of the basic objectives of the study was to explore the factors influencing employees' intention to stay in Nepalese banking organizations. To attain that objective, factor analysis was conducted. The established model was used and adapted with some contextual factors. The study drops performance management variable from the model. Hence, it is concluded that, only established factors of employees' intention to stay cannot be generalized to Nepalese banking sector.

Another objective of the study was to examine the relationship of the human resource practices as independent variables with employees' intention to stay. The study concludes; providing training is not very effective tool to retain banking employees in Nepal. Similarly, what types of employee relation practices are there in Nepalese banking organization also does not very importantly matters to the employees for the stay or leave with their current jobs. But, the proper provision of compensation benefits really matters them to their stay intention. Similarly, if employees find that there are practices, which support their career development, they intend to stay with their current banks.

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Annex 1 Anti-image Matri

Anti-Image Correlation	Intention To Say I will not look for a new job	908a	-0.134	0.077	-0.176	-0.067	-0.047	-0.017	-0.068	-0.015	-0.071	-0.006	0.002	-0.007	0.059	0.085	0.027	-0.06	-0.003	0.083	0.076	-0.077	0.069	-0.036	0.091	-0.074	-0.04	-0.076	-0.032	-0.111	0.079
	Intention To Say I am currently not looking for a new job	-0.134	860a	0.036	-0.493	0.064	0.008	-0.066	0.106	0.071	0.006	0.007	0.019	-0.154	-0.049	0.06	0.021	-0.009	-0.017	-0.158	-0.002	0.009	-0.002	0.107	0.056	-0.078	-0.081	-0.063	-0.089	0.149	-0.148
	Intention To Say I will not look for a new job	0.077	0.036	939a	-0.238	-0.078	-0.115	-0.012	0.005	0.051	-0.063	-0.066	-0.044	0.069	-0.049	0.018	0.004	-0.051	-0.074	0.08	-0.076	0.035	0.037	-0.125	0.08	0.008	0.09	-0.12	0.071	-0.046	-0.076
	Intention To Say I will not look for a new job	-0.176	-0.493	-0.238	854a	-0.12	-0.166	-0.098	0.124	-0.216	0.026	0.006	-0.097	0.067	0.032	0.094	-0.042	0.05	-0.126	0.033	-0.03	-0.047	-0.11	0.035	-0.064	0.061	-0.06	0.191	0.091	-0.053	-0.031
	Intention To Say I will not look for a new job	-0.067	0.064	-0.078	-0.12	902a	0.15	-0.214	0.099	0.017	0.023	0.196	-0.326	0.05	-0.009	-0.01	-0.064	-0.064	-0.136	-0.024	-0.152	0.029	0.028	-0.106	-0.052	0.141	-0.178	0.038	-0.055	-0.071	-0.036
	Compensation Benefit: The more I receive, the better I feel	-0.047	0.008	-0.115	-0.166	0.15	909a	-0.152	-0.19	0.017	0.023	0.083	0.041	-0.116	-0.053	-0.061	-0.061	-0.011	0.058	-0.213	-0.009	-0.05	0.074	-0.151	0.122	0.009	-0.233	0.094	-0.067	0.02	0.091
	Compensation Benefit: The more I receive, the better I feel	-0.017	-0.066	-0.012	-0.098	-0.214	-0.152	862a	-0.297	-0.33	-0.035	-0.144	0.162	0	0.098	-0.019	0.066	-0.091	0.132	0.003	0.152	0.015	-0.019	0.064	-0.021	-0.125	0.246	-0.121	0.063	-0.03	-0.039
	Compensation Benefit: The more I receive, the better I feel	-0.068	0.106	0.005	0.124	0.099	-0.19	-0.297	816a	0.006	-0.071	0.116	-0.013	0.096	-0.219	-0.034	0.029	-0.094	-0.168	-0.051	-0.353	0.053	-0.073	0.078	0.107	0.002	-0.151	0.048	0.062	-0.042	-0.062
	Compensation Benefit: The more I receive, the better I feel	-0.015	0.071	0.051	-0.216	0.017	0.017	-0.33	0.006	921a	-0.169	=====	-0.05	0.113	-0.043	-0.166	0.034	-0.038	-0.032	-0.038	0	0.168	-0.087	0	-0.045	-0.134	0.124	-0.058	-0.14	0.014	0.051
	Compensation Benefit: The more I receive, the better I feel	-0.071	0.006	-0.063	0.026	0.023	0.023	-0.035	-0.071	-0.169	879a	-0.01	-0.019	0.001	0.064	0.006	-0.027	-0.064	-0.066	0.097	-0.207	-0.067	0.068	-0.163	0.042	0.059	-0.253	-0.085	-0.062	0.012	0.237
	Training: My organization provides training opportunities	-0.006	0.007	-0.066	0.006	0.196	0.083	-0.144	0.116	=====	-0.01	872a	-0.339	0.002	-0.097	-0.467	-0.001	0	-0.091	-0.139	-0.03	-0.056	0.164	-0.114	0.066	-0.022	-0.141	0.143	0.105	-0.102	0.044
	Training: My organization provides training opportunities	0.002	0.019	-0.044	-0.097	-0.326	0.041	0.162	-0.013	-0.05	-0.019	-0.339	904a	-0.219	-0.001	-0.012	-0.058	0.063	0.195	-0.04	0.01	-0.101	-0.021	-0.009	0.018	0.057	0.104	-0.22	-0.023	0.101	-0.089
	Training: Employees will normally go through training	-0.007	-0.154	0.069	0.067	0.05	-0.116	0	0.096	0.113	0.001	0.002	-0.219	874a	-0.302	-0.24	-0.066	-0.106	0	0.085	-0.113	0.183	0.007	-0.038	-0.093	-0.033	-0.074	0.155	-0.085	-0.108	0.148
	Training: Formal training programs are offered	0.059	-0.049	-0.049	0.032	-0.009	-0.053	0.098	-0.219	-0.043	0.064	-0.097	-0.001	-0.302	916a	-0.234	0.145	-0.005	0.056	0.05	-0.095	-0.103	-0.009	0.058	-0.078	-0.181	0.094	-0.093	0.072	-0.112	0.044
	Training: This organization has provided me with the	0.085	0.06	0.018	0.094	-0.01	-0.061	-0.019	-0.034	-0.166	0.006	-0.467	-0.012	-0.24	-0.234	908a	0.005	0.018	-0.092	0.003	0.084	-0.183	0.024	-0.068	0.12	0.108	-0.032	-0.095	0.006	0.009	-0.082
	Performance Management: The feedback I receive on my	0.027	0.021	0.004	-0.042	-0.064	-0.061	0.066	0.029	0.034	-0.027	-0.001	-0.058	-0.066	0.145	0.005	924a	-0.379	-0.114	-0.014	-0.186	-0.245	0.101	-0.033	-0.008	-0.112	0.043	-0.018	0.077	0.023	-0.018
	Performance Management: The feedback I receive on my	-0.06	-0.009	-0.051	0.05	-0.064	-0.011	-0.091	-0.094	-0.038	-0.064	0	0.063	-0.106	-0.005	0.018	-0.379	936a	-0.08	0.001	0.089	-0.13	0.013	0.032	-0.001	-0.127	0.048	0.012	-0.128	0.189	-0.189
	Performance Management: The feedback I receive on my	-0.003	-0.017	-0.074	-0.126	-0.138	0.058	0.132	-0.168	-0.032	-0.066	-0.091	0.195	0	0.056	-0.092	-0.114	-0.06	906a	-0.2	0.055	0.048	0.04	0.088	-0.23	-0.04	0.042	-0.086	-0.08	0.027	0.087
	Performance Management: The organization is seen more	0.083	-0.158	0.08	0.033	-0.024	-0.213	0.003	-0.051	-0.038	0.097	-0.139	-0.04	0.085	0.05	0.003	-0.014	0.001	-0.2	947a	-0.061	0.01	-0.07	-0.06	-0.08	0.002	0.055	-0.058	-0.185	-0.146	0.097
	Performance Management: Performance appraisal is a	0.076	-0.002	-0.076	-0.03	-0.152	-0.009	0.152	-0.353	0	-0.207	-0.03	0.01	-0.113	-0.095	0.084	-0.186	0.089	0.055	-0.061	848a	-0.029	-0.126	0.074	-0.029	0.163	0.026	0.045	0.005	0.065	-0.2
	Career Development: My boss is a good professional	-0.077	0.009	0.035	-0.047	0.029	-0.05	0.015	0.053	0.168	-0.067	-0.056	-0.101	0.183	-0.103	-0.183	-0.245	-0.13	0.048	0.01	-0.029	943a	-0.238	0.024	-0.192	-0.07	0.064	-0.098	-0.128	-0.011	0.038
	Career Development: Organization gives me support	0.059	-0.002	0.037	-0.11	0.028	0.074	-0.019	-0.073	-0.087	0.068	0.164	-0.021	0.007	-0.009	0.024	0.101	0.013	0.04	-0.07	-0.126	-0.238	917a	-0.414	0.035	-0.121	-0.016	-0.06	0.104	-0.122	0.051
	Career Development: Organization gives me adequate	-0.036	0.107	-0.125	0.035	-0.106	-0.151	0.064	0.078	0	-0.163	-0.114	-0.009	-0.038	0.058	-0.068	-0.033	0.032	0.088	-0.06	0.074	0.024	-0.414	892a	-0.305	-0.174	0.056	0.136	-0.172	0.232	-0.417
	Career Development: There are plenty of opportunities	0.091	0.056	0.08	-0.064	-0.052	0.122	-0.021	0.107	-0.045	0.042	0.066	0.018	-0.093	-0.078	0.12	-0.008	-0.001	-0.23	-0.08	-0.029	-0.192	0.035	-0.305	902a	-0.151	-0.092	-0.079	0.242	-0.173	0.014
	Career Development: I receive feedback on my career	-0.074	-0.078	0.008	0.061	0.141	0.009	-0.125	0.002	-0.134	0.059	-0.022	0.057	-0.033	-0.181	0.108	-0.112	-0.127	-0.04	0.002	0.163	-0.07	-0.121	-0.174	-0.151	944a	-0.158	0.059	-0.005	-0.134	-0.019
	Employee Relations Management: My relationship with	-0.04	-0.081	0.09	-0.06	-0.178	-0.233	0.246	-0.151	0.124	-0.253	-0.141	0.104	-0.074	0.094	-0.032	0.043	0.048	0.042	0.055	0.026	0.054	-0.016	0.056	-0.092	-0.158	787a	-0.32	0.11	0.109	-0.128
	Employee Relations Management: The organization is	-0.076	-0.063	-0.12	0.191	0.038	0.094	-0.121	0.048	-0.058	-0.085	0.143	-0.22	0.155	-0.093	-0.095	-0.018	0.012	-0.086	-0.058	0.045	-0.098	-0.06	0.136	-0.079	0.059	-0.32	905a	-0.283	-0.091	-0.057
	Employee Relations Management: Organization treats	-0.032	-0.089	0.071	0.091	-0.055	-0.067	0.063	0.062	-0.14	-0.062	0.105	-0.023	-0.085	0.072	0.006	0.077	-0.128	-0.08	-0.185	0.005	-0.128	0.104	-0.172	0.242	-0.005	0.11	-0.283	910a	-0.379	-0.121
	Employee Relations Management: Organization allows	-0.111	0.149	-0.046	-0.053	-0.071	0.02	-0.03	-0.042	0.014	0.012	-0.102	0.101	-0.108	-0.112	0.009	0.023	0.189	0.027	-0.146	0.065	-0.011	-0.122	0.232	-0.173	-0.134	0.109	-0.091	-0.379	899a	-0.21
	Employee Relations Management: I am proud to help	0.079	-0.148	-0.076	-0.031	-0.036	0.091	-0.039	-0.062	0.051	0.237	0.044	-0.089	0.148	0.044	-0.082	-0.018	-0.189	0.087	0.097	-0.2	0.038	0.051	-0.417	0.014	-0.019	-0.128	-0.057	-0.121	-0.21	915a

Annex 2 Communalities

Dimensions	Initial	Extraction
IntentionToStayIneverthinkaboutquittingmy	1	0.548
IntentionToStayIamcurrentlynotlookingfora	1	0.698
IntentionToStayIwontleavetheorganizatione	1	0.54
IntentionToStayIwillnotlookforanotherjob	1	0.804
IntentionToStayIthinktherearebetteropportu	1	0.643
CompensationandBenefitTheincentivesbenefitsr	1	0.599
CompensationandBenefitThecompensationandbenef	1	0.706
CompensationandBenefitThecompensationandbenef	1	0.768
CompensationandBenefitIamsatisfiedwiththequ	1	0.637
CompensationandBenefitIamreadytoincreasemy	1	0.548
TrainingMyorganizationprovidestrainingopportun	1	0.732
TrainingMyorganizationisinterestedinmyperson	1	0.753
TrainingEmployeeswillnormallygothroughtrainin	1	0.676
TrainingFormaltrainingprogramsareofferedtoem	1	0.705
TrainingThisorganizationhasprovidedmewiththe	1	0.8
PerformanceManagementThefeedbackIreceiveonho	1	0.568
PerformanceManagementThefeedbackIreceive4swi	1	0.561
PerformanceManagementIregularlyreceivefeedback	1	0.399
PerformanceManagementTheorganizationseemsmore	1	0.537
PerformanceManagementPerformanceappraisalival	1	0.677
CareerDevelopmentMyjoboffersrightprofessional	1	0.662
CareerDevelopmentOrganizationgivesmeopportunit	1	0.616
CareerDevelopmentOrganizationgivesmeadequateo	1	0.749
CareerDevelopmentThereareplentyofopportunitie	1	0.643
CareerDevelopmentIreceivefeedbackonmycareer	1	0.736
EmployeeRelationsManagementMyrelationshipwith	1	0.637
EmployeeRelationsManagementTheorganizationisc	1	0.732
EmployeeRelationsManagementOrganizationtreatse	1	0.727
EmployeeRelationsManagementOrganizationalallowse	1	0.661
EmployeeRelationsManagementIamproudtotellpe	1	0.665
<i>Extraction Method: Principal Component Analysis.</i>		

Annex 3 Eigenvalues

Annex: Total Variance Explained			
Component	Initial Eigenvalues		
	Total	Percent of Variance	Cumulative percent
1	11.111	37.038	37.038
2	2.139	7.128	44.166
3	1.535	5.118	49.285
4	1.49	4.965	54.25
5	1.267	4.223	58.473
6	1.13	3.767	62.24
7	1.055	3.515	65.756
8	0.964	3.214	68.969
9	0.872	2.905	71.875
10	0.826	2.753	74.628
11	0.728	2.427	77.055
12	0.649	2.164	79.219
13	0.628	2.093	81.312
14	0.573	1.911	83.223
15	0.55	1.834	85.057
16	0.487	1.625	86.682
17	0.441	1.47	88.152
18	0.39	1.299	89.451
19	0.383	1.276	90.727
20	0.37	1.233	91.96
21	0.341	1.138	93.098
22	0.335	1.116	94.214
23	0.298	0.994	95.208
24	0.269	0.897	96.105
25	0.25	0.832	96.937
26	0.218	0.725	97.663
27	0.207	0.689	98.352
28	0.196	0.654	99.006
29	0.161	0.536	99.542
30	0.137	0.458	100
Extraction Method: Principal Component Analysis.			

Annex 4 Questionnaire

Dear Respondent,

I would like to kindly request you to fill out my questionnaire. This will take you about less than 5 minutes to complete. I assure you that your answers will be kept completely confidential and will purely be used for the research purpose only.

Section A: Demographic Profile

1 Gender	2 Age:
☐ Female	☐ Below 26
☐ Male	☐ 26 - 35
	☐ 36 - 45
3 Marital status:	☐ 46 - 55
☐ Single	☐ More than 55
☐ Married	
4 Highest education completed:	5 Salary:
☐ Diploma	☐ Below Rs 15001
☐ Degree	☐ Rs 15001 – Rs 25000
☐ Master	☐ Rs 25001 – Rs 35000
☐ PhD	☐ Rs 35001 – Rs 45000
☐ others	☐ Above Rs 45000
6 No. of jobs changed:	
☐ 1st Job	
☐ 2-3	
☐ 4-5	
☐ Above 5	
7. Level	
☐ Entry Level	
☐ Mid-level	
☐ Manager level	

Section B: Perceptions about Intention to Stay:

Listed below are different perceptions about Turnover Intention. Please indicate how strongly you agree or disagree with each statement by ticking only one option, where it indicates:

Dimension: Intention to Stay	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I never think about quitting my job.	1	2	3	4	5
I am currently not looking for a job outside my organization.	1	2	3	4	5
I won't leave the organization even if I could find a similar position at another organization.	1	2	3	4	5
I will not look for another job for at least a year.	1	2	3	4	5
I think there are better opportunities in my organization.	1	2	3	4	5

Dimension: Performance Management	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The feedback I receive on how I do my job is highly relevant.	1	2	3	4	5
The feedback I receive agrees with what I have actually achieved.	1	2	3	4	5
I regularly receive feedback on my job performance.	1	2	3	4	5
The organization seems more engaged in providing positive feedback for good performance than criticizing on poor performance.	1	2	3	4	5
Performance appraisal is valuable to me in identify strengths and weaknesses.	1	2	3	4	5

Dimension: Compensation and Benefit	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The incentives/ benefits reward those behaviors that are important to this organization.	1	2	3	4	5
The compensation and benefits matches my work effort.	1	2	3	4	5
The compensation and benefits have a positive effect on the work atmosphere.	1	2	3	4	5
I am satisfied with the quality or quantity of the compensation and benefits.	1	2	3	4	5
I am ready to increase my work effort in order to gain the reward and benefits.	1	2	3	4	5

Dimension: Employee Relations Management	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
My relationship with my colleagues is good.	1	2	3	4	5
The organization is committed to build strong relationship between employees.	1	2	3	4	5
Organization treats employees equally.	1	2	3	4	5
Organization allows employees to influence final decision.	1	2	3	4	5
I am proud to tell people who I work for.	1	2	3	4	5

Dimension: Training	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
My organization provides training opportunities.	1	2	3	4	5
My organization is interested in my personal and professional development.	1	2	3	4	5
Employees will normally go through training programs before starting the job.	1	2	3	4	5
Formal training programs are offered to employees in order to increase their ability in this organization.	1	2	3	4	5
This organization has provided me with the training opportunities enabling me to extend my range of skills and abilities.	1	2	3	4	5

Dimension: Career Development	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
My job offers right professional development opportunities to be effective in my role.	1	2	3	4	5
Organization gives me opportunities to handle higher level job.	1	2	3	4	5
Organization gives me adequate opportunities to learn and grow.	1	2	3	4	5
There are plenty of opportunities to advance.	1	2	3	4	5
I receive feedback on my career development needs.	1	2	3	4	5

Convergent Effect of Work-Family Conflict on Job Satisfaction of Commercial Bank's Employees in Bangladesh: Does Gender Role Moderate the Effect?

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1. Introduction

Work and family are the two most important elements of an adult individual's life. An individual has to play multiple responsibilities relating to work and family that require a great amount of time and energy. Simply, imbalance of the multiple roles across the two domains (family and work) is the outcome of the work-family conflict. Work-family conflict denotes a reciprocal relationship between work and family, with work affecting family negatively i.e., work-to-family conflict (Minnotte *et al.*, 2013, 2015; Nelson *et al.*, 2012), and family affecting work negatively (i.e., family-to-work conflict) (Hill 2005; Voydanoff 2007). Research shows that work-family conflict consists of a two-dimensional construct: where first dimension (work-to-family conflict) specifies the conflict arising work roles interfere with family roles and second dimension (family-to-work conflict) refers to the conflict arising when family roles interfere with work roles (Beutell, 2010; Kinnunen *et al.*, 2010; Kossek and Ozeki, 1998). Past research posited that the effect of work-family conflict is related to increased turnover intentions, parental distress; and reduced job satisfaction, organizational commitment and family satisfaction (Beutell, 2010; Karatepe and Kilic, 2007; Kinnunen *et al.*, 2010; Kossek and Ozeki, 1998; Lu *et al.*, 2010; Spector *et al.*, 2007). The effect of work-family conflict on job satisfaction and other related variables, has been widely explored among employees in lieu of a variety of occupations such as hotel employees, social workers, college professors, software workers, etc. (e.g. Grandey *et al.*, 2005; Karatepe and Kilic, 2007; Namasivayam and Zhao, 2007; Scholarios and Marks, 2004). Nevertheless, the effect of work-family conflict on various individual and organizational outcomes among bank's employees' remains relatively unexplored, particularly in the Bangladeshi context. There are 56 private commercial banks in Bangladesh operating under different ownerships system and almost all banks serve their operations through branch banking system (Uddin, *et al.*, 2014). Virtually, we know that bank organization is a labor-intensive competitive service sector in Bangladesh (Rahman, *et al.*, 2013). The success and failure of a banking organization as a service sector to a large extent depend on employee efforts, job satisfaction, integrity and commitment (Uddin, *et al.*, 2014). Officially, employees in Bangladesh are usually required to work six to eight hours in a working day and for banking organization it is (10.00am-6.00pm). Bank officials and employees (including female staff) are unnecessarily told to stay in the office on the pretext of work even after the close of banking hours at 6:00 pm. This is not humane said the governor of Bangladesh Bank (Atiur Rahman) at a meeting with chief executives of all banks (<http://www.thedailystar.net>).

This excessive workload and career pressure force them to stay for an extra time in the bank and sometimes take away the work assignment to home. So, there might be a limited time and energy

(physical, emotional and psychological) to devote to family. This disparity of resource allocation between work life and family life cause to create work family conflict. Demographic variables like gender, age, marital status, employment nature, experience have made work-family integration as a crucial issue for everyone (Aryee *et al.*, 2005; Lewis and Cooper, 1999). In developing countries like India, Bangladesh, the demographic changes are seen as factors for increasing number of women in the workforce and increasing number of nuclear as well as dual-earner families (Bharat, 2003; Buddhapriya, 2009; D'Cruz and Bharat, 2001; Rajadhyaksha and Bhatnagar, 2000). These demographic variables have put considerable pressure on both men and women to concurrently manage their work and family obligations. In order to better understand this phenomenon, the present study aims to investigate the convergent effect of work-family conflict (work-to-family conflict and family-to-work conflict) on job satisfaction among banks employees' in Bangladesh in consideration of gender role differences.

2. Objectives of the Research

The fundamental objective of this research is to find out the convergent effect of work-family conflict on job satisfaction among bank employees in Bangladesh. In order to emerge the fundamental objective, the researchers intended to set the following objectives:

- I. To establish the causal relationship between work-family conflict/ family-work conflict and job satisfaction.
- II. To know whether the bank employees gender difference moderates the relationship between work-family conflict/family-work conflict and job satisfaction.

3. Literature Review

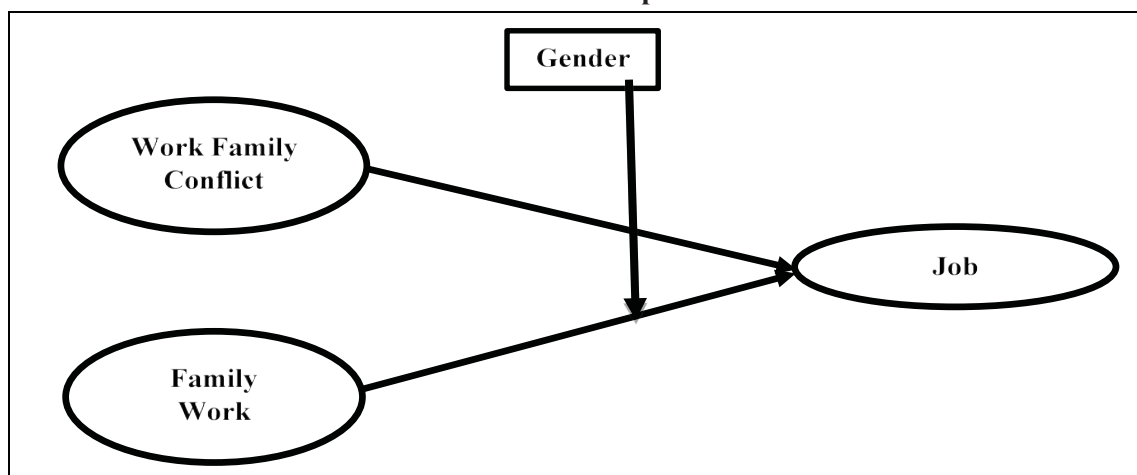
Work-Family Conflict

The concept of work-family conflict has initially been explained by Kahn, Wolfe, Quinn, Snoek, & Rosenthal (1964) using the role theory framework. It is happened due to the role disparity between the work life and family life. Work-family conflict, thus, refers to the bidirectional construct i.e. the work roles interfere the family roles i.e., work family conflict; and the family roles interfere the work roles i.e., family work conflict (Coverman, 1989, Grandey *et al.*, 2005; Judge *et al.*, 2006; Netemeyer *et al.*, 1996; Frone, Russell, and Cooper, 1992). While, Greenhaus and Beutell (1985) defined that work-family conflict as a form of inter-role conflict, which describes the discrepancy between the roles of work and family domains and it is dimensioned as time-based work family conflict, strain-based work family conflict and behavior based work family conflict (Byron, 2005; Greenhaus and Beutell, 1985; Michel *et al.*, 2011).

Job Satisfaction

Due to the impact on individuals and organizations, job satisfaction is one of the important research issues (Lu *et al.*, 2012) which has been researched more than any other variable in Organizational Behavior (Abdulla *et al.*, 2011). Hartline and Ferrell (1996), Brief (1998) defined job satisfaction to be an organization of mind in which an individual can display with some level of like or dislike and evaluate one's job. On the other hand, Tett and Meyer (1993) believed that job satisfaction as an emotional attachment to the complete job (comprehensive perspective) or a certain part of the job (partial perspective) of an individual. Job satisfaction has been found to significantly impact on individual and organizational performance such as absenteeism, turnover, and employee relations (Al Ajmi, 2001; Scarpello and Campbell, 1983) and employee health and well-being (Khaleque, 1981). While, if the employees are dissatisfied they are disposed to to extreme absenteeism and turnover (Metle, 2003, 2002; Koys, 2001), but, satisfied employees are more likely to be effective in handling daily stressors and less likely to be absent or withdraw from their work (Zeffane *et al.*, 2008).

Figure-1: Theoretical Framework of Work Family Conflict and Job satisfaction Relationship



Work Family Conflict and Job Satisfaction Relationship

To find out the relationship and effect of work-family conflict on employees' job satisfaction, several types of research have been conducted in the disciplines of sociology, psychology and management (Conger and Rueter 1999; Livingston and Burley 1996; Martins 2002; Phillips-Miller, Campbell, and Morrison 2000). Job satisfaction as an enjoyable emotional state that results from an individual appraisal of one's job" (Locke, 1969). It has been observed from several previous researches that job satisfaction is the cause of many favorable organizational outcomes, such as lower absenteeism, turnover rate and increased job performance, organizational commitment (Judge *et al.*, 2001; Kinicki *et al.*, 2002). In organization, there are a number of factors responsible for bringing and eroding employee satisfaction at work. Research on WFC/ FWC pointed out WFC as an antecedents of reducing employee job satisfaction (Karatepe and Kilic, 2007; Karatepe and Sokmen, 2006; Spector *et al.*, 2007). The findings of the previous researchers indicate that work family conflict is negatively associated with job satisfaction (Beutell, 2010; Karatepe and Kilic, 2007; Karatepe and Sokmen, 2006; Spector *et al.*, 2007). Michel, Mitchelson, Kotrba, LeBreton, and Baltes (2009) conducted a meta-analysis to test the work-family conflict models and reported a negative relationship of work family conflict on job satisfaction. Based on the aforesaid literature the researchers formulated the following hypothesis:

Hypothesis H1: *Work family conflict has a negative effect on job satisfaction.*

Family Work Conflict and Job Satisfaction Relationship

Recently many scholars have analyzed the relationships between the both directions of work-family conflict (work-to-family conflict and family-to-work conflict) and job satisfaction based on time, strain and behavior. Bartolome (1972) believed that, employees' experienced two aspects that could not be coordinated with each other even it can be difficult to give consideration to both aspects at the same time. However, a number of studies have shown regarding the relationship between famil work conflicts on job satisfaction and found a negative influence on job satisfaction (Boyar & Mosley, 2007; Lu, Siu, Spector, & Shi, 2009). Again, most of the researchers (BhuiyanMenguc, & Borsboom, 2005; Bruck, Allen, & Spector, 2002; Eby *et al.*, 2005; Howard, Donofrio, & Boles, 2004; Karatepe & Uludag, 2007; Karatepe & Tekinkus, 2006; Lu, Gilmour, Kao, & Huang, 2006; Lu, Kao, Chang, Wu, & Cooper, 2008; Namasivayam & Zhao, 2007; O'Driscoll, Brough, & Kalliath; 2004; Thanacoody, Bartram & Casimir, 2009; Wayne *et al.*, 2004; Yildirim & Aycan, 2008) examined by many and their outcome is job dissatisfaction as one of the common consequences of family work conflict. Based on the aforesaid literature the researchers formulated the following hypothesis:

Hypothesis H2: *Family work conflict has a negative effect on job satisfaction.*

Moderating effects of Gender in the relationship between Work-Family Conflict and Job Satisfaction

Based on the two theories named role identity salience theory and the gender role theory, Ford *et al.*, (2007) proposed that the gender differences may moderate the effect size of work-family conflict on job satisfaction. So, the magnitude of the relationship between work-family conflict and job satisfaction may be moderated by the salience of the family role identity as opposed to the work role for each gender. Although there are very few studies that have taken on the proposition set by Ford *et al.*, (2007) and found inconsistent results. Noor (2004), in a sample of women, found no significant moderating effects of the salience of the family role on the relationship between work-family conflict and job satisfaction. Following the above literatures, the researchers construct the hypothesis:

Hypothesis H3: *Employee gender moderates in the relationship between work-family conflict/family-work conflict and employee job satisfaction.*

4. Methodology

Sample and Procedure

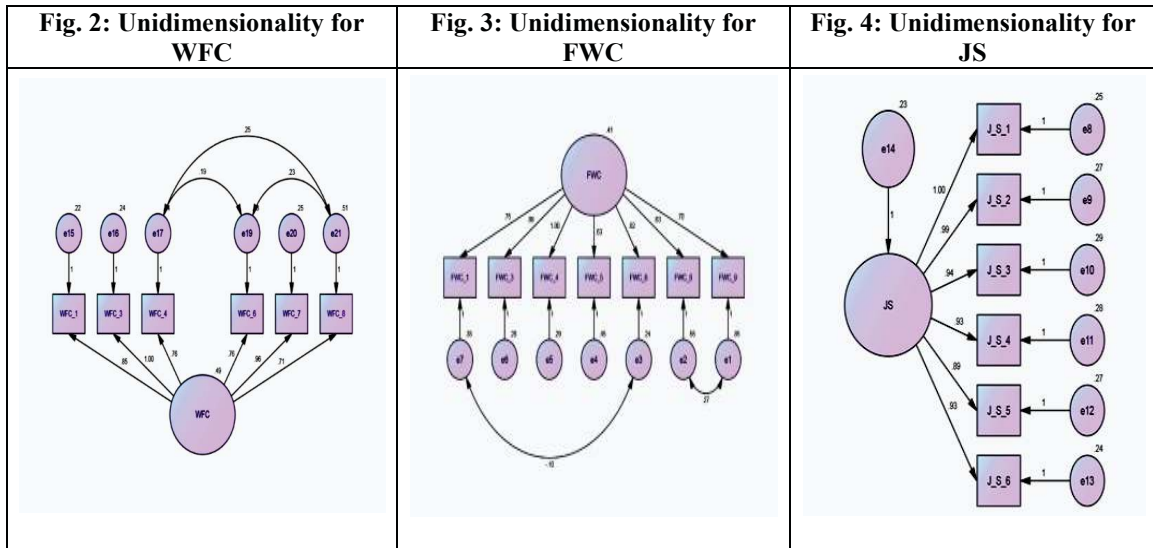
The respondents of this research are the employees working in public and private banks in Bangladesh. Structured close-ended questionnaire packages have been used and sent to collect the data. Questionnaires have been developed in both English and Bengali language. Here, work family conflict and family work conflict variables are taken as independent variables, Job satisfaction as dependent variable and gender acts as the moderating variable. Convenience sampling method had been used for this research. At the first time the questionnaire had been administered to 30 employees of private and public banks for a pilot study to investigate the validity of all questions. Results have shown good reliability except for minor change. On the basis of pilot study's feedback, the final questionnaire has been modified and finalized to collect primary data 309 survey questionnaires were distributed and 225 (72.81% response rate) questionnaires returned. However, 09 filled questionnaires were discarded because the respondents served either inconsistent information or missing data. This study is based on 216 full-time banking employees.

Participants

In the study sample, it has found that 26 percent respondents are male while 74 percent are female. Among them, 95 percent respondents are married and 5 percent respondents are unmarried. Maximum (41.9%) banking employees were at the age of 35+ years but in terms of job experience, 47 percent respondents having 1- 10 years. 57 percent respondents stay with parents and 43 percent live as a nuclear family; 17.6 percent working at public banks and 82.4 percent working at private banks.

Measures with Unidimensionality and Validity

The independent variables have been measured by two subscales named work-family conflict (9 items) and family work conflict (9 items) such as, "The time I devote to my job keeps me away from participating household responsibilities"; "When I get work from home, I am often too frazzled to participate in job responsibilities". Job satisfaction has been measured by 6 items such as "I find real enjoyment in my job". Response options ranged from (1) "Strongly Disagree" to (5) "Strongly agree". Unidimensionality will be achieved when the factor loading for each item will be higher than 0.5 (for newly develop scales) and 0.6 (for established scales) (ZainudinAwang, 2012). In this research, the measuring items for work family conflict, family work conflict, and job satisfaction have an acceptable factor loading (above 0.6). The figure with factor loading of each construct is given below:



Three types of validity (convergent, construct and discriminate validity) have measured in this research paper. Convergent validity was achieved when all the items in the measurement model such as work-family conflict, family work conflict, and job satisfaction were statistically significant and the AVE (Average Variance Extracted) was greater than 0.5. Construct validity was achieved when the Fitness Indexes achieved the requirements; GFI>0.9, CFI>0.9, RMSEA≤0.085 and the ratio of Chi sq/df was less than 5.00.

Table 1: Fit Indices for Work-Family Conflict, Family-Work Conflict, and Job Satisfaction

		Work Family Conflict	Family Work Conflict	Job Satisfaction
Absolute fit	RMSEA	0.037	0.055	0.060
	GFI	0.988	0.982	0.980
Incremental fit	AGFI	0.959	0.954	0.954
	CFI	0.988	0.966	0.966
Parsimonious fit	Chisq/df	1.302	1.65	1.45

Discriminant validity was achieved when the measurement model for work-family conflict, family work conflict, and job satisfaction was independent of the redundant items. The other requirements for discriminant validity were achieved when the pattern structure correlation between a pair of laten exogenous construct was less than 0.85

Measures with Reliability

Table 2: Measures with Reliability

Construct	Items	Factor Loading	Cronbach Alpha
Work Family Conflict	WFC 3	.789	0.872
	WFC 1	.784	
	WFC 4	.766	
	WFC 7	.761	
	WFC 8	.760	
	WFC 6	.733	
	WFC 5	.610, This item was deleted due to low factor loading	
	WFC 2	This item was deleted due to low factor loading	
	WFC 9	This item was deleted due to low factor loading	

Construct	Items	Factor Loading	Cronbach Alpha
Family Work Conflict	FWC 4	.766	0.807
	FWC 3	.752	
	FWC 8	.667	
	FWC 6	.659	
	FWC 1	.641	
	FWC 5	.624	
	FWC 9	.616	
	FWC 2	This item was deleted due to low factor loading	
	FWC 7	This item was deleted due to low factor loading	

Construct	Items	Factor Loading	Cronbach Alpha
Job Satisfaction	J S 1	.751	0.824
	J S 2	.740	
	J S 6	.737	
	J S 4	.721	
	J S 3	.719	
	J S 5	.706	

Plan for Analysis

Using AMOS and SPSS software, data analyses have been carried out. First, means, standard deviations, and correlations were computed for all independent and dependent variables to assess the general pattern of relationships among predictors and predicted variables and to provide support to regression results. Descriptive and inferential statistics including mean, Standard Deviation (SD), reliability, and correlation analysis were executed using SPSS. Meanwhile, AMOS was executed to analyze Confirmatory Factor Analysis (CFA) and direct effects analysis for purpose of examining the constructs validity and regression result for the direct effect of work-family conflict on job satisfaction. Finally, using SPSS and free online calculator for comparing two regression coefficients to know the moderating effect of gender on the relationship between work-family conflict and job satisfaction.

5 Analysis and Results

Table 3: Descriptive and Correlation Analysis

	Mean	SD	Job Satisfaction	Work-Family Conflict	Family Work Conflict
Job Satisfaction	3.67	.50	1		
Work Family Conflict	2.96	.63	-.297**	1	
Family Work Conflict	2.56	.56	-.243**	.598**	1

Table-3 presents descriptive statistics of mean, standard deviation and correlation between variables of the study. The result indicated that job satisfaction ($m=3.67$, $SD= \pm 0.50$) were high. And the mean and standard deviations of work-family conflict ($m=2.96$, $SD= \pm 0.63$) and family work conflict ($m=2.56$, $SD= \pm 0.56$) were in moderate level. Correlation analysis showed that both work-family conflict ($r=-.297$, $p<0.00$) and family work conflict ($r=-.243$, $p<0.00$) have a negative correlation with job satisfaction. Result emphasized that high-level work-to-family conflict leads to decreasing level of job satisfaction among banking employees. But, if we compare between work-family conflict and family work conflict then work-family conflict has the highest correlation with job satisfaction.

Confirmatory Factor Analysis (CFA) and Direct Effect Result

Figure 5: Confirmatory Factor Analysis (CFA) and direct Effect Result

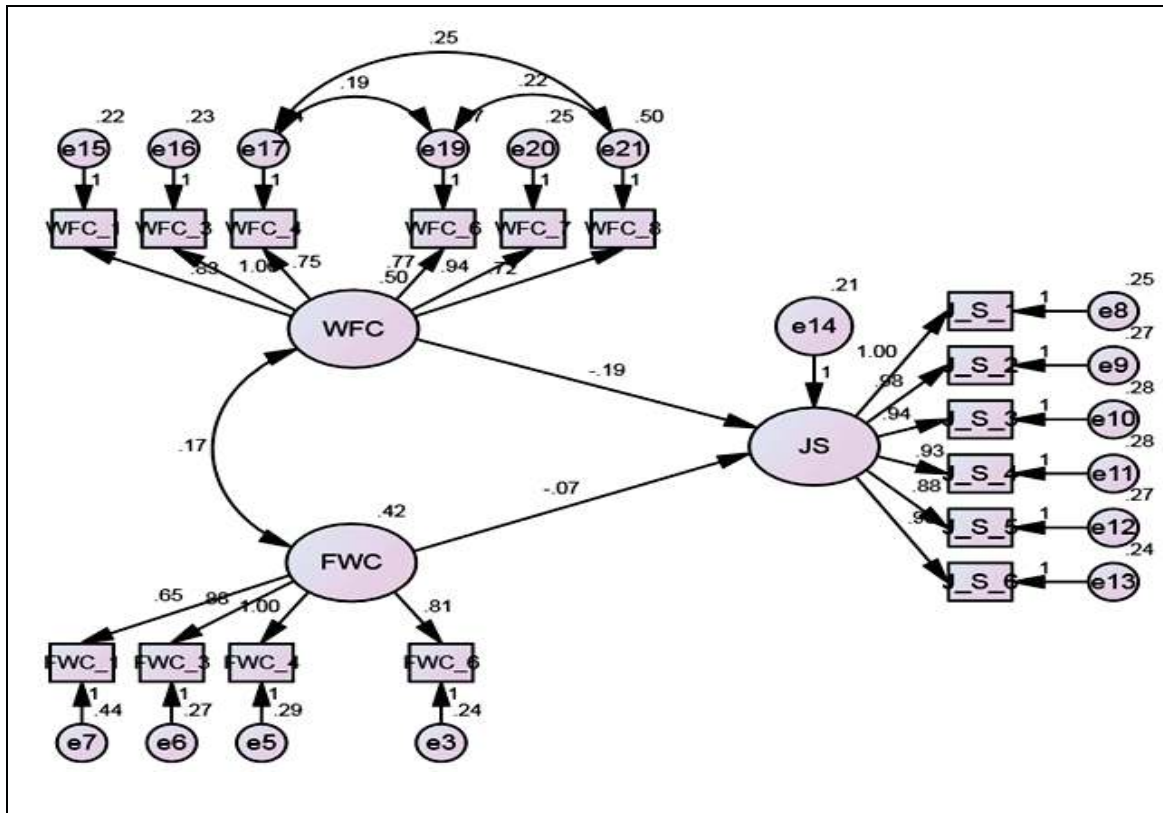


Table 4: Fit Indices for Overall Measurement Model

Absolute fit	RMSEA	0.028
	GFI	0.940
Incremental fit	AGFI	0.917
	CFI	0.997
Parsimonious fit	Chisq/ df	1.169

Table 5: Result of the Effect of Work-Family Conflict on Job Satisfaction

			Estimate	S.E.	C.R.	P
Job Satisfaction	<---	Family Work Conflict	-.073	.066	-1.104	.269
Job Satisfaction	<---	Work Family Conflict	-.192	.061	-3.155	.002

Figure-5 and Table-5 indicate the direct effect model for model fit indexes regression weights for work-to-family conflict and job satisfaction. It was found that the overall model has yielded good fit with data $\chi^2/df=1.169$, RMSEA=0.028, CFI=0.997, GFI=0.940 and AGFI=.917. Overall, both work-family conflict and family work conflict explained 21 percent variance in job satisfaction ($R^2=0.21$). Regression results indicated that only work-family conflict has significant negative effect on job satisfaction ($\beta = -.192$, $p < 0.002$). The family work conflict has a negative effect on job satisfaction ($\beta = -.073$, $p < 0.269$) but insignificant. Results suggested that increasing level of work-family conflict capital was associated with decreasing level of job satisfaction. Therefore, only hypothesis H1 has got support and hypothesis H2 has not got support.

Moderating effects of Gender in the relationship between Work-Family Conflict and Job Satisfaction

To find out the moderating effect of gender on the relationship between work-family conflict and job satisfaction, the researchers have split the SPSS file into two groups (male and female) and conducted the multiple regression. The output (only coefficient) table of multiple regression automatically splits into the male and female group, which is given below:

Table 6: Data for Online Calculator for comparing two Regression Coefficients

Data for online calculator (Work-Family Conflict and Job Satisfaction)				Data for online calculator (Family Conflict and Job Satisfaction)			
Gender	Model	Unstandardized Coefficients		Gender	Model	Unstandardized Coefficients	
		B	Std. Error			B	Std. Error
Female	(Constant)	4.730	.354	Female	(Constant)	4.668	.378
	WFC	-.324	.115		WFC	-.342	.139
Male	(Constant)	4.347	.184	Male	(Constant)	4.283	.186
	WFC	-.242	.062		WFC	-.248	.071

Now, the researchers used an online calculator for comparing two regression coefficients (<http://www.danielsoper.com/statcalc/calculator.aspx?id=103>) to know the moderating effect of gender on the relationship between work-family conflict and job satisfaction. This calculator has determined whether the effects of gender are significantly different from each other. Putting the necessary information from the coefficient table (beta, standard error, and sample size) into the online calculator and the results of the online calculator are given below:

Table 7: The t-test Results of Moderating Effect

Results of online calculator for work-family conflict and job satisfaction		Results of online calculator for family work conflict and job satisfaction	
t-Value	:0.765	t-Value	:0.602
Degrees of freedom	:212	Degrees of freedom	:212
Probability (p)	:0.444	Probability (p)	:0.547

From the coefficient table for work family conflict the B = -.324 for female and B = -.242 for male and for family work conflict the B = -.342 for female and B = -.248 for male. Though the effects size are different for female and male but the probability value of work family conflict (0.444) and family work conflict (0.547) indicate that the gender (male and female) does not moderate the relationship between work family conflict and job satisfaction. Thus the hypothesis H3 has not got support.

6. Overall Discussions

This study examined the relationship and effect of Work-Family Conflict (W-FC) on job satisfaction among banking employees in Bangladesh. The findings showed that W-FC is significantly and negatively correlated with job satisfaction. This findings are consistent with earlier studies by Zulfiqar *et al.*, (2013), Buonocore and Russo (2013), Burke *et al.*, (2013) and Huffman Casper and Payne (2014) who reported high W-FC conflict is the cause of low job satisfaction. Panatik *et al.*, (2012b) also showed a negative correlation between work-to-family conflict and job satisfaction. This study also tested the effect of W-FC on job satisfaction. W-FC explained by 21 percent variance in job satisfaction. But, in this research, only work family conflict has a significant effect on job satisfaction. Though, family work conflict has negative effect on employees' job satisfaction but statistically this finding is not significant. This study also found that the gender (male and female) does not moderate the relationship between work-family conflict and job satisfaction which showed the smaller findings of Ford *et al.*, (2007), Noor (2004). Noor (2004), in a sample of women, found no significant moderating effects of the salience of the family role on the relationship between work-family conflict and job satisfaction.

7. Implications of this Research

The findings of the present study have certain implications for employees as well as for banking organizations. The results of the current study indicate that work-family conflict is negatively related to job satisfaction. Previous research has shown that work-family conflict has harmful consequences for employees as well as for organizations (e.g. Beutell, 2010; Grandey *et al.*, 2005; Kinnunen *et al.*, 2010; Lu *et al.*, 2010; Spector *et al.*, 2007). On the other hand, job satisfaction has been observed to produce many desirable organizational outcomes (Judge *et al.*, 2001; Kinicki *et al.*, 2002). So, a banking organization should adopt measures that can reduce work-family conflict and enhance job satisfaction. Generally, banking organizations require employees to work longer hours, even on weekends and holidays (Saturday). This creates work-family conflict, which further leads to job dissatisfaction. It may be suggested that higher authorities in banking organizations should take necessary action to minimize the work-family conflict experienced banking employees so that employees of banking organizations can get sufficient time for their wife/ husband, children, and other family members, and can fulfill their family and social responsibilities.

8. Conclusion

To work in banking organization is regarded as one of the most stressful occupations in the world. Employees in banking organizations have to face a variety of problems in their jobs and work under constant pressure. Moreover, they often experience work-family conflict due to high job demands and the incompatibility felt between the work roles and the family roles. Since work-family conflict has damaging consequences for employees and their organizations, it is imperative for researchers and organizational leaders to understand the nature of the work-family conflict and its impact on employees and their organizations, in diverse occupations and cultures. The present study contributes in this direction by investigating the relationship of work-family conflict with job satisfaction among banking employees in Bangladesh. This understanding may be helpful for the banking organizations to take necessary action in order to alleviate the work-family conflict and its negative consequences.

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Structural Equation Model: Bankers' Satisfaction on Service Quality

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1. Introduction

The quality is fundamental element for consumer before purchasing a product or enjoying any type of services and it also plays a significant role in measuring the performance of products/ services and the organization as well. This issue has realized the service sector (i.e. banking sector), how to compete and gain competitive edge in the market by providing quality products or services as expected or anticipated by the customers. Banking sector is also among the service sector and considered to be the back bone and major contributor in national and economic development. Quality customer service is also a challenge for the financial institutions to deliver quality of services to their customers to gain their satisfaction. To increase competitive edge these services organizations require knowledgeable and highly skilled management professionals to cope up with these challenges. Financial sector is an important sector which plays a significant role in the development of human capital and ultimately in the economic development of the country. Like the manufacturing and service organizations, concept of quality has also evolved among the financial institution and it helps to develop a competitive environment which ultimately raises the importance of measuring quality of services among the banks. Today the organizations are facing challenges from their customers and these are about good customer services. There are large numbers of Banks in Bangladesh and most of the banks are providing same types of products. Hence to attract customer there are two ways are open one is to reduce interest rate and another one is to provide best customer services.

2. Literature Review

2.1.1 Employee Satisfaction

The employee satisfaction is terminology used to explain whether employees are pleased and contented and accomplishing their desires and needs at work. By using many processes it is clear that the employee satisfaction is a factor in employee inspiration, goal achievement, and positive employee morale in the workplace. Employee satisfaction can be defined as a personal feeling of satisfaction and dissatisfaction. (Gibert, G.R., 2006). The satisfaction of employee will lead to greater employee loyalty. Gilbert state that satisfied employee is the key to a business achievement. Employee satisfaction can be used to analyze how a company performs well in order to satisfy the customers' expectation. According to Nancy C. Morse (1997) "Satisfaction mentions to the level of satisfaction of one's needs, wants and desire. It depends fundamentally upon what an individual wants from the world, and what he gets". Employee satisfaction is a measure of how happy workers are with their job and working atmosphere. It is certain that there may be many factors affecting the organizational effectiveness and one of them is the employee satisfaction. Effective organizations should have a culture that inspires the employee satisfaction, Bhatti & Qureshi, (2007) Employees are more loyal and productive when they are satisfied Hunter & Tietjen, (1997), and these satisfied employees affect the customer satisfaction and organizational productivity, Potterfield, (1999). There is no boundary for the employees to reach the filled satisfaction and it may differ from employee to employee, even institution to institution. Sometimes they need to change their behaviors in order to execute their duties more effectively to achieve greater job satisfaction, Miller, (2006). Having good relationships with the colleagues, high salary, good working conditions, training and education breaks, career developments or any other benefits may be connected with the increasing of employee satisfaction. Employee satisfaction is the terminology used to describe whether employees are happy, contented and fulfilling their desires and needs at work. There are many systems or process support that employee satisfaction is a factor in employee

motivation, employee objective achievement and positive employee morale in the work place. Susan M. Heath field (About.Com). Cranny, Smith & stone (1992) defined Employee Satisfaction as the combination of affective reactions to the differential perceptions of what he/ she wants to receive compared with he/she actually receives. Permitting to Moyes, Shao & Newsome (2008) the employee satisfaction may be defined as in what way pleased an employee is with his or her situation of employment. As Spector (1997) defined job satisfaction as all the feelings that a given individual has about his/ her job and its various aspects. It is an inclusive term that covers job satisfaction of employees and their satisfaction overall with companies' policies, company environment etc. Schermerhorn *et al.*, (2011) listed four categories of factors affecting job satisfaction including challenging jobs, equitable reward system including salary and promotional opportunities, good colleagues' relationships and conducive working environments. Studies on employee's job satisfactions are extensively administered especially in the developed countries. In Malaysia, research was done on job satisfaction from different industrial sectors including; job satisfaction among woman managers in automobile sector (Santhapparaj *et al.*, 2005); factors affecting job satisfaction in two automotive industries (Dawal and Taha 2006); job satisfaction and antecedent of needs among the employees of a leading bank (Lew and Liew, 2006); and factors influencing job satisfaction in two universities by Wong and Heng (2009). Satisfaction reflects the psychological case or emotional feeling that may affect the consumer as a result of comparison between the performance, good service and expectation Kharlabiel and Saydam (2014). Here it is discussed about banking sector hence employee satisfaction is replaced by Bankers' satisfaction.

Abbas (2011) described that financial issues, working environments, supervision and advancement opportunities are associated with the satisfaction of the bank officials. Archana Singh *et al.*, (2011) explained that elements namely, pay, job interest, leadership, career growth, working environment, job responsibility etc. serves as stimulators for employee satisfaction in technology sector. Deshwal (2011) also established that the factors named as working conditions, organizational policies, promotion opportunities, independence, work variety, compensation, work itself, creativity, colleagues' cooperation, responsibility, social status of job, job security, achievement and students' interaction were associated with job satisfaction. Shallu Sehgal (2012) her study of private and public sector banks employees in Shimla district of Himachal Pradesh indicated that socio-economic variable, such as age, gender and income were significantly correlated with job satisfaction of employees. Usop *et al.*, (2013) carried out a study on work performance and job satisfaction of two hundred teachers of twelve selected public schools in the Cotabato city of Philippines. Sayeeduzzafar (2014) in their study on 'HRM Practices and its Impact on Employees Job Satisfaction in Private Sector Banks' reported that HRM practices like training and development, performance appraisal, team work and compensation have significant impact on job satisfaction of employees. From the above it becomes clear that studies on job satisfaction of bank employees are sporadic in nature.

2.1.2 Quality of service

There are three basic types of banking service qualities as per D & M model (1992, 2003); Information Quality, Service Quality and System Quality are considered for this research.

2.1.3 Information Quality

It refers to the quality of the information or the output that the system produces. The operational potential of information quality (Bailey & Pearson, 1983) depends on factors like accuracy, precision, currency, timeliness, reliability, completeness, conciseness, relevance, and the preferred format. The other measures include sufficiency, understandability, freedom from bias, timeliness, reliability, relevance to decisions, comparability, being quantitative (King & Epstein, 1983); completeness of information, accuracy of information (Miller & Doyle, 1987); ease of navigation, privacy, and security (Molla & Licker, 2001), (Palmer, 2002) as well as customization which are some of the system quality measures discussed by Delone and McLean (2003) in the extended model.

2.1.4 Service Quality

A very popular measure for service quality in Information System is developed by (Pitt, Watson, & Kavan, 1995). The dimensions of the instrument include tangibles: reliability, responsiveness, assurance, and empathy. (DeLone & McLean, 2003) originate that the importance of the relationship by the user is mainly increasing in the Information Technology departments, hence, they highlighted on developing a construct measurement on Service Quality in order to update their model.

2.1.5 System Quality

(Delone & Mclean, 1992) branded System Quality as anticipated features of the information system itself. They incorporate four instruments: convenience, flexibility, integration and response time (Bailey & Pearson, 1983). The other measures include: realization of user expectations (Barki & Huff, S.L, 1985); response time (Srinivasan, 1985); reliability, response time, ease of use, ease of learning (Belardo, Karwan, & Wallace , 1982); perceived usefulness of Information System (Franz & Robey, 1986); resource utilization, investment utilization (Kriebel & Raviv, 1980); Information System sophistication, use of new technology (Lehmann, 1986); flexibility of system (Mahmood & Amadeh, 1987); system reliability, system accessibility (Srinivasan, 1985), ease of navigation, privacy, security, and customization (Molla & Licker, 2001), (Palmer, 2002); customization, ease of learning, sophistication, system features, data accuracy, efficiency.

3. Objectives of the study

The main objective of this research paper is to find out the relationship between Bankers' Satisfaction and Quality of Services of private and public banks in Sylhet division, Bangladesh.

3.1 Hypotheses

H1: Relationship between Information Quality and Bankers Satisfaction.

H2: Relationship between Service Quality and Bankers Satisfaction.

H3: Relationship between System Quality and Bankers Satisfaction.

H4: Relationship between Information Quality and Service Quality.

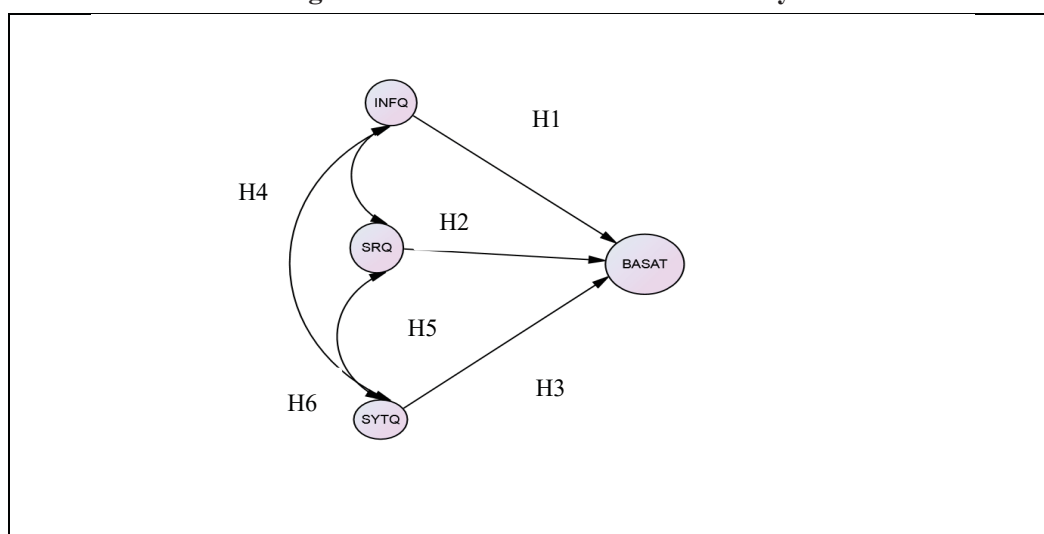
H5: Relationship between System Quality and Service Quality.

H6: Relationship between System Quality and Information Quality.

3.2 Theoretical Model

Based on the theoretical background, the hypothesis and the measurement model are expressed for the endogenous and exogenous variables as shown in Figure-1.

Figure 1: Theoretical Model of the Study



4. Methodology

4.1 Sampling and data collection

A total of 500 questionnaires were distributed to bank employees who are serving at Sylhet Division, Bangladesh as a random sampling. It has two parts, section A was demographic profile and B measured Likert Scale to indicate their satisfaction in five point Likert Scale “5” is strongly agree, “4” is agree, “3” is Neutral, “2” is Disagree and “1” is Strongly Disagree. In section A of the questionnaires bankers need to indicate their gender, age, education and salary. Most of the respondents are men (71%); married (60%), age group was 41 a percent of respondents aged from 20-30 years old, 38 percent aged from 31 to 40 and 15 percent of respondents are aged from 41 to 50 years old. Questionnaire was validated using a pilot survey. The questions in the survey were considered to collect information on Banker Satisfaction from two different banks in Sylhet division. The questionnaire contains fifteen statements in total which represented by three following areas; Information Quality, Service Quality and System Quality. Each item has its own sub-items and the number of related questions that are measured by five point Likert Scale mentioned earlier.

5. Analysis and Result

5.1 Confirmatory Factor Analysis (CFA)

Confirmatory Factor Analysis (CFA) was conducted to assess the construct validity of the theoretical model. In AMOS 23, convergent validity can be assessed and tested using the measurement model by determining the significant t-value of each item's estimated pattern coefficient on its posited underlying construct factor. (Anderson & Gerbing, 1988). The CFA results provide overall fit directories ($\chi^2=633.140$), chi-square degree of freedom 3.861, RMSEA =0.091, GFI=0.845, AGFI=0.801. Few results of the output are reasonable and few are good fit. The Model Fitting is the 1st step of Structural Equation Model (SEM). In this research some indexes are investigated to assess the Model Fitting and express through Table-1. The hypotheses are tested by using SPSS version 22 and Analysis of a Moment Structures (AMOS) version 23. Relatively strong method Structural Equation Modeling (SEM) has been applied for the study for analyzing the relationship between dependent and independent variables by collecting data from field survey to identify the overall relationship among these constructs.

Table 1: The Results of the Model Fitting (Goodness of Fit)

Indicator	Abbreviation	Acceptable Range	Present research
Normed Fit Index	NFI	0.80<	0.695
Goodness of Fit	GFI	0.90<	0.845
Adjusted Goodness of Fit	AGFI	0.90<	0.801
Comparative Fit Index	CFI	0.90<	0.751
Incremental Fit Index	IFI	0.90<	0.754
Root Mean Square Error of Approximation	RMSEA	0-0.085	0.091
Parsimony nor med fit Index	PNFI	0.5-1	0.600
Chi-square	χ^2	As per sample size	633.140
Probably value	p-value	As per sample size	0.000
Chi-square/ Degrees of freedom	χ^2/DF	>3	3.861

5.2 Structural Equation Model

A structural Equation Model (SEM) is fit to the Information Quality, Service Quality, System Quality and Bankers Satisfaction according to the model structure given in the Figure-2. Equally, the conceptual model test is done by SEM through AMOS software version 23. The confidence level of 95 percent, p-value should be less than 0.005 (Zhu 2002). However, according to the results obtained by analyzing the theoretical model and the research final model Quality of Service affect the Bankers Satisfaction. Furthermore it can be said that Quality of Services has impact on the Bankers Satisfaction. Likewise, Information Quality has significant impact Service Quality, Service Quality has significant impact on System Quality, and Information Quality has significant impact on System Quality. The result of SEM is shown through Table-2.

Figure 2: Structural Equation Model-Relationship between Bankers Satisfaction and Service Quality

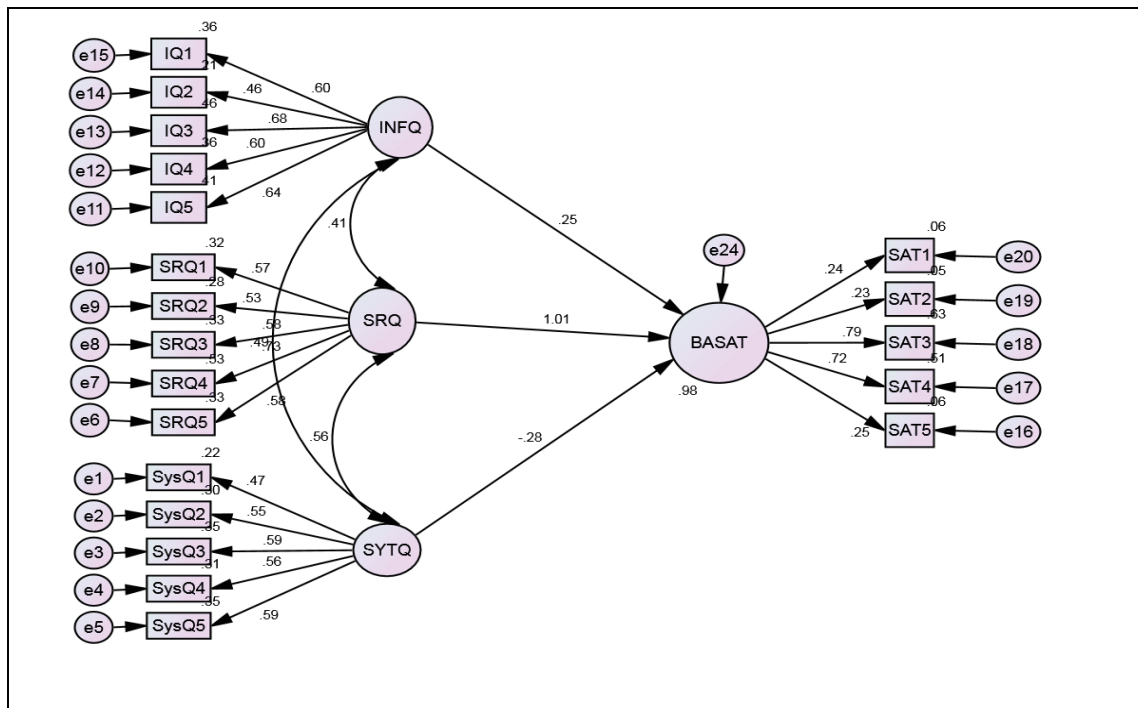


Table 2: The results of Structural Equation model

Variable	Estimate	S.E.	T- value	P -value	Results
H1: BSAT $\leftarrow$ INFQ	0.066	0.024	2.742	0.006	Supported
H2: BSAT $\leftarrow$ SRQ	0.275	0.066	3.920	0.000	Supported
H3: BSAT $\leftarrow$ SYSQ	-0.091	0.036	-2.523	0.012	Supported
H4: INFQ $\longleftrightarrow$ SRQ	0.301	0.064	4.736	0.000	Supported
H5: SYSQ $\longleftrightarrow$ SRQ	0.340	0.061	5.543	0.000	Supported
H6: SYSQ $\longleftrightarrow$ INFQ	0.286	0.055	5.194	0.000	Supported

Source: Field survey

As shown in Table-2, the regression weight of Information Quality to Bankers satisfaction ($t=2.742$; $p<0.05$), Service Quality to Bankers Satisfaction ($t=3.920$, $p<0.05$) and System Quality to Bankers' Satisfaction ($t= -2.523$, $p>0.05$) indicate that Information Quality and Service Quality had significant positive direct effect on Bankers' Satisfaction. Nonetheless, System Quality had significant negative direct effect on Bankers' Satisfaction ($t= -2.523$, $p>0.05$). Causal relationship among Information, Service and System Quality is also expressed through Table-2.

6. Conclusion

The Bankers' satisfaction is relative with Quality of Service and depends on the customer expectations. If banker can enrich themselves by obtaining information then he or she can perform well to provide service, Consequently if he or she knows the system how they provide their service to the customer it would be better for them and Bank management as well. Due to advent of banks in Bangladesh and the high competition among the banks, the banks have done the process reengineering and thereby have been able to make significant perfections in customer service, while the state banks have made less process reengineering in their systems in context of Bangladeshi banking sector. Therefore, customers compare the services received from private banks with the services by state banks. The aim of the study is to find out the relationship or impact of Quality of Services (i.e. Information, Service and System Quality) on Bankers Satisfaction and

casual relationship among Information, Service and System Quality. Therefore, Information Quality is measured by Relevance, Trustworthiness, Transparent, Complete Information and Data Records. Service Quality is measured by Reliable, Availability, Prompt Delivery, Helpful and Efficient. System Quality is measured by Physical Safety, Confidentiality, Responsiveness, Accurate and Customized.

Bankers' Satisfaction is measured by Cost, Timeliness, Friendly, Knowledgeable and Easy Assessable.

7. Limitation

This study is limited because it only focuses on 500 bankers in two of the banks in a particular division. Out of 500 bankers only 350 data were accepted for this research. This research can be replicated the same manner with a large sample size and more variety of variable affecting the Bankers' satisfaction. A wide-ranging study on various banks and also more respondents can boost the generalizability of results in this study.

8. Recommendation for Future Work

Ultimately, this study is conducted in a financial service sector. It is better to conduct this research in different sectors/industries in order to investigate the accurate position of delivery of service.

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Annual Sustainability Report: A Study on Financial Services Industry in Bangladesh

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1. Introduction

Core objective of an entity should be to make future development more sustainable. Because, short-term financial performance does not ensure sustainability of an organization. Besides, financial development of an isolate company may not be sustainable for an economy or for the company itself. Therefore, sustainable development is considered as an integrated concept of economic, social and environmental aspect. In line with this, the Millennium Development Goals (MDGs) were declared at the United Nations (UN) Millennium Summit in 2000 where ensuring environmental sustainability (Goal 7) was one of the eight goals. Subsequently, countries adopted a set of goals to end poverty, protect the planet, and ensure prosperity for all as part of a new sustainable development agenda at an historic UN Summit held on September 25, 2015 (www.un.org). Each of the 17 goals has specific targets to be achieved where everyone needs to do their part: governments, the private sector, civil society and people. Accordingly, national level policies and strategies have been formulated by individual country including Bangladesh. In response to these legislative and regulatory bindings and incentives to promote good citizenship, a good number of financial institutions have been demonstrating their commitment to the earth through incorporating environmental risk in financing; using recycling programs; focusing on energy efficiency, purchase of carbon offsets; and sponsoring environmental events (Habib, Ullah & Rahman, 2011). For building up a greener future, it is obvious to start today with every small green step (Hossain & Rahman, 2013). A reporting framework accommodating all these aspects is known as sustainability reporting. It is beyond of financial reporting. Stakeholders are now very much concerned about more issues beside financial aspect while evaluating performance and predicting prospects of the entity. In this context, global warming and climate change have become important considerations for all types of entities in doing their regular activities and financial services industry is not exception to that. Therefore, financial services industry is to think about profit, people and planet all together in conducting business operations and reporting thereof. At the same time, stakeholders are expecting to have sufficient, accurate and timely information regarding organizational stance in these aspects for proper evaluation. An annual sustainability report may serves the purpose.

It is general perception that merchandising and manufacturing companies are responsible for global climate change. As a result, a significant number of sustainability reporting activities have been done in manufacturing sectors of developed and developing countries (Banerjee, Mustafa, Hossain & Ahmed, 2017). However, importance of sustainability reporting by financial services industry is gaining lots of focus even in developing countries. Hossain et al., (2016) highlights the importance of sustainability reporting in financial institutions which are funding organizations and projects that are responsible for contamination of social as well as global environment. Besides, banking and non-banking financial institutions are using electricity, fuel, gas, water, energy, etc. for operating their daily activities. In this context, sustainability reporting by financial service industry is necessity. For that purpose, sustainability is associated with the use of natural resources and issues related to environmental concerns. Chandler & Werther, (2014) define sustainability as meeting the needs of the present without compromising the ability of future generations to meet own needs. Originally sustainability reporting focused solely on the environment but its scope has been broadened to include ethical/ social issues, employee treatment, community involvement, and the organizational structure in place to control all these aspects (Kolk, 2008). In this perspective, it is important to observe the status of sustainability reporting by Bangladeshi financial services

industry and that of other neighboring countries; and to know the perceptions of reporting entities and regulatory authorities regarding the issue. The current study covers these issues.

2. Objectives and Methodology

2.1 Objectives

The Financial Services Industry (FSI) may make disclosure on sustainability issues either in the corporate annual report or in a separate Annual Sustainability Report (ASR). The overall objective of the study is to observe status of ASR published by FSI of Bangladesh. The specific objectives are:

- to show status of ASR in the world and some other neighboring countries of Bangladesh;
- to portray status of ASR of FSI in Bangladesh; and
- to compile perceptions of the regulators in this regard.

2.2 Methodology

In this study, both secondary and primary data have been used. Secondary data have collected from ASR of selected organizations, GRI website and other relevant publications. Though, there are several regulatory framework for framing sustainability report, GRI guidelines have been considered as a base-document. In Bangladesh, only 3 banks and 1 non-bank financial institution (NBFI) are now preparing ASR. Therefore, these 4 institutions have been studied under FSI. However, FSI includes some other organizations like insurance company. For comparing with neighboring countries, the South Asian Association for Regional Cooperation (SAARC) countries have been considered in the study. Contents analysis technique has been applied as a method data collection. Primary data have been collected through conducting interview and sharing with concerned personnel including executives working in regulatory agencies, executives are assigned for preparing ASR, executives of other institutions not-publishing ASR at present and few academics. For analysis, most of the data have been presented in tabular form.

3. Literature Review

SASB (2016) believes that corporate reporting must extend beyond financial statements to facilitate the measurement and reporting of sustainability information that will enhance a decision makers' understanding of all material risks and opportunities. Therefore, a number studies have undertaken by researchers of different countries. The study of Alonso-Almeida, Llach and Marimon (2014) analyses the worldwide diffusion of the Global Reporting Initiative's (GRI) Sustainability Report in all economic sectors from 1999 to 2011. They found that close attention has been paid to the two leading sectors worldwide: the financial and energy sectors. They opine that the energy sector has adopted GRI reporting in an effort to be more sustainable as it is more visible, polluting, and international whereas the financial sector could regain market credibility and attract new investors, and GRI reporting could help it to construct a new identity defined by legitimate behaviors and an improved image. Elkington (1997) thinks that the GRI builds upon the foundations of triple bottom line to provide a framework for reporting and social accounting and provides a comprehensive sustainability reporting framework based on a global, multi-stakeholder process. Similarly, Hohnen (2012) opines that GRI is now the most popular international framework for reporting the triple bottom line of sustainable development economic, social and environmental performance. Barkemeyer, Preuss and Lee (2014) found that the GRI has been successful in terms of output effectiveness by promoting the dissemination of sustainability reporting, in particular among Asian and South American companies. According to Halder (2015), GRI provides the world's most widely used standards on sustainability reporting and disclosure in over 90 countries where about 80 percent companies use GRI's Standards.

Amran and Ooi (2014) found that, for businesses to ascertain their governance, efficiency, accountability and transparency through corporate sustainability disclosure, stakeholders' steps are vital where collaboration with targeted stakeholders will help the business meet stakeholders' demands and increase the organization's future sustainability goals. Burritt and Schaltegger (2010) said that assessment of recent literature leads to the conclusion that both management decision

making, through problem solving and scorekeeping, and a critical approach, through awareness raising, contribute to the development of sustainability accounting and reporting; however, the development of sustainability accounting and reporting should be orientated more towards improving management decision making. Adams and Frost (2008) examined the process of developing Key Performance Indicators (KPIs) for measuring sustainability performance and the way in which sustainability KPIs are used in decision-making, planning and performance management. The findings of the study indicate that the organizations are integrating environmental indicators, and increasingly also social indicators, into strategic planning, performance measurement and decision-making including risk management. Smith *et al.*, (2007) show that the disclosure of environmental information is not a priority for companies in Malaysia. Yadav (2016) observes that the sustainability reporting scenario is still in primary stage in Indian commercial banks. He pronounces that there is lack of policy support and guideline. Dissanayake *et al.*, (2016) examine sustainability reporting in publicly listed companies in Sri Lanka and found that there is a major focus on social indicators, despite the poor environmental record in the country. Generally, companies make environmental disclosures to build a good corporate citizen image (Alrazi *et al.*, 2009). The quantity and quality of environmental disclosures are low with larger companies and companies operating in environmentally sensitive industries disclosing more and better environmental information (Buniamin, 2010).

A number of studies (e.g. Banerjee, Mustafa, Hossain & Ahmed, 2017; Mahmud, Biswas & Islam, 2017; Hossain, Bir, Tarique & Momen, 2016; Islam, 2016; Khan, 2015; Khan, Islam, Fatima & Ahmed, 2011; Belal, 2000) have been conducted for examining level of sustainability reporting in Bangladesh. Belal (2000) covers 30 annual reports of Bangladeshi companies relating to the year 1996 and shows that very limited environmental disclosure has been made. Khan, Islam, Fatima and Ahmed (2011) conducted study on the annual reports of banks for the year 2008-2009 and show that sustainability reporting by major banks based on GRI indicators in Bangladesh is relatively scanty. Khan (2015) finds that banking sector in Bangladesh responds relatively late in case of sustainability reporting. He believes that a focus on sustainability helps organizations manage their social and environmental impacts and improve operating efficiency and natural resource stewardship, and it remains a vital component of shareholder, employee, and stakeholder relations. Islam (2016) conducted a study titled Green & Sustainability Reporting and Legitimacy in the Banking Industry: Bangladesh Perspective following content analysis of annual report. He did not consider annual sustainability reports of banks. Hossain, Bir, Tarique and Momen (2016) completed a study on Disclosure of Green Banking Issues in the Annual Reports: A Study on Bangladeshi Banks. As per their opinion, there is a lack of consistency in reporting due to absence of standardized reporting guidelines. Similarly, Mahmud, Biswas and Islam (2017) show the current practices of sustainability reporting in annual report of the banking sector of Bangladesh according to GRI guideline without considering separate sustainability report. Banerjee, Mustafa, Hossain and Ahmed (2017) conducted a study on sustainability reporting practices in banks of Bangladesh. They studied annual sustainability reports along with corporate financial report, however, they do not cover other types of financial institutions. The current study covers annual sustainability reports of banks and other types of financial institutions. It also shows some global status on sustainability reporting based on GRI guidelines.

4. Regulatory Framework for Sustainability Reporting

Sustainability reporting cycle includes a regular program of data collection, communication, and responses to different stakeholders and events. Sustainability reporting indicates organization's practice of public disclosure on its economic, environmental and social impacts of daily activities. Due to its importance, several initiatives have been undertaken at national and international level for promoting sustainability reporting. There are several internationally accepted sustainability reporting frameworks, which are summarized in the following sub-sections.

4.1 Global Regulatory Framework

Global Reporting Initiative (GRI) is an international independent organization that has pioneered corporate sustainability reporting since 1997 (www.globalreporting.org). It helps businesses, governments and other organizations understand and communicate the impact of business on critical sustainability issues such as climate change, human rights, corruption and many others. The first version of GRI guidelines was issued in 2000 and the second generation of guidelines (G2) was unveiled in 2002. GRI G3 was issued in 2006 and in 2011 G3.1 was launched with updates on gender, community and human rights. GRI issued its G4 Sustainability Reporting Guidelines in 2013 in two parts – Reporting Principles and Standard Disclosures, and Implementation Manual. Besides, a set of standards has been issued in 2016 by the Global Sustainability Standards Board (GSSB) of GRI including foundation (GRI 101), general disclosures (GRI 102), management approach (GRI 103) and topic-specific standards (GRI 200: Economic; GRI 300: Environmental; and GRI 400: Social). Moreover, GRI issued G4 Sector Disclosure Guidelines for financial services sector (FSS). GRI has global strategic partnerships with the Organisation (Organization) for Economic Co-operation and Development (OECD), the United Nations Environment Programme (Program) (UNEP) and the United Nations Global Compact (UNGC). GRI reporting framework enjoys synergies with the guidance of the International Finance Corporation (IFC), the International Organization for Standardization's ISO 26000, the United Nations Conference on Trade and Development (UNCTAD), and the Earth Charter Initiative (ECI).

The OECD works to promote policies that will improve the economic and social well-being of people around the world. It provides a forum in which governments can work together to share experiences and seek solutions to common problems like economic, social and environmental change. The OECD has issued guidelines for multinational enterprises which provide recommendations for responsible business conduct in areas such as employment and industrial relations, human rights, environment, information disclosure, combating bribery, consumer interests, science and technology, competition, and taxation. Its guidelines recognized international norms and normative frameworks on sustainability such as the United Nations Guiding Principles on Business and Human Rights, the International Labour (Labor) Organization (ILO) Conventions, the UN Global Compact (www.oecd.org).

The United Nations Global Compact (UNGC) is the largest policy initiative for businesses that are committed to aligning their operations and strategies with ten universally accepted principles in the areas of human rights, labor, environment and anti-corruption. These principles are derived from: the universal declaration of human rights, the ILO's declaration on fundamental principles and rights at work, the Rio declaration on environment and development, and the UN convention against corruption (www.unglobalcompact.org). The UNGC signatories are required to issue an annual Communication on Progress (COP), a public disclosure to stakeholders on progress made in implementing the ten principles. The UNGC's multi-year strategy is to drive business awareness and action in support of achieving the Sustainable Development goals (SDG) by 2030.

The Sustainability Accounting Standards Board (SASB) was established in 2011 as an independent standards-setting organization to meet the needs of investors by fostering high-quality disclosure of material sustainability information including environmental, social and governance (www.sasb.org). The SASB standards are intended for voluntary use by public companies in making disclosures which are market-driven responses to the need for sustainability information (SASB, 2016). A conceptual framework was issued by SASB in 2013 while an exposure draft of conceptual framework has been in 2016. The SASB has developed industry specific standards for Health Care, Technology & Communications, Non-Renewable Resources, Renewable Resources & Alternative Energy, Transportation, Services, Resource Transformation, Consumption, Infrastructure and Financials. Under financials industry, there are 7 types of organizations- (i) Commercial banks, (ii) Investment banking & brokerage, (iii) Asset management & custody activities, (iv) Consumer Finance, (v) Mortgage finance, (vi) Security & Commodity Exchange, and (vii) Insurance. In February 2014, a provisional version of commercial banks sustainability accounting standard has been issued.

International Organization for Standardization (ISO) is an independent, non-governmental international organization with a membership of 162 national standards bodies (www.iso.org). ISO 26000 is a guidance standard on how business and organizations can operate in a socially responsible way. The standard states that an organization should, at appropriate intervals, report about its performance on social responsibility to the stakeholders affected. ISO 26000 defines 7 core subjects: (i) organizational governance, (ii) human rights, (iii) labor practices, (iv) the Environment, (v) fair operating practices, (vi) consumer issues, and (vii) community involvement and development.

The International Integrated Reporting Council (IIRC) is a global coalition of regulators, investors, companies, standard setters, the accounting profession and NGOs (www.theiirc.org). In 2014, the IIRC published an international integrated reporting framework spelled as <IR> aimed primarily at producing information for long-term investors. The <IR> framework offers guiding principles and content elements that govern the content of an integrated report. An integrated report is a concise communication about how an organization's strategy, governance, performance and prospects, in the context of its external environment, lead to the creation of value in the short, medium and long term.

Carbon Disclosure Project (CDP) wants to see a thriving economy that works for people and planet in the long term (www.cdp.net). To do this it focus investors, companies and cities on taking urgent action to build a truly sustainable economy by measuring and understanding their environmental impact. For this purpose, CDP asks companies, cities, states and regions for disclosure on their environmental performance. It provides a global reporting system that collects information from the world's largest organizations on their climate change risks, opportunities, strategies and performance, and the way in which they consume and affect natural resources including water and forests.

The Greenhouse Gas Protocol (GHG Protocol) provides standards, guidance, tools, and trainings for business and government leaders to quantify and manage GHG emissions and become more efficient, resilient, and prosperous (www.ghgprotocol.org). The GHG Protocol, a decade-long partnership between the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), is working with businesses, governments, and environmental groups around the world to build a new generation of credible and effective programs for tackling climate change. It establishes comprehensive, global, standardized frameworks for measuring and managing emissions from private and public sector operations, value chains, products, cities, and policies. The GHG Protocol also offers developing countries an internationally-accepted management tool to help their businesses compete in the global marketplace and governments to make informed decisions about climate change. Likewise, the unique tripartite structure of the ILO gives an equal voice to workers, employers and governments to ensure that the views of the social partners are closely reflected in labor standards and in shaping policies and programs (www.ilo.org). The principles laid down in this universal instrument offer guidelines to multi-national enterprises, governments, and employers' and workers' organizations in such areas as employment, training, conditions of work and life, and industrial relations. Equally, the Office of the United Nations High Commissioner for Human Rights (OHCHR) represents the world's commitment to universal ideals of human dignity and it has a unique mandate from the international community to promote and protect all human rights (www.ohchr.org). Furthermore, the United Nations-supported Principles for Responsible Investment (PRI) Initiative is an international network of investors working together to put some principles for responsible investment into practice (www.unpri.org). Its goal is to understand the implications of sustainability for investors and support signatories to incorporate these issues into their investment decision making and ownership practices. There are some mandatory indicators which represent the minimum set of public information that signatories are required to report and disclose. In the same way, the Climate Disclosure Standards Board (CDSB) is an international consortium of business and environmental NGOs (www.cdsb.net). The CDSB framework for reporting environmental

information & natural capital is designed to help organizations prepare and present environmental information in mainstream reports for the benefit of investors. It allows investors to assess the relationship between specific environmental matters and the organization's strategy, performance and prospects.

4.2 Local Regulatory Framework

Since 1989 in Bangladesh a separate ministry for forest and environment has been functioning in order to conserve the environment of the country. In 1995, UNDP supported National Environmental Management Action Plan was primed and in the same year Bangladesh Environmental Conservation Act 1995 was promulgated and amended in 2002. Under this Act, companies may be asked to disclose environmental information as and when required (Rahman and Muttakin, 2005). Besides, there are National Environmental Policy 1992, Environment Pollution Control Ordinance 1977, Environmental Quality Standards for Bangladesh 1991, National Environment Management Action Plan 1995, Environment Conservation Act 1995 (amended in 2002), Environment Conservation Rules 1997 (amended in 2003), EIA Guidelines for Industry 1997, Labour Policy 2012, Bangladesh Labour Act 2006, Labour Welfare Foundation law 2006, Bangladesh Labour (Amended) Law 2013, Labour Relations under Labour Laws 1996, National Child Labour Elimination Policy 2010, Bangladesh Factory Act 1965, Bangladesh Factory Rules 1979, OSH Policy 2011, The Employees State Insurance Act 1948, The Employer's Liability Act 1938, Maternity Benefit Act 1950, Workmen's Compensation Act 1923, The Employment of Children Act 1938, Bangladesh Industrial Act 1974, National 3-R Strategy 2010 (3R: Reduce, Reuse and Recycle), Ship-Breaking and Hazardous Waste Management Rules 2010, Biomedical Waste Management Rules 2008, Draft National Solid Waste Management Rules 2010, Draft National River Conservation Act 2011, Disaster Management Act 2012, Public Health Emergency Provisions Ordinance 1994, Biomedical Waste Management Rules 2008, Climate Change Act 2010, National Plan for Disaster Management 2010-2015, Sound Pollution Law 2006, Ship Breaking and Hazardous Waste Management Rules 2010, Water Supply and Sewerage Authority Ordinance 1963, National Health Policy 2011, National Biodiversity Strategy and Action plan 2004, Bangladesh Wildlife Conservation and Security Act 2012, Bangladesh Wild Life (Preservation) Act 1974, Bio Safety Rules 2012, Forest (Amendment) Act, 2012, Forest Policy 1994, Social Forestry Rules 2004, Draft Tree Conservation Act 2012, The Private Forests Ordinance Act 1959, Forest Transit Rule 2011, Deer Rearing Policy 2009, The Protection and Conservation of Fish Act 1950, Draft Wetland Policy 1998, The Protection and Conservation of Fish Rules 1985, The Protection and Conservation of Fish Act 1950, National Conservation Strategy 1992, Private Fisheries Protection Act 1889, Revised National Conservation Act 2010, Social Forestry Rules 2004¹, etc. The most important policy guidelines related with sustainability reporting by banks and financial institutions are given by Bangladesh Bank (BB).

On February 27, 2011, BB issued Policy Guidelines for Green Banking for all scheduled banks. As per the guidelines, banks should publish independent green annual report following internationally accepted format like Global Reporting Initiatives (GRI) targeting their stakeholders. It is also mentioned here that there should be arrangement for verification of the publication by an independent agency or acceptable third party. Initially, BB instructed that the time lining for the actions to be taken should not exceed December 31, 2013. By another circular letter², BB instructed newly established scheduled banks to comply with the guidelines by June 30, 2015. Subsequently, BB extended this time-frame up to June 30, 2015 for all banks³. It is noted that similar type of instruction⁴ was given by BB to all financial institutions licensed under Financial Institution Act 1993.

¹SFD Circular # 02/2017, Dated February 8, 2017

²GBCSR Circular Letter # 05/2013, Dated September 11, 2013.

³GBCSR Circular # 08/2013, Dated December 24, 2013.

⁴GBCSR Circular # 04/2013, Dated August 11, 2013.

Therefore, preparation and publication of annual sustainability report (ASR), following GRI or any other international guidelines, is mandatory for all banks and financial institutions operating in Bangladesh. Besides, verification of ASR is mandatory for them. Moreover, they are to report BB about publication status of ASR on regular basis. Sustainable Finance Unit in a Bank will coordinate sustainability reporting activities in collaboration with Finance and Accounts Department of the bank⁵.

5. Status of Sustainability Reporting Organizations

Among other regulations, GRI framework got priority to the reporting entity for preparing sustainability report (SR). Organizations in the different parts of the world are now preparing SR. Subsequent parts of this section present status of sustainability reporting by different organizations.

5.1 Sustainability Reporting Organizations in the World

Table-5.1 depicts a summary of sustainability reporting by organizations in the different regions of the world. As per GRI database, a total number of 37,968 reports have been prepared by 10,031 organizations in the whole world from 1999 to 2016. Out of these, most of the organizations and reports belong to Europe (14,440 reports by 3668 organizations) whereas the least reporting organizations are in Oceania region (1544 reports by 376 organizations).

Table 5.1: Sustainability Reporting Organizations in the World (From 1999 to 2016*)

S/N	Region	No. of Reporting Organizations	No. of Reports
A.	Africa	452	2262
B.	Asia	3018	10414
C.	Europe	3668	14440
D.	Latin America & the Caribbean	1362	4647
E.	Northern America	1155	4661
F.	Oceania	376	1544
	Total	10031	37968

*Year of publication of the report, reporting year will be the preceding year

Source: <http://database.globalreporting.org/search/>, accessed on January 17, 2017

5.2 Sustainability Reporting Organizations in SAARC Countries

A summary of sustainability reporting organizations in SAARC countries is presented in following Table 5.2. It is found from the table that 215 organizations have prepared 690 reports during 1999-2016. It is depicted that none of the organization of Afghanistan, Bhutan, Maldives, and Nepal has prepared such report in any of the years. The highest reporting organizations have been found in India where a total number of 166 organizations have prepared 525 reports. In Sri Lanka, 74 reports have been published by 18 organizations whereas 66 reports have been published by 21 organizations of Pakistan. A total number of 10 Bangladeshi companies have published 25 sustainability reports from 1999 to 2016.

⁵ SFD Circular # 02/2016, Dated December 1, 2016.

Table 5.2: Sustainability Reporting Organizations in SAARC Countries (From 1999 to 2016*)

S/N	Region	No. of Reporting Organizations	No. of Reports
A.	Afghanistan	0	0
B.	Bangladesh	10	25
C.	Bhutan	0	0
D.	India	166	525
E.	Maldives	0	0
F.	Nepal	0	0
G.	Pakistan	21	66
H.	Sri Lanka	18	74
	Total	215	690

*Year of publication of the report, reporting year will be the preceding year

Source: <http://database.globalreporting.org/search/>, accessed on January 17, 2017

Table-5.3 portrays status of sustainability organizations in SAARC countries in 2016 only. A number of 59 reports of 56 Indian, 5 reports of 5 Pakistani, 5 reports of 5 Sri Lankan and 4 reports of 4 Bangladeshi organizations have been found on the GRI website. In this year, 3720 reports have been published by 3687 in all over the world out of which 1233 reports have been published by 1219 organizations in Asia. In the same way, 73 reports of 70 organizations of SAARC countries have been found in 2016.

Table 5.3: Sustainability Reporting Organizations in SAARC Countries (Only in 2016*)

S/N	Region	No. of Reporting Organizations	No. of Reports
A.	Afghanistan	0	0
B.	Bangladesh	4	4
C.	Bhutan	0	0
D.	India	56	59
E.	Maldives	0	0
F.	Nepal	0	0
G.	Pakistan	5	5
H.	Sri Lanka	5	5
	Total in SAARC	70	73
	Total in Asia	1219	1233
	Total around the World	3687	3720

*Year of publication of the report, reporting year will be the preceding year

Source: <http://database.globalreporting.org/search/>, accessed on January 17, 2017

Out of all types of industries, Financial Services Industry (FSI) has published about 14 percent reports in 2016 (Table-5.4). However, 100 percent of reporting organizations in Bangladesh are belong to FSI which is 80 percent in case of Sri Lanka. India is maintaining similarity with world trend for publishing sustainability reports where about 13 percent entities are financial services providing organizations.

Table 5.4: Sustainability Reporting Organizations in SAARC Countries (Only FSI in 2016*)

S/N	Region	No. of Reporting FSI Organizations	Reporting FSI as % of All Types Organizations	No. of FSI Reports	FSI Reports as % of All Types of Organizations
1.	Bangladesh	4	100	4	100
2.	India	7	12.5	8	13.56
3.	Pakistan	0	0	0	0
4.	Sri Lanka	4	80	4	80
	Total in SAARC	15	21.43	16	21.92
	Total in Asia	146	11.98	148	12.00
	Total around the World	512	13.89	517	13.90

*Year of publication of the report, reporting year will be the preceding year

Source: <http://database.globalreporting.org/search/>, accessed on January 17, 2017

A list of FSI organizations in SAARC countries prepared Annual Sustainability Reports (ASR) in 2016 is shown in Table-5.5. It has been found that 3 banks and 1 Non-bank Financial Institution (NFFI) under FSI of Bangladesh have prepared ASR in 2016⁶. Similarly, 6 banks and 1 Non-bank Financial Institution (NFFI) under FSI of India have prepared such report in 2016. On the contrary, no bank of Sri Lanka has prepared ASR in 2016. A detailed list of financial services organizations in SAARC countries preparing ASR is presented in Appendix-I.

Table 5.5 Name of Organizations in SAARC Countries Prepared ASR (Only FSI in 2016*)

S/N	Name of Organization	Name of Country	Sector	Size
1.	Bank Asia	Bangladesh	Bank	MNE
2.	Mutual Trust Bank Ltd.	Bangladesh	Bank	Large
3.	Prime Bank Limited	Bangladesh	Bank	Large
4.	IDLC	Bangladesh	NBFI	Large
5.	Axis Bank	India	Bank	MNE
6.	HDFC Bank	India	Bank	Large
7.	ICICI Bank	India	Bank	Large
8.	Punjab National Bank	India	Bank	Large
9.	State Bank of India	India	Bank	Large
10.	Yes Bank	India	Bank	Large
11.	Mahindra & Mahindra Financial Services	India	NBFI	Large
12.	HNB Assurance PLC	Sri Lanka	-	Large
13.	Mercantile Investments and Finance PLC	Sri Lanka	NBFI	SME
14.	Soft-logic Life Insurance	Sri Lanka	Insurance	Large
15.	Union Assurance	Sri Lanka	-	Large

*Year of publication of the report, reporting year will be the preceding year

Source: <http://database.globalreporting.org/search/>, accessed on January 17, 2017

5.3 Sustainability Reporting Organizations in Bangladesh

A total number of 15 organizations of Bangladesh have prepared sustainability reports from 1999 to 2017 as summarized in Table-5.6. Some of them have prepared earlier but discontinued at this moment e.g., British American Tobacco Bangladesh, BEIL, Square Fashions, VIYELLATEX Group and Robi Axiata Limited. On the other hand, some organizations have started recently to published such report either GRI compliant or non-GRI/ citing-GRI e.g., BRAC Bank Limited, Eastern Bank Limited, Janata Bank Limited, Olympic and Southeast Bank Limited. At present 4 financial services organizations (Bank Asia, IDLC, Mutual Trust Bank Limited and Prime Bank Limited) and 1 textiles & apparel organization (DBL Group) of Bangladesh are publishing sustainability report on regularly basis.

⁶ Recently Janata Bank Limited, BRAC Bank Limited, Eastern Bank Limited, Southeast Bank Limited have published Non-GRI sustainability reports.

Table 5.6: Name of Organizations in Bangladesh Prepared ASR (From 1999 to 2017*)

S/N	Name of Organization	Sector	Size	Reports
1.	Bank Asia	Financial Services	MNE	2016, 2015, 2014 & 2013
2.	BEIL	Financial Services	Large	2013 & 2012
3.	British American Tobacco Bangladesh	Tobacco	Large	2006 & 2003
4.	DBL Group	Textiles and Apparel	Large	2016, 2015 & 2014
5.	IDLC	Financial Services	Large	2017, 2016, 2015, 2014, 2013 & 2012
6.	Mutual Trust Bank Ltd.	Financial Services	Large	2016 & 2015
7.	Prime Bank Limited	Financial Services	Large	2017, 2016, 2015 & 2014
8.	Robi Axiata Limited	Telecommunications	MNE	2015
9.	Square Fashions	Textiles and Apparel	Large	2011
10.	VIYELLATEX Group	Textiles and Apparel	Large	2013, 2011 & 2010

*Year of publication of the report, reporting year will be the preceding year

Source: <http://database.globalreporting.org/search/>, accessed on October 7, 2017

Table 5.7: Name of Organizations Recently Published Non-GRI/ Citing-GRI Reports

S.N.	Name of Organization	Sector	Size	Reports
1.	BRAC Bank Limited	Financial Services	Large	2017 (Non-GRI)
2.	Eastern Bank Limited	Financial Services	Large	2017 (Citing-GRI)
3.	Janata Bank Limited	Financial Services	Large	2016 (Non-GRI) & 2015 (Citing-GRI)
4.	Olympic	Food and Beverage Products	Large	2017 (Non-GRI) & 2016 (Non-GRI)
5.	Southeast Bank Limited	Financial Services	Large	2017 (Non-GRI) & 2016 (Non-GRI)

*Year of publication of the report, reporting year will be the preceding year

Source: <http://database.globalreporting.org/search/>, accessed on October 7, 2017

6. Status of Sustainability Reporting

6.1 Status of Sustainability Reporting in Annual Report by Listed Banks of Bangladesh

A study has been conducted by Mahmud, Biswas and Islam (2017) based on corporate annual reports of listed banks in Bangladesh for unveiling sustainability reporting practices following GRI framework by listed banks of Bangladesh. Table-6.1 presents the status of sustainability reporting in corporate annual reports of listed banks in Bangladesh. As per findings of Mahmud, Biswas and Islam (2017), 15 listed banks have made separate sustainability disclosure in their corporate annual reports either following or without following GRI framework. It means, remaining 15 listed banks did not make disclosure related with their sustainability.

Table 6.1: Status of Sustainability Reporting in Corporate Annual Reports of Listed Banks in Bangladesh

S/N	Name Bank	Year-2011	Year-2012	Year-2013	Year-2014	Year-2015
1.	Bank Asia Limited	Disclosed without following GRI Framework	Disclosed according to GRI G-3 framework	Disclosed according to GRI G-3/3.1 framework	Disclosed according to GRI G-3 /3.1 framework	Disclosed according to GRI G-4 framework
2.	Prime Bank Limited	Disclosed without following GRI Framework	Disclosed without following GRI Framework	Disclosed according to GRI G-3.1 framework	Disclosed according to GRI G-4 framework	Disclosed without following GRI Framework

S/N	Name Bank	Year-2011	Year-2012	Year-2013	Year-2014	Year-2015
	Mutual Trust Bank Limited	Not Disclosed	Not Disclosed	Not Disclosed	Not Disclosed	Disclosed without following GRI Framework
4.	Brac Bank Limited	Not Disclosed	Not Disclosed	Not Disclosed	Not Disclosed	Disclosed without following GRI Framework
5.	Dhaka Bank Limited	Disclosed without following GRI Framework	Disclosed without following GRI Framework	Disclosed without following GRI Framework	Disclosed without following GRI Framework	Disclosed without following GRI Framework
6.	Eastern Bank Limited	Not Disclosed	Disclosed without following GRI Framework	Disclosed without following GRI Framework	Not Disclosed	Disclosed without following GRI Framework
7.	Jamuna Bank Limited	Not Disclosed	Not Disclosed	Not Disclosed	Not Disclosed	Disclosed without following GRI
8.	Mercantile Bank Limited	Not Disclosed	Disclosed without following GRI Framework	Disclosed without following GRI Framework	Disclosed without following GRI Framework	Disclosed without following GRI Framework
9.	Rupali Bank Limited	Disclosed without following GRI Framework	Disclosed without following GRI Framework	Disclosed without following GRI Framework	Disclosed without following GRI Framework	Disclosed without following GRI Framework
10.	Shahjalal Islami Bank Limited	Not Disclosed	Not Disclosed	Disclosed without following GRI Framework	Disclosed without following GRI Framework	Disclosed without following GRI Framework
11.	Social Islami Bank Limited	Not Disclosed	Not Disclosed	Not Disclosed	Not Disclosed	Disclosed according to GRI G-4 framework
12.	Southeast Bank Limited	Disclosed without following GRI Framework	Disclosed without following GRI Framework	Disclosed without following GRI Framework	Disclosed without following GRI Framework	Disclosed without following GRI Framework
13.	United Commercial Bank Limited	Not Disclosed	Not Disclosed	Disclosed without following GRI Framework	Disclosed without following GRI Framework	Disclosed according to GRI G-4 framework
14.	Standard Bank Limited	Not Disclosed	Not Disclosed	Not Disclosed	Disclosed without following GRI Framework	Disclosed as per UN sustainable development goals without following GRI
15.	IFIC Bank Limited	Not Disclosed	Not Disclosed	Not Disclosed	Disclosed without following GRI	Not Disclosed

Source: Mahmud, Biswas and Islam (2017)

6.2 Status of Sustainability Reporting in Annual Sustainability Report (ASR)

As stated earlier, a total number of 4 organizations under FSI publish separate sustainability report annually. The reporting organizations are Bank Asia Limited (BAL), Prime Bank Limited (PBL), Mutual Trust Bank Limited (MTBL) and IDLC Finance Limited (IDLC). As all of 4 organizations did not complete ASR for the year 2016, analysis has been done based on ASR of 2015. Besides, there are two options for preparing ASR in accordance with GRI-Core and Comprehensive. However, none of the Bangladeshi companies follows comprehensive option, therefore, compliance status has been presented based on core option. It is also mentioned earlier that FSI of only 3 countries (Bangladesh, India and Sri Lanka) in SAARC region publish sustainability report. Therefore, relevant data of 4 Indian and 4 Sri Lankan financial institutions have also been presented under each of the parts of Bangladeshi FSI. The Indian organizations are Axis Bank (AB), HDFC

Bank (HDFC), Mahindra & Mahindra Financial Services (MMFS) and Yes Bank (YB) whereas Sri Lankan organizations are Union Assurance (UA), Softlogic Insurance (SI), HNB and Mercantile Investment (MI). For maintaining confidentiality, identity of the organization has not been presented in the analysis part.

6.2.1 General Standard Disclosures in Annual Sustainability Report (ASR) by FSI

G4 guidelines of GRI require to include general standard disclosure in the first part of ASR under 7 areas – (i) Strategy and Analysis, (ii) Organizational Profile, (iii) Identified Material Aspects and Boundaries, (iv) Stakeholder Engagement, (v) Report Profile, (vi) Governance, and (vii) Ethics and Integrity. There are total number of 34 items of disclosure in accordance with core option of G4 guidelines and two banks have complied with all requirements whereas other two institutions made 33 disclosures (Table-6.2). All organizations of India and Sri Lanka complied with all requirements of G4.

Table 6.2: General Standard Disclosures in Annual Sustainability Report (ASR) by FSI

S/N	Area of Disclosure	No. of Required Items	No. of Items Disclosed			
			FSI 1	FSI 2	FSI 3	FSI 4
1.	Strategy and Analysis (Impacts and decision-makers' views)	1	1	1	1	1
2.	Organizational Profile (Overview on internal and external aspect)	14	14	14	14	13
3.	Identified Material Aspects and Boundaries (Materiality within and outside organization)	7	7	7	7	7
4.	Stakeholder Engagement (identification, selection, key topics and organization's response)	4	4	4	4	4
5.	Report Profile (Time, concern and reporting option)	6	6	5	6	6
6.	Governance (Responsible committee and impact)	1	1	1	1	1
7.	Ethics and Integrity (values, principles, standards of behavior)	1	1	1	1	1
	Total- Bangladesh	34	34	33	34	33
	Total-India	34	34	34	34	34
	Total- Sri Lanka	34	34	34	34	34

Source: Survey Data

6.2.2 Disclosures on Management Approach in ASR by FSI

Table-6.3 presents status of generic disclosure on management approach regarding economic, environmental and social issues. All of the organizations of Bangladesh, India and Sri Lanka have made required disclosure in ASR for the year 2015.

Table 6.3: Generic Disclosures on Management Approach by FSI

Area of Disclosure	No. of Required Items	No. of Item Disclosed			
		FSI 1	FSI 2	FSI 3	FSI 4
Total- Bangladesh	1	1	1	1	1
Total-India	1	1	1	1	1
Total- Sri Lanka	1	1	1	1	1

Source: Survey Data

6.2.3 Specific Disclosures on Economic Aspects in ASR by FSI

As per GRI G4 guidelines, entity is required to make specific disclosure on economic aspects. In accordance with core option, a total number of 9 items are to be disclosed under 4 areas – (i) Economic Performance, (ii) Market Presence, (iii) Indirect Economic Impacts and (iv) Procurement Practices. It is found from Table 6.4 that one FSI of Bangladesh and two of Sri Lanka have made disclosure of all items. However, one of the FSI of Sri Lanka has disclosed only one item.

Table 6.4: Specific Disclosures on Economic Aspects in ASR by FSI

S/N	Area of Disclosure	No. of Required Items	No. of Items Disclosed			
			FSI 1	FSI 2	FSI 3	FSI 4
1.	Economic Performance (Risks, values and benefit plan)	4	4	4	4	2
2.	Market Presence (wages and senior management' proportion)	2	0	2	2	0
3.	Indirect Economic Impacts (infrastructure and impact extent')	2	2	2	2	1
4.	Procurement Practices (Proportion of spending)	1	1	1	0	0
	Total- Bangladesh	9	7	9	8	3
	Total-India	9	5	4	4	6
	Total- Sri Lanka	9	9	1	3	9

Source: Survey Data

6.2.4 Specific Disclosures on Environmental Aspects in ASR by FSI

Specific disclosure on different environmental aspects is one of the three important dimensions of a sustainability report. Reporting entity is required to make disclosure on 12 areas related with environmental issue. Under environmental dimension, one FSI of Bangladesh and one of Sri Lanka have made disclosure of all 12 items. It is noted that the least disclosure score is 2, which is a Sri Lankan organization.

Table 6.5: Specific Disclosures on Environmental Aspects in ASR by FSI

S/N	Area of Disclosure	No. of Required Items	No. of Items Disclosed			
			FSI 1	FSI 2	FSI 3	FSI 4
1.	Materials (weight or volume and percentage of materials)	2	2	0	2	0
2.	Energy (Energy intensity and consumption)	5	5	3	5	1
3.	Water (withdrawal, source and volume of water)	3	2	0	3	0
4.	Biodiversity (Impact, habits and number of IUCN Red List)	4	4	0	4	2
5.	Emissions (Direct, indirect (GHG) and air emissions Intensity and)	7	7	2	7	0
6.	Effluents and Waste (Identity and weight, number and volume of waste)	5	5	1	5	0
7.	Products and Services (Impact and percentage of product sold)	2	2	1	2	0
8.	Compliance (Monetary and non-monetary value for fines)	1	1	1	1	1
9.	Transport (Workforce and products)	1	1	1	1	0
10.	Overall (Total environmental protection)	1	1	1	1	0

S/N	Area of Disclosure	No. of Required Items	No. of Items Disclosed			
			FSI 1	FSI 2	FSI 3	FSI 4
11.	Supplier Environmental Assessment (Impact and screening of new suppliers.)	2	2	0	2	0
12.	Environmental Grievances Mechanisms (Impacts and number of grievances)	1	1	1	1	0
	Total- Bangladesh	34	33	11	34	4
	Total-India	34	16	20	8	16
	Total- Sri Lanka	34	29	2	3	34

Source: Survey Data

6.2.5 Specific Disclosures on Social Aspects in ASR by FSI

There are 4 sub-categories under social aspects for making disclosure in the sustainability report i.e. (i) Labor Practices and Decent Work, (ii) Human Rights, (iii) Society, and (iv) Product Responsibility. Following sections present status of disclosure made by FSI of Bangladesh, India and Sri Lanka.

6.2.5.1 Specific Disclosures on Labor Practices & Decent Work in ASR by FSI

Employment, Labor/ Management Relations, Occupational Health and Safety, Training & Education, Diversity & Equal Opportunity, Equal Remuneration for Women & Men, Supplier Assessment for Labor Practices and Labor Practices Grievance Mechanisms are 8 areas of disclosure under labor practices and decent work sub-category of social aspects. As per Table-6.6, FSI-1 of Bangladesh and FSI-1 of Sri Lanka have provided all 16 required information in their ASRs. The poorest scored organization is belonging in India (FSI-3).

Table 6.6: Specific Disclosures on Labor Practices & Decent Work in ASR by FSI

S/N	Area of Disclosure	No. of Required Items	No. of Items Disclosed			
			FSI 1	FSI 2	FSI 3	FSI 4
1.	Employment (Number, benefit and retention of employees)	3	3	3	3	3
2.	Labor/ Management Relations (Minimum notice periods)	1	1	1	1	1
3.	Occupational Health and Safety (worker health and safety committees with agreements)	4	4	2	4	0
4.	Training and Education (Training hours and employee training)	3	3	3	3	3
5.	Diversity and Equal Opportunity (Composition and breakdown of employee and governance bodies)	1	1	1	1	1
6.	Equal Remuneration for Women and Men (Ratio of basic salary and remuneration)	1	1	1	1	1
7.	Supplier Assessment for Labor Practices (Significance and percentage of new suppliers)	2	2	0	0	0
8.	Labor practices Grievance Mechanisms (labor practices filed, through grievance mechanisms)	1	1	1	0	0
	Total- Bangladesh	16	16	12	13	9
	Total-India	16	12	8	6	9
	Total- Sri Lanka	16	16	7	7	14

Source: Survey Data

6.2.5.2 Specific Disclosures on Human Rights in ASR by FSI

This section presents the status of FSI regarding specific disclosure on human rights in ASR. Under 10 areas, a total number of 12 items are to be incorporated in the ASR as per GRI guidelines. It is observed from Table-6.7 that only 1 financial services providing organization (FSI-1) of Bangladesh has fulfilled the requirement of such disclosure. It is also observed from the table that FSI-4 of Bangladesh has made available only 1 item. None of the 4 organizations of India has fulfilled all disclosure requirements under this sub-category. In this area, disclosure scores of Sri Lankan organizations are 12, 2, 3 and 8.

Table 6.7: Specific Disclosures on Human Rights in ASR by FSI

S/N	Area of Disclosure	No. of Required Items	No. of Items Disclosed			
			FSI 1	FSI 2	FSI 3	FSI 4
1.	Investments (Significance and total hours of employee training)	2	2	1	2	0
2.	Non Discrimination (Incidents of discrimination and corrective actions)	1	1	1	1	1
3.	Freedom of Association and Collective Bargaining (Identification and measures to support rights)	1	1	0	1	0
4.	Child Labor (Risk Identification and measures to contribute)	1	1	1	1	0
5.	Forced Or Compulsory Labor (Identification and measures to elimination)	1	1	1	1	0
6.	Security Practices (personnel training for security purpose)	1	1	1	1	0
7.	Indigenous Rights (Identification and action taken)	1	1	1	0	0
8.	Assessment (Operations subject to human rights)	1	1	0	0	0
9.	Supplier Human Rights (Screening of new suppliers)	2	2	0	0	0
10.	Human Rights Grievance Mechanism (Identification and resolve of grievances)	1	1	1	0	0
	Total- Bangladesh	12	12	8	7	1
	Total-India	12	9	2	9	2
	Total- Sri Lanka	12	12	2	3	8

Source: Survey Data

The requirement of specific disclosure on society in ASR is necessary as per G4 guidelines of GRI. There are 7 areas of specific disclosures under this issue where an entity should disclose 11 items. As depicted in Table 6.8, two Bangladeshi organizations have shown their full compliance in this regard. None of the Indian or Sri Lankan organizations discloses all of the required items in ASR.

Table 6.8: Specific Disclosures on Society Aspects in ASR by FSI

S/N	Area of Disclosure	No. of Required Items	No. of Items Disclosed			
			FSI 1	FSI 2	FSI 3	FSI 4
1.	Local Communities (Impact and operation with local community)	2	2	0	2	1
2.	Anti- Corruption (Identification and operations assessed for risks)	3	3	2	3	3
3.	Public policy (Total value of political contributions)	1	1	1	1	0
4.	Anti- Competitive Behavior (Total number of legal actions)	1	1	0	1	0
5.	Compliance ((Monetary and non-monetary value for fines))	1	1	1	1	1
6.	Supplier Assessment for Impacts on Society (Significance and percentage of new suppliers)	2	2	0	2	0
7.	Grievances Mechanisms for Impacts on Society (Identification and resolve of grievances)	1	1	1	1	0
	Total- Bangladesh	11	11	5	11	5
	Total-India	11	6	7	6	6
	Total- Sri Lanka	11	9	5	5	8

Source: Survey Data

6.2.5.3 Specific Disclosures on Product Responsibility in ASR by FSI

In 5 areas, a number of 9 items related with product responsibility have to be disclosed in ASR as prescribed by GRI. Accordingly, two organizations of Bangladesh and two organizations of Sri Lanka have disclosed all these information (Table-6.9). However, remaining organizations of these three countries did not provide all information.

Table 6.9: Specific Disclosures on Product Responsibility Aspects in ASR by FSI

S/N	Area of Disclosure	No. of Required Items	No. of Items Disclosed			
			FSI 1	FSI 2	FSI 3	FSI 4
1.	Customer Health and Safety (Identification and category for improvement)	2	2	0	2	0
2.	Product Labeling and Service Labeling (Measuring customer satisfaction and non-compliance)	3	3	3	3	0
3.	Marketing Communications (Non-compliance and banned products)	2	2	1	2	1
4.	Customer Privacy (breaches and losses of privacy and data)	1	1	1	1	1
5.	Compliance (Monetary value of significant fines)	1	1	1	1	0
	Total- Bangladesh	9	9	6	9	2
	Total-India	9	7	7	5	5
	Total- Sri Lanka	9	9	5	5	9

Source: Survey Data

7. Stakeholders' Perceptions on ASR

For the purpose of getting insight on sustainability reporting practices in FSI of Bangladesh, opinions of different stakeholders have been collected. In line with this, discussions have been conducted with regulators, executives of FSI publishing ASR, executives of FSI not-publishing ASR at this moment and academics. A summary of discussions is presented in the following parts.

7.1 Discussion with Central Bank (Bangladesh Bank)

Through issuing circulars, central bank of Bangladesh has instructed to all banks and financial institutions to publish sustainability report regularly basis. Therefore, a discussion was held with the executives of Sustainable Finance Department of Bangladesh Bank. Discussion summary is presented in Table-7.1. As per their opinion, banks/ NBFIs are required to publish separate sustainability report from annual report and it is mandatory for them to do so annually. Besides, they expect that the report must be verified by third party. Though they feel that sufficient number of qualified agencies are not available in Bangladesh at this moment. However, BB do not maintain any data-base for monitoring publication status. Moreover, BB executives do not evaluate the contents of the ASR submitted by FSI to them. Besides, central bank does not take any action for non-compliance regarding the issue. Because, them think that all financial institutions are not fully ready to publish ASR as per international guidelines like GRI reporting framework. BB has a plan to issue a detail guidelines for helping scheduled banks/ NBFIs and afterword regulatory monitoring will enhance for ensuring compliance.

Table 7.1: Opinions of the Executives of Bangladesh Bank Regarding ASR

S/N	Issue	Opinion
	Is it mandatory for banks/NBFIs to publish ASR in each year?	Yes
1.	Why you are calling the report as “Independent” Green Banking and Sustainability Report?	It must be separated from annual report
2.	Is it mandatory for banks/ NBFIs to verify the report by an independent agency or third party?	Yes
3.	Do you have any data-base regarding publishing and non-publishing the reports by banks/ NBFIs?	No
4.	Do you have any mechanism to evaluate contents of the published report?	No
5.	Did you take any regulatory action for non-compliance of reporting?	No
6.	Did you take any initiative to ensure publication of the report by banks/ NBFIs?	No
7.	Did you reward any bank/ NBFi for publishing the report?	No
8.	Do you think that most of the banks/NBFIs are ready to publish the report at this moment?	No
9.	Do you think that qualified verifying agencies are available in Bangladesh?	No
10.	Do you think that publication of the report in electronic form is sufficient?	No
11.	What should be the nature of publication of the report? (Soft / Hard Copy / Both)	Both
12.	Do you have any instruction for banks/NBFIs regarding printing technology and paper of the report for ensuring it environmental friendly?	Yes
13.	Do you have any plan/intention to prescribe a format for banks/ NBFIs for publishing the report?	Yes
14.	What is your immediate future plan for ensuring publication of the report?	After prescribing a format, instructing banks/ NBFIs to follow and monitoring compliance

Source: Survey Data

7.2 Discussion with Bangladesh Securities and Exchange Commission (BSEC)

All of the listed companies, including FSI, are regulated by Bangladesh Securities and Exchange Commission (BSEC). Therefore, the researcher has shared views with the executives of BSEC. Though there is no specific regulations for requiring listed companies to prepare and publish sustainability report, BSEC's executives opine that it has authority to ensure compliance with regulations imposed by BB or any other agency applicable for the listed companies. They believe that there are some existing regulations which require disclosure of some sustainability information in annual report. BSEC wants to ensure quality of financial disclosure, at first, then it will move for qualitative and other types of disclosure. As per expectations of BSEC, all entities should work jointly for achieving sustainable development goals.

7.3 Discussion with Executives of FSI Publishing ASR

As stated earlier, a total number of 4 organizations (Bank Asia Limited, Prime Bank Limited, Mutual Trust Bank Limited and IDLC Finance Limited) under FSI publish separate sustainability report annually. However, this section does not disclose the name of the organizations for showing their status and perceptions of the banks. Because, primary data have been collected by making commitment of hiding their identity. A summary of primary information is presented in the following parts.

Table-7.2 summarizes information related with preparation of sustainability report by FSI of Bangladesh. It is observed that different units/committees are assigned for preparing ASR in FSI (e.g., group finance (central accounts department), research & development unit, corporate social responsibility unit, etc.) and the assigned unit chaired by officials in different ranks. Some of the institutions have gathered required knowledge by participating training programs and some others by self-learning. Subsequently, members of the assigned team got relevant training.

Table 7.2: Preparation of Sustainability Report by FSI of Bangladesh

S/N	Issue	FSI-1	FSI-2	FSI-3	FSI-4
1.	Name of department prepare the Annual Sustainability Report (ASR)	Group Finance	SR Committee	Group R&D	CSR
2.	No. of members are in the Sustainability Reporting (SR) Team	4	5	3	1
3.	Leader of the Sustainability Reporting (SR) Team	CFO	DMD	Head of Group R&D	Head of CSR
4.	Starting year to publish Sustainability Report either in Annual Report or Separately	2012	2013	2014	2011
5.	Starting year to publish ASR separately	2012	2015	2014	2011
6.	Completion of Sustainability Report 2016 by June	No	No	No	Yes
7.	Way of gathering knowledge by ASR team for preparing the report at the first time	Training	Web-based learning by a dedicated executive	Literature review	Training
8.	Receiving training/ education by the team members for preparing ASR	Yes (From NCSR)	Yes (From NCSR)	Yes (From SR Asia)	Yes (From SR Asia)

Source: Survey Data

Perceptions of executives of FSI publishing ASR on different issues of BB guidelines are depicted in Table-7.3. All of them think that publication of ASR is mandatory for all scheduled banks/ NBFIs. However, publication of the report in printed form is not mandatory as opined by most of them. Third party verification is considered as mandatory by two organizations and remaining two are in opposite opinion due to lack of available qualified agencies in Bangladesh. They do not expect to extend time-frame given by BB for publishing the report by FSI. Nevertheless, some of them expect a detail guidelines from BB which may help other institutions. All of them prefer to publish separate sustainability instead of integrated report. It is notable that in most of the cases CEO was the initiator of ASR in the FSI.

Table 7.3: Perception of Executives of FSI on Different Issues of Concerned Guidelines

S/N	Issue	FSI-1	FSI-2	FSI-3	FSI-4
1.	Publication of SR as a mandatory requirement	Yes	Yes	Yes	Yes
2.	Publication of SR in printed form as a mandatory requirement	No	No	No	Yes
3.	Verification of SR as a mandatory requirement	No	Yes	Yes	No
4.	Readiness of bank to publish SR at this moment	Yes	Yes	Yes	Yes
5.	Availability of qualified verifying agencies in Bangladesh	No	No	Yes	Yes
6.	Appropriate nature of publication of the report – Soft Copy/ Hard Copy/ Both	Soft Copy	Both	Both	Both
7.	Publication of SR in electronic form to fulfil regulatory requirement	No	No	Yes	No
8.	Getting instruction from BB regarding printed form of the report for making it environmental friendly	No	No	Yes	No
9.	Expected to extend time frame for publishing SR	No	No	No Comment	No
10.	Submission of the report to the regulators only is sufficient	No	No	No	No
11.	Necessity of providing format by BB for banks/ NBFIs for publishing the report	No	Yes	No	Yes
12.	Integrated Reporting Framework is better than separate ASR	No	No	No	No
13.	Suitable disclosure option for Bangladeshi banking industry	Core	Comprehensive	Any	Core
14.	BFI/ NBFIs may be penalized by BB for non-publishing the report	No	No	No Comment	Yes
15.	Receiving award from BB for publishing the report	Appreciation Letter	No	No	No
16.	First initiator for preparing the report	MD	DMD & CFO	MD & CEO	CEO

Source: Survey Data

Table-7.4 portrays the nature of distribution of ASR by FSI of Bangladesh. All institutions, except FSI-3, distribute ASR to BB. None of them distribute ASR to general shareholders, borrowers or depositors. Some of them distribute to BSEC, stock exchanges, Registrar Joint Stock Companies and Firms (RJFCF), corporate shareholders, depositors or lenders.

Table 7.4: Distribution of Printed ASR

S/N	Issue	FSI-1	FSI-2	FSI-3	FSI-4
1.	Bangladesh Bank	Yes	Yes	Publication of soft copy only	Yes
2.	BSEC	No	Yes		Yes
3.	DSE/ CSE	No	No		Yes
4.	RJSCF	No	No		Yes
5.	General Shareholders	No	No		No
6.	Corporate Shareholders	Yes	Yes		Yes
7.	General Borrowers	No	No		No
8.	Corporate Borrowers	Yes	No		Yes
9.	General Depositors	No	No		No
10.	Corporate Depositors	No	Yes		Yes
11.	Corporate Lenders	No	Yes		Yes
12.	Training/ Research institutions	Yes	Yes		Yes
13.	Others (mention name):	Other banks, Insurance companies, NGO's, Inter branches, inter divisions/ departments	No		CSR partners

Source: Survey Data

Nature and status of FSI regarding publication of ASR is illustrated in Table-7.5. In 2015, all 4 institutions have published independent sustainability report (ISR), however, some of them had published sustainability report as Part of Annual Report (PAR). All Bangladeshi institutions prepare ASR in accordance with core (CR) option given by GRI. Now-a-days, all of the financial services institutions are going to published ASR in printed form along with soft copy. Generally, they print about 200 to 800 copies for distribution and costing for printing each report vary from Tk. 250 to Tk. 700. On an average, less than 100 pages are used for printing a report. None of the institutions makes arrangement for verification of ASR by third party.

Table 7.5: Status of FSI regarding Publication of Sustainability Reporting in Bangladesh

Year and Name of Bank		Mode of SR (ISR/AR)	Followed Criteria (CR / CH)	Nature of Publication (Soft/Print/ Both)	No. of Printed Copies of ASR	Cost per Printed Copy of ASR	No. of Pages used in ASR	3 rd Party Verification of ASR
2012	FSI-1	ISR	CR	Both	200	650	80	No
	FSI-2	Not prepared						
	FSI-3	Not prepared						
	FSI-4	ISR	CR	Both	N/A	N/A	96	No
2013	FSI-1	ISR	CR	Both	200	670	84	No
	FSI-2	PAR	CR	Both	Part of Annual Report		65	No
	FSI-3	Not prepared						
	FSI-4	ISR	CR	Both	N/A	N/A	134	No
2014	FSI-1	ISR	CR	Both	200	700	88	No
	FSI-2	PAR	CR	Both	Part of Annual Report		22	No
	FSI-3	ISR	CR	Soft	Soft Copy Only		97	No
	FSI-4	ISR	CR	Both	600	250	60	No
2015	FSI-1	ISR	CR	Both	200	630	96	No
	FSI-2	ISR	CR	Both	400	380	98	No
	FSI-3	ISR	CR	Soft	Soft Copy Only		86	No
	FSI-4	ISR	CR	Both	800	250	78	No
2016	FSI-1	Yet to Complete by July 2017						
	FSI-2	ISR	CR	Both	400	380	112	No
	FSI-3	Yet to Complete by July 2017						
	FSI-4	ISR	CR	Both	400	300	55	No

Notes: ISR=Independent Sustainability Report, PAR=Sustainability Report as part of Annual Report, CR=In accordance with Core, CH=In accordance with Comprehensive

Source: Survey Data

The ASR publishing banks/ NBFIs are preparing the report expecting some competitive advantages over others. Table-7.6 portrays FSI's expectation by publishing ASR. Building up awareness of the stakeholders, ensuing sustainable business operation, enhancing investors' confidence, strengthening brand image and tracking resource consumption are some important objectives of the executives publishing ASR. As per their opinions, FSI is getting expected benefits by publishing the report. Besides, some additional benefits they are getting from this report like smoothing international trade operation, getting foreign loan with cheaper rate and encouraging others to publish such report.

Table 7.6: Benefits of Publishing ASR

S/N	Particulars	Benefits of ASR	
		Expected	Actual
1.	Building up awareness of the stakeholders	√	√
2.	Ensuring environment friendly and sustainable business operation	√	√
3.	Increasing level of confidence of investors	√	
4.	Strengthening the brand image	√	√
5.	Reducing operational cost by consuming less office stationeries, energy and water	√	√
6.	Reducing NPL	√	√
7.	Stakeholder's engagement by 360 degree	√	√
8.	Tracking resource consumption and carbon emission	√	√
9.	Smoothing international trade operation		√
10.	Getting foreign loan with cheaper rate		√
11.	Encouraging others to publish the report		√

Source: Survey Data

In Bangladesh, only four financial institutions are now publishing ASR by following GRI guideline and others do not. The publishing institutions did not get any award from the regulator for complying with regulations. On the other, none of the institutions has been penalized by regulators for non-publishing the report. However, some financial institutions are continuing their endeavor in publishing ASR as a responsible corporate citizen of the country (Table-7.7). They believe in compliance with regulations whether it is monitored or not by the regulators. They want to be in line with SDGs set by UN. They want to ensure sustainable operations in the future following international standards and best practices of corporate governance. Sometimes, broadening brand image and becoming the best for disclosure are considered as main factors for publishing such report. It seems that non-publishing financial institutions are misusing the lapse of close monitoring and supervision by the regulators in this regard.

Table 7.8: Motivating Factors for Publishing ASR

S/N	Particulars
1.	As a responsible corporate citizen
2.	Compliance with regulatory guidelines
3.	Broaden the brand image of the bank
4.	Act in line with sustainable development goals
5.	To follow international standards and best practices of corporate governance
6.	Sustainable banking operation in the future
7.	To be the best in disclosure

Source: Survey Data

Table-7.8 points out some challenges faced by FSI publishing ASR at the initial stage. Generally, pioneers have to take more challenges as compared to the followers. Initiators of ASR in Bangladesh have also faced some difficulties in materializing the report. Among others, collection of relevant data, quantify environmental impacts, understanding international standards for acquiring required knowledge, engaging stakeholders including directors and lapses of dedicated units for completing report are some mentionable challenges.

Table 7.9: Major Challenges Faced in Publishing SR for the Initial Stage

S/N	Particulars
1.	Collection of relevant data
2.	Quantify environmental impacts
3.	Understanding international standards and acquiring knowledge
4.	Engaging stakeholders including directors
5.	Lapses of dedicated units for completing report

Source: Survey Data

7.4 Discussion with Executives of Other FSI of Bangladesh Not-Publishing ASR

The researcher has shared views with some executives working in such financial services providing organizations who are not publishing ASR at this moment. It is observed that most of the executives are not aware about the publication requirement and contents of the report. Some other issues related with ASR are represented in Table-7.9. Most of the executives do not think that annual publication of sustainability report is mandatory for them. However, some of them are desiring to publish the report in future. They expect that BB will provide a detail guidelines and preparatory time for getting ready by FSI of Bangladesh.

Table 7.10 Perception of Executives of FSI on Different Issues of Concerned Guideline

S/N	Issue	Perception
1.	Publication of ASR as a mandatory requirement	No
2.	Readiness of bank to publish ASR at this moment	No
3.	Publication of ASR in electronic form to fulfil regulatory requirement	Yes
4.	Expectation to get extend time-frame from BB for publishing ASR	Yes
5.	Expectation to get more detail guidelines from BB for publishing ASR	Yes

Source: Survey Data

7.5 Discussion with Academics and Accountancy Professionals

From the discussions with accountancy professionals (FCA/FCMA/ACA/ACMA) and academics (working in business schools of different public and private universities) it is revealed that they are in favor of publishing ASR. However, they opined that it should not be mandatory to publish the report in printed form. They opine BB should provide a comprehensive guidelines helping FSI in preparing ASR maintaining consistency.

8. Conclusion

The main objective of the study is to observe the status of ASR published by FSI of Bangladesh and showing comparison with some other neighboring countries. In Bangladesh, FSI is ahead of other types of industries for publishing ASR. FSI of Bangladesh is doing better as compared to that of India and Sri Lanka for making disclosure on some specific aspects. Four financial services organizations of Bangladesh are now publishing ASR regularly whereas none of such organization of Afghanistan, Bhutan, Maldives, Nepal and Pakistan is doing so. Bangladesh Bank has only instructed banks/ NBFIs to publish ASR following international guidelines. However, it will better for FSI if a detail guidelines is issued by local regulatory authority. Moreover, issuing circular/guidelines may not be sufficient rather creating awareness among financial institutions and motivating them for publishing the report is essential. Besides, close monitoring of compliance

status by the regulators is also important. In this regard, regulators may maintain data-base of publishing and non-publishing ASR. Nevertheless, regulatory bodies may recognize compliant institutions and penalize non-compliant banks. At the initial stage, catering training and education in association with other international organizations, like NCSR, SR Asia, may help FSI in gathering required knowledge. A sufficient number of qualified verifying agencies should be available in Bangladesh. At the institution level, formulation of internal policy and assign responsibility to a specific unit for preparing ASR are to be ensured. They may be allowed to publish soft copy without printing any hard copy of the report. Affiliation of Bangladeshi institutions with international organization (like GRI, UNGC, etc.) may motivate them to publish ASR in compliant way.

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Appendix I: Name of Financial Services Organizations in SAARC Countries Prepared ASR

S/N	Name of Country	Name of Organization	Size	Available Reports
1.	Bangladesh	Bank Asia	MNE	2016, 2015, 2014 & 2013
2.	„	BEIL	Large	2013 & 2012
3.	„	IDLC	Large	2017, 2016, 2015, 2014, 2013 & 2012
4.	„	Mutual Trust Bank Ltd.	Large	2016 & 2015
5.	„	Prime Bank Limited	Large	2017, 2016, 2015 & 2014
6.	„	Janata Bank Limited	Large	2016 & 2015 (Non-GRI)
7.	„	BRAC Bank Limited	Large	2017 (Non-GRI)
8.	„	Eastern Bank Limited	Large	2017 (Non-GRI)
9.	„	Southeast Bank Limited	Large	2017 & 2016 (Non-GRI)
10.	India	ABN AMRO INDIA	Large	2008
11.	„	Axis Bank	MNE	2016 & 2015
12.	„	Bajaj Finance Limited	Large	2016
13.	„	Bank of Baroda	MNE	2016
14.	„	Canara Bank	MNE	2016, 2015, 2014 & 2013
15.	„	HDFC	MNE	2016
16.	„	HDFC Bank	MNE	2016, 2015 & 2014
17.	„	ICICI Bank	Large	2016 & 2015
18.	„	IDFC Limited	Large	2016 & 2015
19.	„	IndusInd Bank	Large	2016, 2015, 2014, 2013, 2012 & 2011
20.	„	Kotak Mahindra Bank	Large	2016, 2015, 2014, 2013 & 2012
21.	„	LIC Housing Finance Limited	MNE	2016
22.	„	Mahindra & Mahindra Financial Services	Large	2016, 2015, 2014 & 2013
23.	„	Multi Commodity Exchange of India (MCX)	Large	2011 & 2010
24.	„	Power Finance Corporation Limited	Large	2016
25.	„	PTC India Financial Services Ltd	Large	2016
26.	„	Punjab National Bank	Large	2016
27.	„	Shriram Transport Finance Company Ltd	Large	2016
28.	„	Small Industries Development Bank of India (SIDBI)	Large	2010
29.	„	State Bank of India	Large	2017, 2016 & 2015
30.	„	Union Bank of India	MNE	2014
31.	„	Yes Bank	Large	2016, 2015, 2014 & 2013
32.	Pakistan	First Habib Modaraba	Large	2013 & 2012
33.	Sri Lanka	Citizens Development Business Finance	Large	2016, 2015, 2014 & 2013
34.	„	Commercial Bank of Ceylon PLC	Large	2016, 2015 & 2013
35.	„	Hatton National Bank (HNB)	Large	2016, 2015, 2014, 2013, 2012 & 2011

(Continued)

(Continued:Appendix-1)

S/N	Name of Country	Name of Organization	Size	Available Reports
36.	„	HNB Assurance PLC	Large	2016, 2015, 2014, 2013, 2012, 2011, 2010, 2009 & 2008
37.	„	Mercantile Investments and Finance PLC	SME	2016, 2015, 2014, 2013 & 2012
38.	„	People's Leasing Co. Ltd.	MNE	2011
39.	„	Soft logic Life Insurance	Large	2016, 2015 & 2014
40.	„	Union Assurance	Large	2016, 2015 & 2014

**Year of publication of the report, reporting year will be the preceding year*

Source: <http://database.globalreporting.org/search/>, accessed on August 17, 2017

Financial Inclusion in the Era of Digitalization in Developing Countries: A Dynamic Panel Analysis

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Introduction

During the present age of digitalized globalization, the relationship between the process of digitalization and financial inclusion is essential for planning and development strategies in many of the developing and emerging countries in the world. Financial inclusion is one key aspect most experts view converges upon when it comes to discussing inclusive growth. Policymakers see it as a way to improve people's livelihoods, reduce poverty, and advance economic development. So what is financial inclusion? In simple terms, it is making the use of formal financial services accessible to all households and firms. Last mile reach of financial services is something most economies, both developing and developed, are keenly working on. Although some progress has been made, large gaps remain in financial inclusion across various dimensions. Fifty six percent of adults in the world do not have access to formal financial services Ardic *et al.*, (2011). At the forefront of enablers for financial inclusion is the rapid rise of digital technologies. Rapid advancements in digital technologies, starting with rise of smartphones to big data to Internet of Things (IOTs), have the potential to bridge the aforementioned gaps. Newer opportunities are being created to provide financial services at much lower cost.

Figure 1: Transformation of Society under Digital Financial Inclusion



Source: World Bank, 2016

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Knickrehm *et al.*, (2016) defined digital economy as “the share of total economic output derived from a number of broad “digital” inputs. These digital inputs include digital skills, digital equipment (hardware, software and communications equipment) and the intermediate digital goods and services used in production”. It is imperative that economies around the world move towards less cash and more digital due to the vast benefits digitised services have to offer. Foremost is the increased transparency. The great amounts of information about users generated by digital payments can be harnessed to spawn new types of financial services, customised to tailor-fit specific requirements of users i.e. a “customer-centric” manner. It can also help ascertain their creditworthiness of a customer and lower risks. Peer-to-Peer (P2P) lending platforms can also emerge. The Figure-1 obtained from World Bank Group describes articulately the transformation we wish to see in our society as an end result of the digital financial inclusion drive.

In the long run, the benefits of greater financial inclusion, driven by lowering costs and increased convenience of transactions through digitalisation, should have a symbiotic relationship. A substantial increase in number of people using formal credit channels will provide greater incentive to stakeholders to treat digital-payment network as part of the basic infrastructure of an economy. The enhanced digital literacy and capacity building measures involved in propping up financial inclusion would play a pivotal role in shaping the behavioural patterns of the customers. More people will get on-board with the digital platform, creating a demand push for such services. Thus financial inclusion and digital economy will catapult one another to greater heights.

Against this backdrop the aim of the present study is to explore the dynamic causality between the expansion of digitalization and financial inclusion in fastest growing developing countries since last one decade when both are fuelled by globalization. The rest of the paper has been organized as follows. The next section surveys the existing literature on related issues in short followed by a brief documentation of some current scenarios in selected emerging nations. Methodological issues are clearly described after discussing the issues on hypotheses and data base. Before making the conclusion in final section, empirical findings are widely illustrated.

Review of Literature

The area of existing studies regarding the issues on digitalization and financial inclusion during present phase of globalization is not so vast. Sarma and Pais (2008) suggested that the issue of financial inclusion is considered a priority in policymaking many countries. The study observed that human development and financial inclusion in a country move closely with each other, although a few exceptions exist. Further physical and electronic connectivity and information availability, indicated by road network, telephone and internet usage, also plays positive role in enhancing financial inclusion. Chibba (2009) sighted Financial Inclusion is an inclusive development and poverty reduction strategy. According to him in the aftermath of the global financial crisis, financial inclusion assumes a central role in meeting the Millennium Development Goals (MDGs).

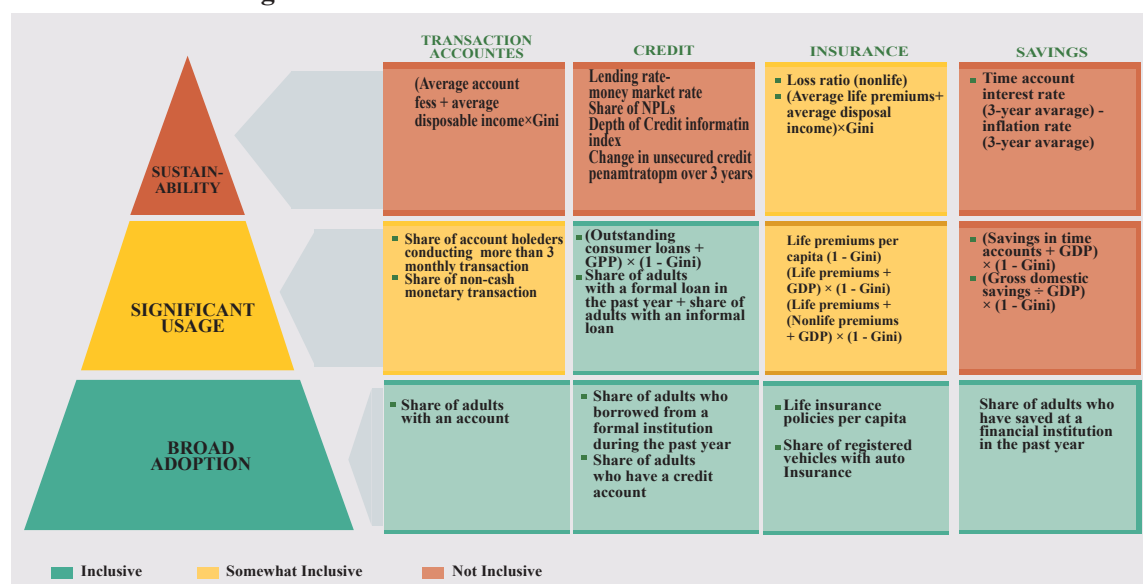
According to McKinsey and Company (2016), digital finance has the potential to provide access to financial services for 1.6 billion people in emerging economies, more than half of them women. It also has the potential to increase the volume of loans extended to individuals and businesses by US\$ 2.1 trillion and help governments in saving up to US\$ 110 billion per year by reducing leakage in spending and tax revenue. Financial-services too would be beneficiaries, saving US\$ 400 billion annually in direct costs while sustainably increasing their balance sheets by as much as US\$ 4.2 trillion. Further it adds that emerging economies could get a boost to their GDP by US\$ 3.7 trillion by 2025 owing to productivity gains from digital payments and increased investments from micro, small, and medium-sized businesses due to financial inclusion. The GDP gains can create up to 95 million jobs. Digital records for revenue and expenditure also enable businesses to demonstrate their creditworthiness to lenders. Combined with the gain in deposits from financial inclusion, greater amounts of loans can be extended to individuals and Micro, Small and Medium Enterprises (MSMEs), helping productive but credit-constrained businesses expand.

Digital Agenda for Europe (DAE) (2016) reviews emphasized the influence digital technologies were having on jobs and growth, noting that half of all productivity growth derives from investment in Information and Communication Technology (ICT). Internet traffic is doubling every 2-3 years and mobile internet traffic every year. They expected numbers were that in 2015 there would be 25 billion wirelessly connected devices globally which would double to 50 billion in 2020. Mobile data traffic is expected to increase 12 fold between 2012 and 2018, and data traffic on smartphones to increase 14 times by 2018. Bansal (2012) emphasises that banks should make ‘boosting financial literacy in rural India’ an essential component of their business model for financial inclusion.

Klynveld Peat Marwick Goerdeler (KPMG) (2015) in their report on Role of digital banking in furthering financial inclusion states that Mobile penetration of around 90 per cent will be the key to increase financial literacy as well as inclusion, as players are betting on mobile-based financial services. The increased smartphone proliferation, projected at 50 per cent by 2020, along with falling handsets costs are likely to increase acceptance. Reserve Bank of India (RBI) has been advising banks to focus on financial literacy to boost the demand for financial products.

G20 (2016) laid down the following principles to meet financial inclusion goals through digitalisation: “Principle-1: Promote a Digital Approach to Financial Inclusion; Principle-2: Balance Innovation and Risk to Achieve Digital Financial Inclusion; Principle-3: Provide an Enabling and Proportionate Legal and Regulatory Framework for Digital Financial Inclusion; Principle-4: Expand the Digital Financial Services Infrastructure Ecosystem; Principle-5: Establish Responsible Digital Financial Practices to Protect Consumers; Principle-6: Strengthen Digital and Financial Literacy and Awareness; Principle-7: Facilitate Customer Identification for Digital Financial Services; Principle-8: Track Digital Financial Inclusion Progress.”

Figure 2: Illustration of Sustainable Financial Inclusion



Source: Boston Consulting Group (BCG) Analyst, 2017

Microfinance Institutions (MFIs) are viewed as essential catalysts for financial inclusion. The findings of the study highlighted some critical issues. But there are challenges in meeting their goals. Kamath *et al.*, (2008) in his study on MFIs in India found many distressing signs. First, repayment of one MFI loan was done by using other MFI loans. Second, maximum repayment of MFI loan exceeded the average income of the households. Third, none of the loans were used for productive purpose instead they are used for consumption purpose. To solve such issues McKinsey and Company suggests that financial service providers should test-market low-cost pilots to see which products/ services are found acceptable before large-scale introduction.

Chen and Faz (2015) emphasise on the importance of digital data as an opportunity is exploring the possibility of assessing credit risk of customers where no information or formal records exist. They believe large chunks of digital data will allow many to establish a formal credit history and to eventually engage more broadly with formal Financial Service Providers (FSPs). Some Key takeaways from seminar of Asian Development Bank (ADB) (2016) on Financial Inclusion in the Digital Economy were balancing the regulatory framework to support innovation while ensuring the safety and soundness of the financial system through adapting technological means like regulation technology and increasing competitiveness by showing openness to new players.

Figure 3: Comparison of Sustainable Financial Inclusion



Source: Boston Consulting Group (BCG) Analyst, 2017

Boston Consulting Group (BCG) (2017) emphasises that financial inclusion must involve on-going activity that benefits both providers and consumers. They term it as sustainable financial inclusion. The following two charts are from their study. The first one provides an ideal for measuring the sustainable financial inclusion and the second one tells us about how some of the countries are faring in this regard.

Brief Scenario of Digitalization and Financial Inclusion

No-Frills Banking in South Africa which intends to make banking facilities more affordable for the poor is found. This involves providing basic bank accounts with negligible minimum deposit and a set number of free transactions. The scheme was launched in 2004; the Mzansi account has no monthly fees. Five transactions in a month are free. But a vast number of these accounts are inactive, leaving much scope for improvement. The reason for this lackluster performance is probably the fact that beyond those five free transactions, further transactions are expensive.

Branchless Banking in Brazil which aims at spreading access to banking through agents called Banking Correspondents (BCs). BCs got a major boost when the regulation broadened the range of services that can be offered by BCs and eased several other restrictions. This was much needed because of the low banking services penetration in the country. Safaricom-Vodafone launched M-PESA in 2007 in a bid to create a parallel banking ecosystem. M-PESA in Kenya has seen

massive growth. Roughly 40 percent of Kenya's adult population is using the platform. Since May 2010, Safaricom has ventured into providing deposit facility too by tying up with Equity Bank. It is called "M-KESHO" savings account and it too can be accessed from a customer's mobile phone.

Banco Compartamos which had started off as a non-profit organization has grown over the years to become extremely profitable for its shareholders. Today they have a client base of over 1.5 million users and act as a model for MFIs around the world which wishes to follow a profit led approach. In Philippines Banks provide mobile channel services to expand digital transactions users' base. The services are targeted mostly at farmers.

India has taken a lot of steps in this context. The government is keen on developing the public infrastructure in the digital ecosystem space. The National Optical Fibre Network (NOFN) or Bharat Net, project aims at kick-starting a broadband revolution in rural areas. Several other infrastructure projects have been initiated as part of the "Digital India" campaign of the present government to ensure that Government services are made available to the citizens electronically by improved online infrastructure. The flag bearer of India's financial inclusion policy is the Pradhan Mantri Jan-DhanYojana. Nearly 292 million accounts have been opened under the scheme as on July 2017. The plan envisages access to insurance, credit and pension facilities and channelling of all government benefits directly into the beneficiaries thus minimising leakages due to corruption.

Technologies such as Immediate Payment Service (IMPS), Unified Payment Interface (UPI) and National Unified USSD Platform (NUUP) are enabling digital transactions both online and offline to banks. UPI is an application-level interface which aims to bring several multiple payment service providers in the country on a single platform by providing an element of interoperability. The government has launched the BHIM (Bharat Interface for Money) application on the lines of private players such as paytm to facilitate transactions using the UPI on the mobile phones. The unique feature of the application is that it works on basic mobile phones as well. Many private players such as Oxigen, Itz Cash, m-PESA, PaySe are trying to grab a larger slice of the pie that the untapped Indian market has to offer with smartphone penetration estimated to reach over 500 million within few years. The key enabler in the process of digital driven financial inclusion is the country's universal electronic biometric identity database which is maintained by issuing "Aadhaar" cards. So far, 93 percent of the population has Aadhaar cards that are linked to bank accounts and welfare programs.

India's central bank the Reserve Bank of India had licensed eleven payment banks, entities mandated to facilitate electronic payments. It has also licensed small finance banks that are required to provide the entire spectrum of banking services to the unbanked sector including small businesses and employees in the unorganised sector. Difficulties in data collection of customers in order to minimise risks in lending which targeting Last Mile Access, low penetration of smartphones and digital literacy because of which Jan Dhan accounts remain largely inactive are the major challenges, to be tackled in order to meet the goals set.

Hypotheses and Data

Our objective is to empirically examine the dynamic relationships between process digitalization and expansion of financial inclusion for a panel of selected developing countries. In this regard we carry out the testing of following null hypotheses in our study:

- Process of digitalization does not promote financial inclusion, and
- Progress of financial inclusion does not cause the digitalization.

We collect the data on Digitalization (DIG) measured by size of digital economy and total spending on all items of digitalization as suggested by Global Media Report (2016) published by McKinsey and Company for the selected thirty two developing countries namely Argentina, Bahrain, Bangladesh, Botswana, Brazil, Chile, China, Colombia, Egypt, India, Indonesia, Jordan, Kuwait,

Malaysia, Mauritius, Mexico, Morocco, Nigeria, Oman, Pakistan, Peru, Philippines, Poland, Saudi Arabia, Singapore, South Africa, Sri Lanka, Sudan, Thailand, Tunisia, Turkey and Venezuela over a highly digitalized period from 2006 to 2015.

Data on Financial Inclusion (FIN) for selected countries has been provided by Global Financial Inclusion Database (Global Findex, 2016) of World Bank over the same time period. The public expenditures (PEX) towards the progress of digitalization and financial inclusion in respective economies are controlled in this empirical study. The period chosen in our study is significant for global economy in aspect of globalization. On the basis of this data base we form a balance panel and test our hypotheses.

Methodology

The dynamic quantitative relationship between digitalization and financial inclusion in selected developing countries can be estimated by applying Generalized Method of Moments (GMM) approach in a dynamic panel frame to control for endogeneity in regression models. Use of panel data to estimate common relationships across variables is particularly appropriate because it allows the identification of country specific effects which control the missing or unobserved variables. Panel data models make more information available, hence more degrees of freedom and more efficiency. The models also allow controlling the individual heterogeneity and identifying effects which cannot be detected in cross section and time series data.

Unit root tests in panel data have become very popular recently for solving the problem of low power of the tests for a single time series. The panel unit root tests, developed by Levin-Lin and Chu (LLC) (2002) and Im-Pesaran-Shin (IPS) (2003) are used to explore the panel time series properties of the variables. Panel unit root tests, although similar, are not identical to unit root tests carried out on a single series. In testing panel unit roots, the basic ADF specification is:

$$\Delta \bar{y}_{it} = \rho y_{i,t-1} + \sum_{j=1}^{p_i} \eta_{ij} \Delta \bar{y}_{i,t-j} + X'_{it} \delta + \varepsilon_{it} \quad \dots\dots\dots (1)$$

The LLC test allows intercepts, time trends, residual variances and order of autocorrelation to vary freely across the cross section units. But it requires independently generated time series with a common sample size and all individual auto-regressive of order one or AR (1) series have a common autocorrelation coefficient. The lag order p_i is permitted to vary across individuals. The appropriate lag order is chosen by allowing the maximum lag order and then by using the t-statistics for η_{ij} . The estimate of the autocorrelation coefficient, ρ_i , is not obtained directly from the estimation of equation (1). By using proxies for Δy_{it} and y_{it} are standardised and free of autocorrelations and deterministic components, the autocorrelation coefficient can be estimated in the following way.

At the first stage, the regression equation of Δy_{it} on $\Delta y_{i,t-j}$ and X_{it} is to be estimated. Similarly, the regression equation of $y_{i,t-1}$ on the same regressors is also estimated. Let the regression coefficients in these two equations are denoted by (η', δ') and (η', δ') respectively.

Then we define $\Delta \bar{y}_{it} = \Delta y_{it} - \sum_{j=1}^{p_i} \hat{\eta}_{ij} \Delta \bar{y}_{i,t-j} - X'_{it} \hat{\delta}$ and $\bar{y}_{i,t-1} = y_{i,t-1} - \sum_{j=1}^{p_i} \hat{\eta}_{ij} \Delta y_{i,t-j} - X'_{it} \hat{\delta}'$

The proxies for Δy_{it} and $y_{i,t-1}$ can be obtained as $\Delta \tilde{y}_{it} = \frac{\Delta \bar{y}_{it}}{s_i}$ and $\tilde{y}_{i,t-1} = \frac{\bar{y}_{i,t-1}}{s_i}$, where s_i are the estimated standard errors in estimating equation (1). The estimate of the coefficient may be obtained by estimating the proxy equation $\Delta \tilde{y}_{it} = \rho \tilde{y}_{i,t-1} + \omega_{it}$. Under the null hypothesis ($H_0: \rho = 0$) y_{it} is supposed to have a unit root, while under the alternative ($H_1: \rho < 0$), it is trend stationary. Under H_0 , the modified t statistic for $\hat{\rho}$ is asymptotically normally distributed as ,

$$\tilde{t}_\rho = \frac{t_\rho - (N\tilde{T})S_N\hat{\sigma}^{-2}se(\hat{\rho})\mu^*}{\sigma^*} \sim N(0,1) \quad \text{where } t_\rho \text{ is the standard t-statistic for } \hat{\rho}=0$$

$$\tilde{T} = T - \frac{\sum p_i}{N} - 1$$

S_N is defined as the mean of the ratios of the standard deviation in long-run to the innovation standard deviation for all cross section units and estimated by using kernel-based techniques, $\hat{\sigma}^2$ is the estimated variance of the error term ω . The terms μ^* and σ^* represent adjustment factors for the mean and standard deviation respectively, are computed by Monte Carlo simulation. The major weakness of the LLC test includes implicit assumption of it, that each individual AR (1) series has a common autocorrelation coefficient. Consequently, under H_0 , each series has a unit root while under H_1 , all are stationary.

In the IPS test coefficient of autocorrelation ρ is considered to be different for each cross section unit even in the case of a heterogeneous panel. In this model, the null hypothesis is

$$H_1: \begin{matrix} \rho_i = 0, \rightarrow i = 1, 2, 3, \dots, N_i \\ \rho_i = 0, \rightarrow i = N_i + 1, N_i + 2 \dots N \end{matrix}, \quad H_0: \rho_i = 0, \forall i$$

and the alternative hypothesis is. Separate unit root tests are to be performed on the N time series of the same length, T , by allowing each series to have its own short-run dynamics. After estimating the separate ADF regressions, the average of the t-statistics for $\hat{\rho}_i$, $\tilde{t}$, is adjusted to arrive at the desired test statistics.

$$\bar{t} = \frac{\sum_{i=1}^N t_{\rho_i}}{N}$$

Generalised Method of Moments (GMM)

The most commonly used estimator for dynamic panels with fixed effects in the literature is the GMM estimator by Arellano and Bond (1991). In this approach, the fixed effects are first eliminated using first differences instead of the actual level of the variables and then an instrumental variable estimation of the differenced equation is performed. As instruments of the lagged differenced endogenous variable or other exogenous variables those are correlated with the differenced error term and all lagged variables in question are used, starting with lag of two and potentially go back to the starting of the sample. The overall validity of instruments can be checked by a Sargan test, which is a test of over-identifying restrictions. The model of simple dynamic panel data with one period lag usually can be expressed as:

$$y_{it} = \alpha_i + \theta_t + \beta y_{i,t-1} + X_{it}\eta + \varepsilon_{it} \quad \dots\dots\dots (2)$$

Where α_i represents fixed effect, θ_t is time dummy, x_{it} is a $(k-1) \times 1$ vector of exogenous regressors and $\varepsilon_{it} \sim N(0, \sigma^2)$ is a random disturbance. The Hausman specification test compares fixed and random effect models under the null hypothesis that individual effects are uncorrelated with any regressor in the model (Hausman, 1978). The Hausman test uses that the covariance of an efficient estimator with its difference from an inefficient estimator is zero (Greene, 2008). If the null hypothesis of no correlation is rejected, Least Square Dummy Variable (LSDV) and Generalised Least Square (GLS) are inconsistent, but LSDV is not efficient. Otherwise, LSDV is consistent but GLS is inconsistent and biased (Greene, 2008). In this study, the Hausman test suggests that fixed effect model is more appropriate.

The presence of lagged dependent variable in equation (2) makes the dynamics nature of growth regression. This growth model of dynamics fixed panel can account for differences in individual effects and explains a part in the differences in the initial levels of technology across the states. In

order to eliminate the unobservable state-specific effects, we difference equation (2) and then it becomes:

$$\Delta y_{it} = \Delta \theta_t + \beta \Delta y_{i,t-1} + \beta \Delta X_{it} \eta + \Delta \varepsilon_{it} \quad \dots\dots\dots(3)$$

The lagged difference of the logarithm of the dependent variable is correlated with the difference of error term. To remove this kind of endogeneity in equation (3), instrumental-variables are to be used. The differenced components of endogenous explanatory variables should also be treated cautiously. We have also to use lagged values of the original regressors with at least two lagged periods as their instruments satisfying the moment conditions $E[y_{i,t-s}(\varepsilon_{it} - \varepsilon_{i,t-l})] = 0$, for $S \geq 2$, $t = 3, 4, \dots, T$ and $E[y_{i,t-s}(\varepsilon_{it} - \varepsilon_{i,t-l})] = 0$, for $t = 3, 4, \dots, T$, where x is the exogenous explanatory variable.

The basic GMM panel estimators $\delta = (z'x)^{-1} z'y$ are based on moments of the form of $g(\delta) = \sum_{i=1}^N g_i(\delta) = \sum_{i=1}^N z_i' \varepsilon_i(\delta)$, where z_i is a $T_i \times p$ matrix of instruments for cross-section i , and $\varepsilon_i(\delta) = (y_i - f(x_i, \delta))$. The GMM estimation minimizes the quadratic form, with respect to δ for a suitable chosen weighting matrix H , which is $S(\delta) = (\sum_{i=1}^N z_i' \varepsilon_i(\delta))' H (\sum_{i=1}^N z_i' \varepsilon_i(\delta))$. Thus the basic of GMM estimation involves in specifying the instruments Z , to choose the weighting matrix H , and to determine an estimator.

Empirical Results

In the dynamic panel structure to estimate the inter-linkage between digitalization and financial inclusion, we carry out the methodology of panel unit root tests developed by Levin, Lin and Chu (2002) and Im-Pesaran-Shin (2003). Panel unit root test statistics have been calculated for all underlying panels for selected developing countries. The lag lengths are selected by following minimum AIC rule. We incorporated both individual effects and individual linear trends as exogenous variables in the estimated equations. Table-1 reports panel unit root tests of the variables. We fail to reject the null hypothesis that the series contain unit roots at level both in terms of LLC and IPS tests. However, the first differences of the variables are stationary in terms of both LLC and IPS statistics. No period specific effect has been found by including time dummies for all periods.

Table 1: Estimated Statistics of Unit Root Tests

Series	LLC		IPS	
	Level	First Difference	Level	First Difference
DIG	1.87	-6.65*	-1.53	-6.88*
FIN	-1.78	-7.91*	-1.41	-7.61*
PEX	-1.69	-5.96*	-1.62	-6.04*

***Significant as probability of acceptance of null hypothesis of unit root is 0**

Source: Authors' own estimation by using data from McKinsey & Company and Global Index

We use the first difference GMM estimation developed in Arellano and Bond (1991) to control the unobserved heterogeneity involved in the estimated relationship. DIG and FIN are behaving as dependent and independent variables in the separate dynamic regression equations. PEX is considered as the control variable. The presence of lagged dependent variable in the estimated equation captures the dynamics of trends of digitalization in selected developing countries. This dynamics can account for the differences in the capability of investments in different countries. The Table-2 shows the estimated coefficients of the impact of DIG on FIN. We have incorporated some relevant variables as instrument to capture the accurate effect on controlling PEX.

Table 2: GMM Estimation of the Impact of DIG on FIN

Dependent Variable: ΔFIN (1, it)			
Method: Panel Generalized Method of Moments			
Total panel (balanced) observations: 320			
Variable	Coefficient	t-Statistics	Probability
Δ FIN (1, it-1)	0.28	18.49	0.0000
Δ DIG (it)	0.21	13.41	0.0001
Δ PEX (it)	0.18	15.26	0.0002
J-Statistics	12.79 (0.0000)	Instrument Rank	15

Source: Authors' own estimation by using data from McKinsey & Company and Global Index

The lower portion of Table-2 shows additional information about the specification of the model. Since the J-statistic is simply the Sargan statistic (value of the GMM objective function at estimated parameters) and the instrument rank is greater than the number of estimated coefficients, we may use it to construct the Sargan test over identifying restrictions. The J-statistic reported by a panel equation differs from that reported by an ordinary regression equation by a factor equal to the number of observations. We find that DIG and PEX both significantly impact FIN.

Table 3: GMM Estimation of the Impact of FIN on DIG

Dependent Variable: ΔDIG (it)			
Method: Panel Generalized Method of Moments			
Total panel (balanced) observations: 320			
Variable	Coefficient	t-Statistics	Probability
Δ DIG (1, it-1)	0.29	17.92	0.0000
Δ FIN (it)	0.15	9.33	0.0110
Δ PEX (it)	0.21	2.56	0.1143
J-Statistics	13.91 (0.0000)	Instrument Rank	15

Source: Authors' own estimation by using data from McKinsey & Company and Global Index

The Table-3 represents that the estimated coefficients of the impact of FIN on DIG in the separate dynamic panel model equation, where PEX is also treated as a control variable. Here also we have used the first difference GMM to control the unobserved heterogeneity involved in the estimated relationship. We find a significant positive impact of FIN on DIG in our considered dynamic panel structure for selected countries. It is also observed that impact of PEX on DIG is insignificant.

Concluding Remarks

The paper empirically investigated the long run dynamics between digitalization and financial inclusion. Data is utilized in dynamic panel frame of selected thirty two fastest growing developing countries during the years 2006 to 2015. Our empirical findings highlight that remarkable progress of digitalization is a significant factor of improvements in financial inclusion in developing economies and the reverse relationship is also true. Interestingly public expenditure has significant impact on financial inclusion but the impact on digitalization is insignificant. The central question on digitalization and financial inclusion is not that where it should be more or less, but what policy options, adapted to their altering circumstances, countries will have to increase the developmental impact of these two factors on their countries. We refer a number of areas in which future research and debate will be required to improve the policy formulations related to these issues, which include that how to make digitalization and financial more effective as the tools for development and planning strategies in those countries.

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Financial Inclusion in India – Achievements and Constraints

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I. Introduction

The Reserve Bank of India (RBI) has initiated in its endeavour towards universal financial inclusion plan since 2010 and continued over the past few years for inclusive growth and sustainable development. Over the period, RBI has taken up several policy initiatives to bring forward the hitherto neglected population in the formal banking system so as to increase access to and use of financial services. Since nationalization of banks, priority sector lending target of 40 percent of credit and 18 percent credit reserved for agriculture from 1980, setup of Regional Rural Banks (RRBs) in 1975 and its role in the rural sector, lead bank scheme from 1969, self-help group based on bank linkage programme from 1992, role of microfinance, etc. are major initiatives undertaken by the Reserve Bank of India over the period in order to allocate and distribute resources to empower the weaker sections and make them financially strong and independent.

Government has also introduced other measures several initiatives to promote inclusive finance and inclusive growth for sustainable development with equality. This refers to introduction of 40 percent credit-deposit ratio as policy mandate in case of rural and semi urban bank branches for achievement of regional balance in credit distribution, apart from it being an indicator of monetary liquidity for central banking regulation. Pradhan Mantri Jan-Dhan Yojana (PMJDY) scheme was introduced for universal access to banking facilities for eventual freedom from indebtedness particularly from informal sources. It is assumed that this scheme will expand the coverage of access to formal financial services over the period. Specifically, these all measures, being integral part of financial reforms, expected to bring changes in the universal access of credit and indebtedness of different sections of society.

This paper attempts to evaluate the extent gains on financial inclusion across the states with reference to policy initiatives of regulatory authorities from time to time. The study highlights the progress of two extensive surveys carried out - the Global Findex database, a survey carried out across the globe by the World Bank; and financial inclusion survey at district levels of India conducted by CRISIL. It tries to find out the linkages between indebtedness of households in India, allocation of bank credit by states and progress of PMJDY scheme from policy perspectives over the period. The debt investment survey conducted at household level provides information about sources of credit – institutional or non-institutional base, as well as purpose for which loans were sought and the degree of indebtedness over the period. Since credit-deposit ratio is used as a policy instrument by monetary authorities for utilization of credit and therefore distribution of this ratio is examined at state and regional level. Finally, the progress of recently launched programme of PMJDY, a part of financial inclusion scheme, is evaluated.

In this regard, the following three questions are relevant.

- (1) Does the higher incidence of indebtedness is associated with development of the state and is there any shift in sources of indebtedness?
- (2) Is there any shift in the pattern of credit-deposit ratio over the period?
- (3) What is the progress of PMJDY scheme among the states?

The data cover from post economic reforms, 1991 to the latest available data of 2015-16. Data are compiled from various rounds of NSSO, annual publications and reports of RBI and Ministry of Finance for PMJDY scheme progress. This data provides information of sources of credit by formal and informal institutions, and the proportion of household having credit from non-formal organizations and other sources. Such data are extracted from various rounds of NSSO on debt-investment surveys conducted at various intervals. Firstly, data of household surveys conducted by NSSO provide detailed information on indebtedness of farmers, sources of credit – formal and non-formal ones as well as the purpose for which credits are taken. Secondly, credit-deposit data at state and regional level provided the allocation of resources by banking system and utilization of credit.

II. Definition of Financial Inclusion

The term financial inclusion refers to delivery of financial services to different sections of society covering all income groups, geographical areas and economic activities at an affordable cost so as to ensure access and use of basic financial services to all. And hence, it is significant for inclusive growth and sustainable economic development of a nation. The concept of financial inclusion in its formal sense starts with having or opening a bank account. But the full benefits of having a bank account can be received with regular use and access to financial services. For example, these benefits range from paying utility bills, school fees and other transactions by households to digitized payments in the form of wages, salaries, subsidies to farmers, and grants for alleviation of poverty as well as youth unemployment schemes by the government. Digitalization of payment facilitated transfer of government remittances to the eligible beneficiaries in a more secure way and it reaches directly to the ultimate genuine recipients instead of leakages to intermediaries in conventional form of transferring funds of government schemes/ grants. Theoretically, there is a strong linkage between the extent of financial inclusion, poverty and income inequality as adequate and timely access to financial resources can minimize the extent of poverty and income inequality. It is a notable contribution of policy, plans and programmes so that it can expand the coverage of financial services from a formal banking system to the hitherto excluded masses.

According to the Committee on Financial Inclusion headed by Rangarajan (2008), financial inclusion is defined as: “The process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups such as weaker sections and low income groups at an affordable cost”. The underlying meaning of the concept of financial inclusion is to increase use of financial services to receive benefits and also protect them against any economic shocks, particularly in developing countries, where large proportion of people are still lacking in access to formal financial services. Studies by Demircuc-Kunt *et al.*, (2015) found that some of the reasons that led to lack in access to formal services, to mention among others, were high service charges, huge and cumbersome paperwork, poor legal and institutional framework, lack of infrastructures, geographical factors, market failures, etc. The state is a significant agent in removing these barriers through better governance and efficient regulatory framework in the interest of the excluded masses.

III. Literature Survey

Finance is a key to development in the sense that financial system plays a significant role in mobilising financial resources for sustainable growth and economic development. It helps in supporting and sustaining growth of different sectors and eventually pushing up real per capita output of an economy. Proper allocation of financial resources among needy is therefore essential for poverty eradication, minimisation of exclusion and inequality, improving quality life, health, inclusiveness and sustainable growth, effective governance and so on. Banks and financial institutions are capable of promoting financial inclusion, which in turn contributes to inclusive economic growth. There were extensive literatures on the hypothesis of finance led growth or financial deepening for a sustainable economic development. A well-developed financial system indicates more demand for financial services or products in the economy and vice-versa. The development and progress of a financial system may be either through demand-following or

supply-leading response. Both the phenomenon determines the structure of financial system of an economy during a given time period. The role of government is nonetheless important in using its resource capital, giving subsidies, distribution of loan portfolios (sector wise or industry wise), and support for development of private financial institutions directly or indirectly (Meier, 1984: p. 251-253).

Lack of access to finance is often the critical mechanism for generating persistent income inequality as well as slower economic growth (Beck *et al.*, (2009). It is therefore, expanding access to financial services remains an important challenge across the world, leaving much for governments to do. But not all government actions are equally effective and successful, given the institutional and political framework of an economy. Market failures due to asymmetric information, the need for coordination on collective action, and concentrations of power mean that governments everywhere have an important role to play in building inclusive financial systems (Beck and de la Torre 2007). Park and Mercado (2015) observed that the linkages between financial inclusion, poverty and income equality are strong. Their results are based on select 37 developing Asian economies. The empirical results revealed that per capita income, rule of law, and demographic characteristics significantly affect financial inclusion in developing Asia and so stronger rule of law, including enforcement of financial contracts and financial regulatory oversight broadened financial inclusion, thereby contributing to poverty reduction and lower income inequality. Study by Beck and Demirguc-Kunt (2008) also highlighted the critical role that improved access to finance has played in promoting growth and reducing income inequality. An in-depth analysis of how adults across the globe save, borrow, make payments and manage risk were carried out by Demirguc-Kunt and Klapper (2013) and found that 50 percent of adults worldwide are 'banked' and account penetration varies by the level of economic development and across income groups within countries. This variation in access to financial services is associated with various structural constraints like infrastructure, geographical coverage as well as cumbersome documentation process by financial institutions and extent of financial literacy among masses. The first study on systematically document barriers to banking services were carried out by Beck *et al.*, (2006), and data showed significant barriers to banking across countries. Correlation between bank- and country-level variables indicated that bank size and the availability of physical infrastructures were the most robust predictors of barriers. Their results found out that barriers like high minimum deposit balances, minimum loan amounts and fees can lead to exclusion by making these products unaffordable for large segment of the population. Enhancing financial literacy measures has important role in expanding the extent of financial inclusion among different sections of society. Huston (2010) summarizes the broad range of financial literacy measures and financial outcomes from different individuals and families face. A successful measure of financial literacy has the attribute of desired outcome and can identify the gap or deficiency responsible for welfare reducing financial indicators. Other factors or attributes like impulsiveness, behavioural biases, unusual preferences or external circumstances also contribute to what may appear to be poor financial decision making. A more standard approach to measure financial literacy is needed to identify barriers to financial well-being in providing solutions that enable effective financial choice.

Very few studies on financial inclusion in Indian context were carried out so far. Though the concept of financial inclusion is already incorporated in social banking objectives of Indian public sector banks but progress on this indicator is not satisfactory and more needed to be done. Dev (2006) highlighted the importance of financial inclusion in improving the living conditions of poor farmers, rural non-farm enterprises and other vulnerable groups. The study was based on 59th round survey of NSSO (report no. 498), where the data indicated that 60 percent of rural households were farmers. It was found that financial exclusion in terms of access to credit from formal financial institutions is high for small and marginal farmers and some social groups; more than 70 percent of the outstanding loans for small and marginal farmers are from informal sources such as moneylenders and traders. The role of Micro Finance Institutions (MFIs) is important to improve financial inclusion of the poor and needy households. In a similar way, Srinivasan (2007)

highlighted the challenges of financial exclusion in unorganized sector as innovations at product and process level are lacking. Self-Help-Group (SHG) linkage programme are better in covering the excluded sections of society. Empirical evidence by Mor and Ananth (2007), a case study of ICICI Bank, shows that inclusive financial systems significantly raise growth, alleviate poverty and expand economic opportunity for all. Ghosh (2012) explores the factors influencing banking outreach at sub-national level that used time series data for 1973-2004. The analysis indicates a divergence across states in terms of the outreach of finance over time, *ceteris paribus*. A combine index of dimensions of banking outreach - penetration, availability and usage found moderate levels of banking outreach across states. Regression results indicate an important role of literacy and infrastructure in determining banking outreach.

These studies on access to formal financial services, barriers, institutional and legal framework established the linkages between policy tools and social welfare objectives of economies over the period.

IV. Achievements of Financial Inclusion

Various surveys were being carried out at national and international levels to find out the extent of financial inclusion and reasons behind cross country differences in access and use of financial services. Preliminary work on the issues of financial inclusion was based on statistics from Global Findex database (World Bank group) of 2011 and 2014. These surveys reported a notable achievement of access to and use of basic financial services and cross-country variations among developed as well as developing countries. The global findex database indicated that there is an improvement in number of accounts by adults between 2011 and 2014 in India as account penetration increased in India from 35 percent to 53 percent. (Table-1)

In India, the CRISIL survey at districts level in each state on financial inclusion provided information of credit penetration, deposit penetration and branch expansion across the states (Table-2). The CRISIL survey indicated that the southern regions fall in the top five scoring index of financial inclusion with the other extremes in north-eastern regions. The index is evaluated by combining three important determinants of financial inclusion - Branch Penetration (BP), Deposit Penetration (DP) and Credit Penetration (CP) into a single standard measurement. There remained a wide gap between the southern region and the other regions in the distribution of financial inclusion, while western region hovered around the all India's score. Although the other regions are lagging behind the southern region in terms of inclusix score, the extent of financial inclusion in the north-eastern regions is critical and least in access to and use of basic financial services. One of the major factors of low branch penetration in north-eastern states is their poor infrastructural facilities and hence limited expansion of new bank branches. (Table-2)

Table 1: Financial Inclusion of India based on Global Findex Database

	2011	2014
(1) Account at a formal financial institution (% age +15)		
All Adults	35.2	53.1
Male Adults	43.7	-
Female Adults	26.5	43.1
Young adults (15-24 age)	27.3	43.2
Adults living in rural areas	33.1	50.1
(2) Access to Financial Institution Account (% age +15)		
Has debit card	8.4	22.1
ATM is the main mode of withdrawal (% with an account)	18.4	22.1
(3) Use of Formal Accounts		
Use of account to receive wages	8.3	4.0
Use of account to receive government transfers	4.0	3.6
Use a financial institution to pay utility bills	-	3.4

(4) Savings in the past year (% age +15)		
Saved at a financial institution	11.6	14.4
Saved using a savings club in the past year	3.2	8.8
(5) Credit (% age +15)		
Borrowed from formal financial institution	7.7	6.4
Borrowed from friends and outside the family	19.7	32.3
Borrowed from private informal lender	6.6	12.6

Source: The World Bank: Global Index Database

Table 2: Financial Inclusion Scores by Three Dimensions at Regional Level

Region	Branch Penetration		Credit Penetration		Deposit Penetration		Inclusix Score	
	2009	2013	2009	2013	2009	2013	2009	2013
Southern Region	49.6	69.7	68.8	88.7	55.1	83.1	54.9	76.0
Western Region	39.4	54.1	26.9	37.3	40.4	60.5	33.9	48.2
Northern Region	36.9	49.0	26.2	32.8	40.7	59.1	33.3	44.0
Eastern Region	27.4	43.1	20.1	35.1	26.5	44.8	24.3	40.2
North-eastern Region	27.7	41.2	17.9	35.8	27.7	45.9	23.8	39.7
India	37.3	52.4	33.5	45.7	39.7	60.3	35.4	50.1

Source: CRISIL Inclusix - June 2013 and June 2015

From the above surveys of financial inclusion it is observed that financial inclusion plan has extended its geographical coverage as well as qualitative information among different socio-economic group of the society over the period. In India, the extent of financial inclusion programme is expanding and awareness of benefits of having a bank account and its use has gradually increased among different population groups.

Table-3 gives a picture of the financial inclusion plan adopted by the Scheduled Commercial Banks in India with a view to increase the use of formal credit and accessibility to finance. The coverage of banking outlets in villages has multiplied by more than eight times in 2017 March as against 67694 in 2010. During 2016-17, the banking outlets opened through BCs increased by 12,243 and 513 under other modes of banking outlets in villages. Moreover, the total number of transactions through BCs increased by 332 million, while amount transacted increased by Rs.965 billion. The issue of kisan credit cards from 24 million in 2010 to 46 million in 2017; and from 1 million in 2010 to 13 million in 2017 for general credit cards. Moreover, financial literacy programmes were conducted by banks to create awareness messages in rural branches at frequent intervals. Since expansion of financial literacy and financial education is a long-term policy initiative, the actual outcome in terms of use and access to finance will be realized over the long period to come.

Table 3: Progress of Financial Inclusion Plans for all Scheduled Commercial Banks including Regional Rural Banks

Variables	Mar-10	Mar-16	Mar-17
Banking Outlets in Villages – Branches	33,378	51,830	50,860
Banking Outlets in Villages Business Correspondents (BCs)	34,174	531,229	543,472
Banking Outlets in Villages – Other Modes	142	3,248	3,761
Banking Outlets in Villages – Total	67,694	586,307	598,093
Urban Locations covered through BCs	447	102,552	102,865

(Continued)

(Table 3: Continue)

Variables	Mar-10	Mar-16	Mar-17
Basic Savings Bank Deposit Account (BSBDA) through branches (No. in millions)	60.2	238	254
Basic Savings Bank Deposit Account (BSBDA) through branches (Amount in Rs. billion)	44.3 (74)	474 (199)	691 (272)
Basic Savings Bank Deposit Account (BSBDA) through BCs (No. in millions)	13.3	231	280
Basic Savings Bank Deposit Account (BSBDA) through BCs (Amount in Rs. billion)	10.7 (80)	164 (71)	285 (102)
BSBDA Total (in millions)	73.5	469	533
BSBDA Total (Amount in Rs. billion)	55	638	977
OD facility availed in Basic Savings Bank Deposit Account (No. in millions)	0.2	9	9
OD facility availed in Basic Savings Bank Deposit Account (Amount in Rs. billion)	0.1 (500)	29 (322)	17 (189)
KCCs Total (No. in millions)	24.3	47	46
KCCs Total (Amount in Rs. billion)	1,240 (5103)	5,131 (10917)	5,805 (12620)
GCC Total (No. in millions)	1.4	11	13
GCC Total (Amount in Rs. billion)	35 (2500)	1,493 (13573)	2,117 (16285)
ICT A/Cs-BC Total Transactions (No. in millions)	27	827	1,159
ICT A/Cs-BC Total Transactions (Amount in Rs. billion)	7 (26)	1,687 (204)	2,652 (229)

Source: Reserve Bank of India: Annual Report 2016-17.

Note: Figures in the parentheses indicate average per account, card and transactions in respective years.

From the trends in financial inclusion plan, it is observed that different population groups were benefitting over the period. (Table-3)

Further, this study evaluates the extent of financial inclusion achieved in terms of change in household indebtedness, credit distribution/ utilization (C-D ratio) and PMJDY accounts across the states over the period.

(A) Debt-Indebtedness of Households

Incidence of indebtedness is defined as number of households with any one loan (from respective source) divided by households in that population segment. Indebtedness of households by source and purpose explains the status of exclusion of finance. Credit to farmer household is an important indicator of financial inclusion. Data for the degree of financial inclusion of households should have data on households that are denied credit. Since there is no ready data on such, farmers' indebtedness is used as a proxy. According to the 59th round survey of NSSO (report no. 498) there were nearly 150 million rural households out of which around 90 million are farmer households.

Table 4: Incidence of Indebtedness in rural and Urban Households in India (percent)

NSSO Rounds	Rural			Urban		
	Cultivator	Non-cultivator	All	Self-employed	Others	All
1991	25.9	18.5	23.4	19.9	18.9	19.3
2002	29.7	21.8	26.5	17.9	17.8	17.8
2012	35.0	25.6	31.4	24.7	21.3	22.4

Source: Government of India: NSSO 48th Round, 53rd Round, 70th Round.

The incidence of indebtedness was about 31.4 percent among the rural households and 22.4 percent among the urban households. Indebtedness in cultivator households tends to increase from 26 percent in 1991 to 35 percent in 2012 (higher by about 9 percentage points) than non-cultivator households, whereas the difference among occupational categories of urban area was less (about 4 percentage points). The incidence of indebtedness in rural areas is higher than that of urban areas by 9 percentage points during 2012 and within the rural household indebtedness; the proportion of indebtedness is higher for cultivator than that of non-cultivators. (Table 4)

Table 5 : Share of Institutional and Non-Institutional Agencies in Outstanding Cash Debt of Major States in Rural Areas (percent)

Major States	Institutional				Non-institutional			
	1981	1991	2002	2012	1981	1991	2002	2012
Andhra Pradesh	41	34	27	42	59	66	73	58
Assam	31	66	58	72	69	34	42	28
Bihar	47	73	37	22	53	27	63	78
Gujarat	70	75	67	64	30	25	33	36
Haryana	76	73	50	52	24	27	50	48
Himachal Pradesh	75	62	74	86	25	38	26	14
Jammu & Kashmir	44	76	73	72	56	24	27	28
Karnataka	78	78	67	50	22	22	33	50
Kerala	79	92	81	78	21	8	19	22
Madhya Pradesh	66	73	59	52	34	27	41	48
Maharashtra	86	82	85	73	14	18	15	27
Orissa	81	80	74	57	19	20	26	43
Punjab	74	79	56	64	26	21	44	36
Rajasthan	41	40	34	31	59	60	66	69
Tamil Nadu	44	58	47	62	56	42	53	38
Uttar Pradesh	55	69	56	57	45	31	44	43
West Bengal	66	82	68	51	34	18	32	49
All India	61	64	57	56	39	36	43	44

Source: Government of India: NSSO 48th Round, 53rd Round, 70th Round.

Table 6: Percentage distribution of amount of cash dues by purpose for different All-India Debt and Investment Survey (AIDIS)

Purpose of loan	% distribution of amount of cash dues by purpose in							
	Rural				Urban			
	1981	1991	2002	2012	1981	1991	2002	2012
(A) Productive purposes	69	23	53	40	42	17	25	18
farm business								
Capital expenditure	43	12	27	13	6	3	3	1
Current expenditure	18	3	14	15	4	0	2	1
non-farm business								
Capital expenditure	7	6	9	9	23	11	17	8
Current expenditure	2	2	3	3	8	4	3	8
(B) Other purposes	31	78	47	60	56	83	75	82
All purposes	100	100	100	100	100	100	100	100

Source: Government of India: NSSO 70th Round.

Despite banking development, non-institutional source remained an important source, providing more than one-third of credit demand over the period. Most of the states reported an increase in share of non-institution after banking reforms (1991). It was in seven states with 50 percent (Karnataka), 78 percent (Bihar), followed by 69 percent (Rajasthan). In terms of source of credit in rural areas, the average score at all India level from institutional source was 61 percent in 1981;

(except marginally up at 64 percent in 1991), declined to 57 percent in 2002 and further to 56 percent in 2012. The share of outstanding cash debt from non-institutional source was 39 percent in 1981, declined to 36 percent in 1991, but increased in the subsequent decades to 43 percent in 2002 and further 44 percent in 2012. From the point of view of source of credit, the institutional source with 56 percent in 2012 dominated but the non-institutional credit sources with 44 percent in 2012 do not seem fade away. The main part is that share of the credit under institutional source has fallen slightly from 1991 onwards.

Inter-state comparison in the source of outstanding cash debt indicated that roughly four states have shifted source of outstanding cash debt from non-institutional to institutional sources. Households in states like Bihar, Rajasthan and Andhra Pradesh have sourced higher percentage of credit from non-institutional lenders by 78 percent, 69 percent and 58 percent respectively during 2012. (Table-5)

As far as purpose of credit is concerned, there is a declining trend in credit for productive purposes; the percentage is lower for urban areas than that of rural areas. In rural areas credit for productive purposes was 69 percent of the total loans in 1981, which declined to a minimum level of 23 percent in 1991, but post economic reforms onwards the trend has increased to 53 percent in 2002 and 40 percent in 2012. The urban areas have lower percentage of credit for productive purposes than rural areas with 42 percent in 1981, which declined to 18 percent in 2012. In fact, urban areas have higher percentage of credit for other purposes, 82 percent in 2012; the corresponding figure for rural areas is 60 percent. In other words, in both population groups the percentages of other purposes loans were higher than productive purposes. (Table-6)

(B) Credit allocation and Distribution

The credit-deposit ratio is a measure of distribution utilization of credit resources in the region by the banking system. It is an important indicator of how the funds are efficiently allocated and distributed by banks across different regions and states. A rise in the credit-deposit ratio reflects the higher supply and utilization of the resources of banks in the states. In other words, higher credit-deposit ratio also indicates that the rise in credit was sharper than the deposit expansion. Credit-deposit ratio of scheduled commercial banks is reported for the period after financial sector reforms, 1994-95, 2000-01, 2005-06, 2010-11 and 2015-16 (latest year).

During the period 1994-95, the mean credit-deposit ratio at the all India level is 55.6 percent. At the regional levels, it is only the southern region and western region that have a credit-deposit ratio above the national average ratio of 69.4 percent and 63.2 percent respectively. For the other regions, the credit-deposit ratios were below the national average, with the north-eastern region being the least value among others. In terms of individual state level, six out of the thirty-two states and union territories scored above the national average, revealing either under-utilization of banking resources or lack of lending activities in majority of the states in India during 1994-95.

The credit-deposit ratio remains more or less same in 2000-2001 with 56.7 percent. Consequently, during the period 2005-06, the credit-deposit ratio increased to 72.4 percent at the national average. Not so much changes are visible in the distribution of the ratio at state and regional levels during this period. During the periods 2010-11 and 2015-16, there is an upward trend in the ratio touching to 75.6 percent in 2010-11 and 78.4 percent in 2015-16.

At the individual state level, there are significant improvement in the credit-deposit ratio during these years except for north-eastern regions and some states in eastern region. Andhra Pradesh and Tamil Nadu are the states in southern region that leads to high C-D ratio in this region. In the western region, Gujarat and Maharashtra are two states with outstanding performance with high C-D ratio. For the northern region, Delhi and Chandigarh formed major share recording high C-D ratio in the region. As in north-eastern region, 4 of the 7 states have C-D ratio of below 40 percent and the remaining three states less than 50 percent. Regional disparity in distribution of credit and allocation of banking resources is depicted by inter-state differences in C-D ratio.

Table 7: Region/ State-wise Credit-Deposit Ratio (Sanctioned) of Scheduled Commercial Banks

Region/ State-wise	1994-95	2000-01	2005-06	2010-11	2015-16
Northern Region	48.6	54.7	64.6	82.5	83.6
Haryana	45.5	41.0	57.4	71.7	69.9
Himachal Pradesh	26.0	21.3	41.0	41.6	32.9
Jammu & Kashmir	28.6	34.5	47.2	38.1	44.2
Punjab	41.4	41.1	56.8	77.8	69.8
Rajasthan	47.7	46.6	77.3	90.4	72.4
Chandigarh	89.9	99.4	76.8	121.6	97.8
Delhi	52.8	66.1	67.4	86.8	100.4
North-Eastern Region	35.6	27.6	40.7	33.8	38.4
Arunachal Pradesh	12.4	14.5	26.5	23.7	29.0
Assam	38.7	32.1	42.6	36.5	42.2
Manipur	58.2	40.1	50.1	34.8	41.1
Meghalaya	17.0	17.1	48.1	24.4	24.8
Mizoram	16.5	24.1	51.2	46.0	40.1
Nagaland	37.8	12.4	22.3	26.1	34.1
Tripura	47.5	21.7	32.8	32.2	35.3
Eastern Region	47.1	36.7	49.2	51.4	44.9
Bihar	32.5	20.7	30.3	29.5	33.4
Jharkhand	--	28.0	31.2	34.4	29.6
Odisha	54.5	40.2	66.0	52.5	40.8
Sikkim	24.0	14.4	45.3	37.9	28.0
West Bengal	53.9	44.5	56.3	63.7	55.1
Andaman & Nicobar Islands	17.0	16.3	29.0	38.1	44.2
Central Region	39.0	32.7	44.2	46.7	49.3
Chhattisgarh	--	38.5	45.5	52.3	63.5
Madhya Pradesh	49.6	47.6	60.5	55.6	61.2
Uttar Pradesh	35.1	28.3	41.0	44.0	44.6
Uttarakhand	--	21.7	25.8	35.4	34.9
Western Region	63.2	75.5	92.0	79.5	96.0
Goa	24.7	26.1	23.2	29.1	27.1
Gujarat	46.6	48.5	55.6	66.2	75.4
Maharashtra	69.5	86.4	102.2	83.0	102.9
Dadra & Nagar Haveli	16.3	14.3	49.3	34.8	35.8
Daman & Diu	16.7	13.3	11.4	21.3	22.9
Southern Region	69.4	66.6	84.4	94.5	89.3
Andhra Pradesh	73.0	64.5	81.3	109.7	106.0
Karnataka	65.8	61.0	75.9	72.7	70.1
Kerala	44.8	43.3	61.4	73.1	62.1
Tamil Nadu	86.6	90.6	110.5	115.1	113.7
Lakshadweep	7.7	10.4	11.5	8.7	10.5
Puducherry	43.3	33.5	45.0	62.7	67.1
Telangana	-	-	-	-	104.5
All India	55.6	56.7	72.4	75.6	78.4

Source: RBI: Report on Trend and Progress of Banking in India, various issues

Table 8: Population group-wise credit-deposit ratio of Scheduled Commercial Banks according to place of sanction

Population Group	1996-97	2000-01	2005-06	2010-11	2015-16
Rural	44.1	39.0	55.8	60.0	66.9
Semi-urban	38.1	33.2	50.1	53.2	57.7
Urban	44.4	43.0	57.0	61.6	55.6
Metropolitan	76.1	80.9	87.5	88.4	96.7
All India	56.8	56.7	72.4	75.6	78.4

Source: (a) RBI: Report on Trend and Progress of Banking in India

(b) RBI: Basic Statistical Returns of Scheduled Commercial Banks in India.

Population group-wise distribution of C-D ratio is another dimension of measuring the deepening of banking credit. The distribution of credit across population groups dictates the credit absorption and capacity utilization of banking resources. There is an upward movement of the credit deposit ratio over the period in each population group. The credit-deposit ratio is the highest in metropolitan areas for each of the sample years taken. The credit-deposit ratio in rural areas has improved at a faster rate from 44 percent in 1996-97 to 67 percent in 2015-16 (higher than urban and semi-urban percentages). The concentration of credit is evident in the metropolitan areas as its credit-deposit ratio is 97 percent in 2015-16, as against the 78 percent of average of all India. (Table-8)

(C) Progress of Pradhan Mantri Jan Dhan Yojana (PMJDY)

As a part of financial inclusion plan, the Government of India recently launched Pradhan Mantri Jan Dhan Yojana (PMJDY) on August 28, 2014, for expanding formal financial services to the hitherto excluded population. The major features of the scheme include the following: (i) the facility to open a Basic Saving Bank Deposit (BSBD) account in any bank branch or BC outlet; (ii) accidental insurance cover (Rs. 0.1 million) and life insurance cover (Rs. 30,000); and (iii) an Overdraft (OD) facility after satisfactory operation of the account for six months.

The recent survey report indicated 100 percent coverage of households, though there were a few exceptions of districts not covered fully. The coverage of population in rural/ semi-urban based bank branches is 60 percent of the total beneficiaries, as against 40 percent in urban/ metro based bank branches. At the all India level, average amount per card is found to be at Rs.3681, and 18 states out of the 36 states have amount above this value. Regarding card distribution, 29 states have card per beneficiaries' ratio in the range of 0.70 points to 0.89 points, showing the maximum coverage in the distribution of cards across the states although it is very near to 1. (Table-9)

Table 9: State-wise Number of Accounts, Deposits and RuPay Card issued under Pradhan Mantri Jan Dhan Yojana (PMJDY) in India (as on 21.09.2017)

Name of States	Beneficiaries at rural/ semi-urban centre bank branches (percent)	Beneficiaries at urban/ metro centre bank branches (percent)	No. of RuPay cards issued to beneficiaries	RuPay cards issued to beneficiaries (percent)	Cards per beneficiaries	Amount per card (Rs.)
Andaman & Nicobar	30.34	69.66	703368	0.31	0.88	937
Andhra Pradesh	49.78	50.22	6382508	2.80	0.82	1686
Arunachal Pradesh	58.52	41.48	178341	0.08	0.75	3900
Assam	75.09	24.91	9398072	4.12	0.74	2782
Bihar	64.51	35.49	21639481	9.49	0.68	2669
Chandigarh	16.67	83.33	185115	0.08	0.83	4634

Name of States	Beneficiaries at rural/ semi-urban centre bank branches (percent)	Beneficiaries at urban/ metro centre bank branches (percent)	No. of RuPay cards issued to beneficiaries	RuPay cards issued to beneficiaries (percent)	Cards per beneficiaries	Amount per card (Rs.)
Chhattisgarh	66.46	33.54	8659404	3.80	0.66	2272
Dadra & Nagar Haveli	79.94	20.06	69963	0.03	0.65	4817
Daman & Diu	54.94	45.06	24681	0.01	0.66	5749
Delhi	12.16	87.84	2966134	1.30	0.79	4552
Goa	74.18	25.82	156120	0.07	0.80	5236
Gujarat	52.74	47.26	9027103	3.96	0.79	3009
Haryana	53.87	46.13	5113971	2.24	0.83	4406
Himachal Pradesh	87.14	12.86	774719	0.34	0.82	5388
Jammu & Kashmir	85.96	14.04	1483836	0.65	0.75	4640
Jharkhand	74.17	25.83	7810221	3.43	0.73	2570
Karnataka	60.92	39.08	8529895	3.74	0.85	2612
Kerala	44.32	55.68	2899554	1.27	0.73	3947
Lakshadweep	46.81	53.19	18084	0.01	0.84	5889
Madhya Pradesh	48.01	51.99	19060082	8.36	0.70	1644
Maharashtra	50.14	49.86	14671085	6.44	0.69	2538
Manipur	44.50	55.50	683489	0.30	0.86	2586
Meghalaya	84.35	15.65	224664	0.10	0.55	5802
Mizoram	38.74	61.26	110306	0.05	0.35	4842
Nagaland	51.10	48.90	183676	0.08	0.77	2243
Orissa	73.11	26.89	9231710	4.05	0.76	3213
Puducherry	31.69	68.31	1292513	0.57	0.87	1091
Punjab	56.74	43.26	4615696	2.02	0.83	4317
Rajasthan	62.21	37.79	16813495	7.37	0.83	3013
Sikkim	73.78	26.22	82653	0.04	0.74	4500
Tamil Nadu	47.26	52.74	7678174	3.37	0.86	1974
Telangana	57.20	42.80	7156990	3.14	0.82	1813
Tripura	70.21	29.79	712251	0.31	0.86	9372
Uttar Pradesh	58.93	41.07	36040035	15.81	0.76	2930
Uttarakhand	64.43	35.57	1686184	0.74	0.78	4521
West Bengal	68.88	31.12	21717608	9.53	0.75	4420
All India	59.58	40.42	227981181	100.00	0.76	3681

Source: Government of India: Ministry of Finance, Department of Financial Services.

Table 10: Distribution of amount per card in states under PMJDY

Amount (Rs.)	No. of states	Name of states
Above Rs.5000	06	Daman & Diu; Goa; Himachal Pradesh; Lakshadweep; Meghalaya; Tripura
Rs.4000 to Rs.5000	10	Chandigarh; Dadra & Nagar Haveli; Delhi; Haryana; Jammu & Kashmir; Mizoram; Punjab; Sikkim; Uttarakhand; West Bengal
Rs.2000 to Rs.4000	15	Arunachal Pradesh; Assam; Bihar; Chhattisgarh; Gujarat; Jharkhand; Karnataka; Kerala; Maharashtra; Manipur; Nagaland; Orissa; Rajasthan; Uttar Pradesh;
Below Rs.2000	06	Andaman & Nicobar; Andhra Pradesh; Madhya Pradesh; Puducherry; Tamil Nadu; Telangana

Source: Calculation based on Table-9.

Table 11: Distribution of Card per Beneficiaries by States

Ratio of Card issued to Total beneficiaries	No. of states	Name of states
0.80 to 0.89	15	Andaman & Nicobar; Andhra Pradesh; Goa; Karnataka; Manipur; Rajasthan; Puducherry; Tamil Nadu; Telangana Chandigarh; Haryana; Mizoram; Punjab; Himachal Pradesh; Lakshadweep; Tripura
0.70 to 0.79	14	Assam; Arunachal Pradesh; Delhi; Gujarat; Jammu & Kashmir; Jharkhand; Kerala; Madhya Pradesh; Nagaland; Orissa; Sikkim; Uttarakhand; Uttar Pradesh; West Bengal
0.60 to 0.69	05	Bihar; Chhattisgarh; Dadra & Nagar Haveli; Daman & Diu; Maharashtra;
0.30 to 0.59	02	Meghalaya; Mizoram

Source: Calculation based on Table-9.

From Table-10, it is observed that out of the 36 states, 6 states have amount per card of more than Rs.5000. These states are namely Daman & Diu, Goa, Himachal Pradesh, Lakshadweep, Meghalaya and Tripura. Majority of the states have an amount per card within the range of Rs.2000 to Rs.4000, covering 15 states in all under this limit. And 6 states have an amount per card of less than Rs.2000.

Table-11 indicates distribution of card per beneficiaries by states. The ratios in respective states show that 15 states received card to beneficiaries' ratio of 0.80 to 0.89 points. And 14 states have received with 0.70 to 0.79 points of card to beneficiaries. Only two states namely Mizoram and Meghalaya got lower proportion of 0.35 and 0.55 respectively. In all, the coverage of card distribution across the states is fair as majority of the states received more than 0.70 points, closer to value of 1.

The data of PMJDY revealed that there is maximum coverage of states in terms of proportion of cards distributed per beneficiaries, coverage of cards distribution and amount per card maintained by states, although some of the states have very low balance per card issued. On an average Rs.3681 is amount per card at all India level, which could be maintained by half of the states. (Table-10 and Table-11)

V. Constraints

Though there were provisions of financial inclusion plan by regulatory authorities, but the task of extending banking services to 1.3 billion populations is not so easy. There are several factors that constrained in the extension of universal financial services for inclusive growth. The demand side factors include low literacy levels, lack of knowledge about financial products and benefits, not having a definite income source, cumbersome documentation process, inflexibility of financial products, lack of security from cyber frauds, etc. Supply side constraints are outreach, regulatory framework, efficient network of banks and other financial institutions, in appropriate design of products and services, etc. A robust financial inclusion design depends on a multiplicity of parameters encompassing varied socio-economic backdrops and feasible financial service delivery mechanism that would vary from region to region (Chakrabarty, 2012). Though, digitalization has lessen the time costs incurred in transactions of financial services, still use of technology based products are not so popular and inconvenient to population, particularly in rural and remote areas, and there is still preference of conventional mode. Financial literacy and bringing awareness about services among the masses is challenging task. Technology made easy and simplified process in expansion of financial literacy programmes conducted for awareness messages in several languages at block levels. Besides credit absorption capacity depends on topography and infrastructures in that particular region. For example one of the barriers to formal banking services

in north-eastern region is lack of proper infrastructures in the region. According to recent data, cyber frauds cases related to ATM/ Debit Card, Credit Card and Net Banking frauds rise by 25 percent to 16468 cases during 2015-16. Though the RBI set up the Reserve Bank Information Technology Private Ltd. (ReBIT) to take care of its IT requirements, but threats are visible in the form of new risk exposures and complexities into financial services technology, lack of security in digital transactions by customers. Defining the barriers to financial inclusion programme is a challenging task and needed clarity on the issues to overcome the loopholes in expanding financial services for inclusive growth.

VI. Conclusions

Financial inclusion provides a roadmap for optimal development of financial sector and seeks to fill up the gaps in delivery of formal financial services. The present study is based on three different perspectives of policy gains taken up by regulatory authorities over the period. Firstly, the degree, source and purpose of debt by households in rural and urban areas by state are analyzed. Secondly, credit-deposit ratio is used as an indicator of utilization of financial resources and credit capacity absorption by states and regions. Lastly progress of PMJDY scheme among states is evaluated.

Incidence of indebtedness is high in rural areas (31.4%) than in urban areas (22.4%) as on 2012. There is a gradual increase in the incidence of indebtedness in both population groups since 1991 when economic reforms began. Debt investment survey data indicated over the period a quality change in debt composition due to shifting of source of rural cash outstanding debt from non-institutional to institutional source. However, in states like Bihar, Rajasthan and Andhra Pradesh, the non-institutional sources still dominated for debt among households. As far as purpose of loans is concerned, both rural and urban areas borrowed loans more for other purposes than for productive purposes. The proportion of loans for other purposes is higher in urban areas (82%) than that of rural areas (60%) in 2012. Southern and western regions have higher score of C-D ratio than other regions, as well as that of the national average ratio. Regarding C-D ratio by population group, the highest is in metropolitan followed by urban areas. Semi-urban and rural areas showed relatively low credit-deposit ratios because of poor infrastructure and lack of economic opportunities/activities. There are challenges in execution of this financial inclusion plan because of the several constraints such as lack of financial infrastructure, inaccessible geographical areas, poor availability of bankable economic activities, financial illiteracy, technology gap between urban and rural and shortage of appropriate business skills. The data of PMJDY revealed maximum coverage of states in terms of proportion of cards distributed per beneficiaries, geographical coverage of cards distribution but very small amount per card maintained by states, although some of the states have extremely low balance per card issued. On an average Rs.3681 given per card at all India level, that was maintained by 50 percent of the states only.

From this it is observed that there is modest progress, if not appreciable in credit distribution and promoting financial inclusion and also shifting households from non-institutional to institutional credit source. The coverage of bank branches, number of accounts in rural areas, financial literacy and awareness of financial services, etc. were expanded in different regions of the nation. The scope of financial inclusion is broad and its challenges are too many to deal with. All these are policy objectives driven. In the absence of these financial inclusion measures, the environment of banking services particularly in rural areas would have deteriorated further to affect public welfare very adversely. Growth and development would have slowdown; inequality would have widened among the regions and population groups. However, constraints in terms of extension of development of outreach, infrastructures in rural areas, appropriate products designs and services, simplification of documentation process, elimination of IT related threats for better security, etc. need to be overcome to encourage and ensure desired financial inclusion for sustainable growth and development.

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Financial Inclusion in Bangladesh through Mobile Banking: Special Reference to bKash Limited

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Introduction

Financial inclusion efforts seek to ensure that all households and businesses, regardless of income level, have access to and can effectively use the appropriate financial services they need to improve their lives (CGAP, 2017). According to the Annual Report 2016 of UNCDF (United Nations Capital Development Fund), the financial inclusion has been materialized as a burning issue to the researchers, academicians and governments of both developed and developing countries since the early 2000s after the research findings about financial exclusion and its direct correlation to poverty in third world countries, like Bangladesh. Financial inclusion that expands the opportunities for individuals, households and small businesses to participate in the local economy, providing them with the tools they need to climb out of poverty and manage their financial lives. In Bangladesh, during last few years, the banking industry has experienced remarkable growth. However, there are concerns that banks have not been able, due to high operating costs, to include vast section of entire population into the fold of basic banking services, especially peoples from remote and rural areas. Thus, Bangladesh Bank, the central bank of Bangladesh, encouraging scheduled banks to deliver banking facilities to the people through updated technologies such as ATMs, mobile banking, smart cards, etc. Among these technologies, mobile banking has the great potential to make basic financial services more accessible to low-income people (CGAP, 2006). As per report of US Federal Reserve System in 2016, "mobile banking and mobile payments have the potential to expand financial services to the unbanked and under-banked by reducing transaction costs and increasing the accessibility of financial products and services." According to IFC (International Finance Corporation, 2010), mobile banking refers to a system that enables people to conduct financial transactions using a mobile device against a bank account accessible from that device. Since, compared to traditional banking, with the mobile banking system, an account holder can conduct banking transactions without visiting a bank branch, thus it increases the efficiency of the individual account holder by saving time as well as eliminating space shortcomings (Mishra and Sahoo, 2013; Ahmed et.al, 2012). In Bangladesh, mobile banking service or mobile financial service was introduced effectively in March 2011 and thus still in its infancy stage. In Bangladesh, mobile banking services are quite in the initial phases of the development. It is the right time to device a mobile banking system for the improvement of financial inclusion. The commercial banks have a huge untapped market and needs to be captured through which financial inclusion are assumed to be accelerated. In contrast, preceding research on this problem, in Bangladesh, is so inadequate and consequently this paper is an endeavor to lessen the research gap in this regard.

Objectives of the Paper

The objectives of the paper are as follows:

1. To illustrate the overall mobile financial services in Bangladesh.
2. To analyze the financial parameters of mobile banking services of bKash Limited.
3. To analyze the operational parameters of mobile banking services of bKash Limited.
4. To examine the effect of average daily transactions count on the net income of bKash Limited.

Research Methodology

The research study has been conducted principally based on secondary data, which have been collected from annual reports of bKash Limited, articles of different journals and websites. The collected data have been analyzed through descriptive statistics (tables and graph) and linear regression by using SPSS version 16.0. In addition to, the researchers are using MS Excel (2016) to present and analyze the growth data and to extent, some calculations of financial and operational parameters. To accomplish the objectives, the following hypothesis has been developed:

H₁: Average Daily Transaction Count affects Net Income of bKash Limited.

For regression analysis, the following model has been used: $Y = a_0 + b_1x_1 + e$

Here, Y =Dependent variable (Net Income=NI), a_0 =Constant, x_1 is the independent variable (Average Daily Transaction Count=AVTC), b_1 is the coefficient of the independent variable and e is the error term.

Literature Review

Ahmed *et al.*, (2012) found mobile banking saves time, less costly and speedier than traditional banking. Alsamydai *et al.*, (2014) got positive impact of the motivating factors on the usage of mobile banking services. Sharma and Kukreja (2013) have written that undoubtedly, financial inclusion is playing a catalytic role for the economic and social development of society but still there is a long road ahead to achieve the desired outcomes. Rahman (2009) concluded that financial inclusion is a key element of social inclusion necessary in fostering inclusive growth participated by and benefiting all population segments. In a report of IFC (2014), it has been written that 98 percent of mobile users have access to Bkash. Nabi *et al.*, (2012) have inferred that both Dutch Bangla and BRAC Bank/ bKash launched in 2011 and have moved to activate agent networks in nearly all districts. Cheston *et al.*, (2016) told the advancement of financial inclusion in recent years has been truly remarkable-fueled by new technologies, communications infrastructure-enabling legislation, and business opportunities at the base of the pyramid. Chitungo & Munongo (2013) have concluded that extended TAM can predict consumer intention to use mobile banking. Specifically, perceived usefulness, perceived ease of use, relative advantages, personal innovativeness and social norms have significant effect on user's attitude thus influence the intention toward mobile banking. Koo *et al.*, (2013) found that extended TAM could predict consumer intention to use mobile banking. Specifically, perceived usefulness, perceived ease of use, relative advantages, personal innovativeness and social norms have significant effect on user's attitude thus influence the intention toward mobile banking. Awareness, usefulness, simplicity, compatibility, self-efficacy and creditability of mobile banking service can have an influence on their adoption and usage of the service (Cudjoe *et al.*, 2015). According to Dermish *et al.*, (2011), formal access to finance is hindered by a lack of relevant information and customer service infrastructure while Jalil (2016) has told that financial inclusion boosts up economic development. The customer's perception was found to be overwhelmingly positive (Hossain and Haque, 2014). Hossain and Ahmed (2012) have inferred mobile banking has demonstrated a great power to bring financial services close to the doorstep of poor people and most of the MFIs started mobile banking with a view to increase new customer, reduce operational costs and, to provide better services to existing customers. Elkhodr *et al.*, (2012) have suggested a trust negotiation approach is proposed to address these security concerns. Financial inclusion is thus a high priority policy goal for developing and developed countries in order to ensure stable and equitable economic growth (Islam and Mamun, 2011). Iqbal and Sami (2011) told financial inclusion is emerging as a new paradigm

of economic growth that plays major role in driving away the poverty from the country. Bangladesh Bank, the country's central bank, is supporting the government's efforts with its own initiatives by promoting financial inclusion and environmentally sustainable financing and mobile financial services have become the key tool of financial inclusion initiatives (Chowdhury, 2016) whereas banking sector's credits to agricultural sector are significantly facilitating financial inclusion in Bangladesh (Sarker *et al.*, 2015). Financial inclusion and financial deepening have an important role to play in promoting economic growth and reducing poverty and inequality, while mitigating systemic risk and maintaining financial stability (Khaitan, 2014). Financial inclusion has been identified as a priority sector in the government's efforts to make the growth process more equitable and inclusive, and technology is playing a pivotal role in this process by reducing the cost of delivery while increasing the sector's efficiency and productivity (Gopalan, 2010). In India, number of households with bank accounts doubled over the duration of the financial inclusion drive (Ramji, 2009). Rugamba and Kapoor (2012) inferred that a significant percentage of the population remains financially excluded and the potential of the mobile phone to extend them financial services is still to be tapped. Shi (2011) found overall adoption rate for advanced mobile service in China is not as satisfactory as industry predicted, but users have a strong will to adopt such service in the future. They value mobile banking for proving queue avoidance, alternative payment method and security assurance but lack of awareness hinders mobile financial service adoption. Kamal and Mondal (2016) found that among the banks in Bangladesh, Brac Bank Limited is taking the lead with a market share of approximately 50 percent with its unique product called bKash. bKash has done an extraordinary work in familiarizing mobile banking in Bangladesh. It has done overwhelming activity and become the synonym for mobile money transaction. The next bigger pie is captured by the DBBL although it was the pioneer of the mobile banking service in Bangladesh, by holding a market share of about 28 percent. The remaining 22 percent of the market share is shared by the other banks. Cheston *et al.*, (2016) concluded the advancement of financial inclusion has been fueled by new technologies and communications infrastructure. Despite the encouraging trends documented in this report, close to 2 billion adults around the world still lack access to an account. Sarma (2008) has measured the extent of financial inclusion across economies by proposing a multidimensional Index of Financial Inclusion (IFI) and found Austria leads with the highest IFI value of 0.953 and Madagascar ranks the lowest with an IFI value of 0.009. Klein and Mayer (2011) believe mobile banking is growing at a remarkable speed around the world but creating considerable uncertainty about the appropriate regulatory response and for this reason, they have set out a framework for considering the design of regulation of mobile banking. Hashim and Hassan (2015) have proposed a new model based on the Unified Theory Of Acceptance And Use Of Technology (UTAUT2) to obtain better insights into the factors that could affect customers' acceptance of M-banking in Malaysia and found that lack of trust is one of the most frequented reasons of the limitation in accepting M-banking in developing countries. Yu (2009) identified and investigated the factors, which influence customers' decision to use a specific form of mobile banking, and specifically focused on the evaluation of SMS-based mobile banking in the context of New Zealand by using Technology Acceptance Model (TAM). The author found service quality and service awareness are influencing user perceptions about the usefulness of SMS mobile banking which in turn affect intention to use and adoption. Leonard (2011) has shown that individuals who use M-Pesa services are satisfied with this service and recommended that research has to be made further to assess the interest rate charged with mobile money transfer services by mobile companies. According to Shaikh and Karjaluo (2015), Mobile banking (m banking) has emerged as an important distribution channel, with considerable research devoted to its adoption. Hasan and Islam (2016) computed an index of financial inclusion (IFI) of Bangladesh at the district levels by using a distance based approach and incorporating various dimensions of inclusive finance and found that the index value reflecting overall financial inclusion of Bangladesh increased to 0.697 in 2014 from 0.503 in 2008. Haonga (2015) inferred that mobile banking on customer's satisfaction is very effective. Mutua (2013) determined the effect of mobile banking on the financial performance of commercial banks in Kenya. The total amounts transferred via the mobile for the past five years were collected and the number of mobile banking users was regressed against bank performance as measured by the return on assets and found that there exist a weak

positive relationship between mobile banking and the financial performance of commercial banks in Kenya. Ngumi (2014) studied the effect of bank innovations on the financial performance of commercial banks in Kenya and findings revealed that bank innovations had statistically significant influence on income, return on assets, and profitability and customer deposits of commercial banks. The findings also revealed that mobile phones had a higher moderating effect than internet services on the bank innovations when influencing financial performance. In the daily newspaper New Age (2017) it has been reported that mobile banking is important at this time for financial inclusion of poor after microcredit program. Mobile banking did not have impact on the social status, agricultural output or asset of the families that used the mobile banking but it influenced their consumption. Earlier these families were dependent on borrowing for consumption, which reduced because of quick transfer of money. Chowdhury (2014) concluded there are substantial financial gaps across the economies and within the households. In rural context, it is evident that financial access is low in developing countries like Bangladesh. Singh (2014) has examined the feasible model of mobile banking based money order by integrating India Post with banking sectors and found out the factors that drive and inhibit the demand potentials for such services. Mwaura (2009) in a paper bridged the gap between the studies of mobile phones technologies and practice in an effort to provide a solution to developmental/ economic issues in developing nations. Rao and Troshani (2007) explored, analyzed and critically assessed the use of existing acceptance theories in the light of the evolving and ubiquitous mobile services and their underlying technologies. Faruk and Noman (2013) studied the model of Financial Inclusion Index (FII) between 2007 and 2010 in district level to analyze the changes of FII in Bangladesh by using three dimensions named as coverage, availability, input and output of banking services. However, FII ranking of 19 districts have shown positive changes but ranking of 10 districts have not changes where 35 districts have negatively changed among the 64 districts of Bangladesh. They identified lack of strong infrastructure, inadequate financial information, and high account maintenance balance, low income of people and high cost of banking product are the reasons of slow financial inclusion. Hannig and Jansen (2010) thought financial inclusion poses risks at the institutional level, but these are hardly in nature. Evidence suggests that low-income savers and borrowers tend to maintain solid financial behavior throughout financial crises, keeping deposits in a safe place and paying back their loans. Jain (2013) found from an exploratory research that consumers are serious about the risk of conducting banking via a wireless channel, measured in terms of overall security and trustworthiness of the services offered. However, because of various problems in m-banking system this is not widely accepted by Southern Rajasthan bank customers in India. Elkhodr *et al.*, (2012) have proposed a trust negotiation approach to address security concerns of mobile banking. Sultana and Khan (2016) have examined whether the introduction of mobile financial services have promoted financial inclusion in Bangladesh. Their paper also analyzed the challenges confronted by MFS to derive necessary policy options. Siddik *et al.*, (2014) by using innovation diffusion theory and decomposed theory of planned behavior together identified and examined the factors influencing behavioral intention to adopt (or continue to use) of mobile banking in Bangladesh. The results of Structural Equation Modeling (SEM) indicate that perceived financial cost, perceived risk and subjective norm are the most influencing factors that affect people's behavioral intention to adopt (or continue to use) mobile banking. Habib (2016) stated that financial literacy could help reducing the demand-side barriers to financial inclusion. Improved financial literacy can increase awareness about products and services, as well as confidence and ability in using them. In turn, this can help to promote the demand for formal financial products and services. A web based paper named as Financial Inclusion Insight (2016) has stated that 4 in 10 are financially included in Bangladesh. Sherpa (2015) found that Mobile Banking is a new banking service in Nepal and young generations are the main users are of it. RBI'S contribution in Financial Inclusion is no doubt appreciable. But the inclusive growth of India demands the support of the whole financial system and above all the govt., the policy makers, the media and the public will have to do continuous efforts to make the financial inclusion, a great success (Gaba, 2014).

Analysis & Findings

Comparative Analysis of Mobile Financial Services/ Mobile Banking in Bangladesh

Table 1: Comparative Summary Statement of Mobile Financial Services in Bangladesh

Parameters	Amount in June 2017	Amount in July 2017	percent Change (June 2017 to July 2017)
No. of Banks currently providing the Services	17	17	
No. of agents	758,570	772,109	1.78 percent
No. of registered clients in Lac	537.03	544.33	1.36 percent
No. of active accounts in Lac	274.00	283.18	3.35 percent
No. of total transaction	181,932,951	152,314,614	-16.28 percent
Total transaction in taka (in crore BDT)	30,008.53	23,369.14	-22.13 percent
No. of daily average transaction	6,064,432	4,913,375	-18.98 percent
Average daily transaction (in crore BDT)	1,000.28	753.84	-24.64 percent
Inward Remittance	8.31	7.71	-7.22 percent
Cash In transaction	12,336.87	9,502.00	-22.98 percent
Cash Out Transaction	11,427.17	9,106.85	-20.31 percent
P2P transaction	4,374.15	3,615.41	-17.35 percent
Salary Disbursement (B2P)	666.10	198.04	-70.27 percent
Utility Bill Payment (P2B)	232.78	203.36	-12.64 percent
Merchant Payment	-	100.16	0 percent
Government Payment	-	237.49	0 percent
Others	963.14	398.13	-58.66 percent

Source: <https://www.bb.org.bd/fnansys/paymentsys/mfsdata.php>

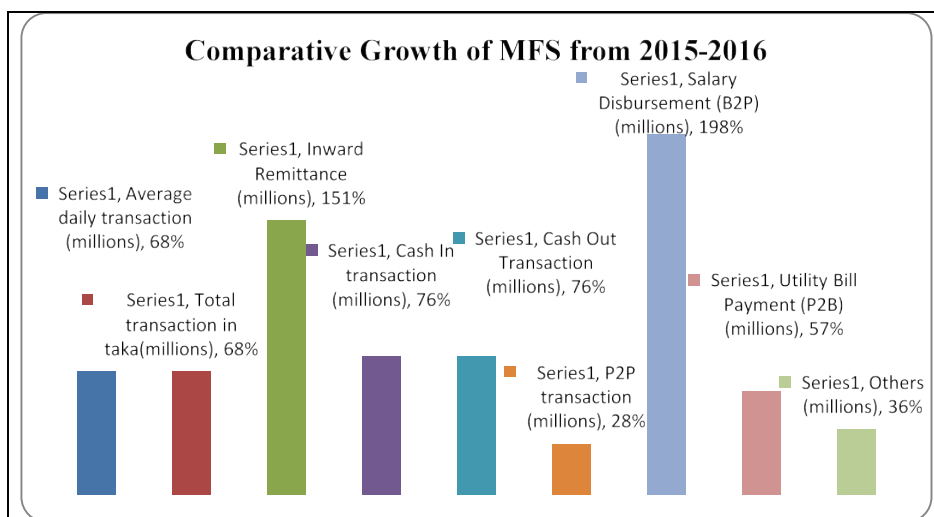
Financial Parameter Analysis

Table 2: Comparative Analysis of Bangladesh for FY2015-FY2016

Parameters	FY2015	FY2016	Growth (percent) (Authors' Calculations)
Average Daily Transaction (Millions)	4603.8	7717.1	68 percent
Total Transaction in Taka(Millions)	138,115.20	231,512.40	68 percent
Inward Remittance (millions)	28.3	70.9	151 percent
Cash In transaction (millions)	57,730.80	101,429.70	76 percent
Cash Out Transaction (millions)	50,499.70	88,662.60	76 percent
P2P transaction (millions)	24,243.50	30,965.70	28 percent
Salary Disbursement (B2P) (millions)	1467.1	4374.3	198 percent
Utility Bill Payment (P2B) (millions)	1456.2	2283.7	57 percent
Others (millions)	2689.5	3667.3	36 percent

Source: <https://www.bb.org.bd/fnansys/paymentsys/mfsdata.php>

Graph: 1



The above table and graph illustrates the comparative financial portrait of mobile banking in Bangladesh from FY2015 to FY2016. At this point, the researchers have occupied only the financial parameters especially transactional items. The researchers compute the growth scenario from FY2015 to FY2016 where the growth of Salary Disbursement (B2P) and Inward Remittance through mobile banking is rapidly positive changing but the other items are moving in slow shape with positive progress. Henceforth, the progress of financial inclusion by these transactional items is positively moving forward in future.

Table 3: Financial Analysis of Mobile Banking of bKash Limited from FY2012-FY2016
(in millions)

Year	Total Revenue	Net Income	Profit Before Tax	Contribution to Exchequer	Total Assets	Float Balance	EBIT DA	EPS	GPR
2012	483.2	78.5	-115.7	127	1512.6	974	90.9	-218	9
2013	3986.9	693.3	-290.5	785.5	5457.7	3999.6	-253.9	-538	11.1
2014	7242.7	1621.1	326	1398.8	9544	6822.6	406.1	446	16.7
2015	10728.1	2472.5	380	2107.5	14499.8	10961.3	482.6	562	18.4
2016	14972.3	3446.7	621.1	3034.1	22008	17288.6	834.9	792	19.2

Source: [https://www.bracbank.com/financialstatement/Annual percent20Report percent202016.pdf](https://www.bracbank.com/financialstatement/Annual%20Report%202016.pdf)

Table 4: Financial Growth Picture of bKash Limited from FY2012-FY2016

Year	Total Revenue	Net Income	Profit Before Tax	Contribution to Exchequer	Total Assets	Float Balance	EBITDA	EPS	GPR
2012-2013	725.1 percent	783.2 percent	151.1 percent	518.5 percent	260.8 percent	310.6 percent	-379.3 percent	146.8 percent	23.3 percent
2013-2014	81.7 percent	133.8 percent	-212.2 percent	78.1 percent	74.9 percent	70.6 percent	-259.9 percent	-182.9 percent	50.5 percent
2014-2015	48.1 percent	52.5 percent	16.6 percent	50.7 percent	51.9 percent	60.7 percent	18.8 percent	26.0 percent	10.2 percent
2015-2016	39.6 percent	39.4 percent	63.4 percent	44.0 percent	51.8 percent	57.7 percent	73.0 percent	40.9 percent	4.3 percent
2012-2016	2999 percent	4291 percent	-637 percent	2289 percent	1355 percent	1675 percent	818 percent	-463 percent	113 percent

Source: Authors' Calculations.

From the above tables, the researchers portray the financial parameters of bKash limited as a leading mobile banking unit of BRAC Bank Limited around Bangladesh. In this connection, among five year analysis from FY2012 to FY2016 the researchers found the financial items; i.e. total revenue, net income, profit before tax, contribution to exchequer, total assets, float balance, EBITDA, EPS and GPR are increasing so rapidly in the very first of operation of mobile banking in FY2012 to FY2013 to progress financial inclusion in Bangladesh. Then, the analysis has also revealed that from FY2013 to FY2016, the growth compared to the first year operation is not highly appreciated but the financial growth of mobile banking is comparatively encouraging in slow shape and the financial growth scenario is clearly optimistic for the financial inclusion through mobile banking.

Operational Parameter Analysis

Table 5: Comparative Analysis of Bangladesh for FY2015-FY2016

Parameters	FY2015	FY2016	Growth (percent) (Authors' Calculations)
No. of Approved Banks	28	24	-14 percent
No. of Banks in the Services	20	18	-10 percent
No. of agents	531,731	604,418	14 percent
No. of registered clients	28.732	3620.4	12501 percent
No. of active accounts	11.923	1332.6	11077 percent
No. of total transaction	97,728,117	124,530,380	27 percent
No. of daily average transaction	3,257,604	4,151,013	27 percent

Source: <https://www.bb.org.bd/fnansys/paymentsys/mfsdata.php>

From the above table of operational aspect of mobile banking in Bangladesh for FY2015 to FY2016, the researchers found that two parameters of operational standpoint precisely 'number of registered clients' and 'number of active accounts' are increasing by above eleven thousand percentage growth which is very encouraging to the development of financial inclusion through mobile banking but other six items are not rapidly growing compared to the early discussed two parameters.

Table 6: Operational Analysis of Mobile Banking of bKash Limited from FY2012-FY2016

Year	Number of Customer	Active Customer	Active Ratio	Agent	Merchant Count	Average Daily Transaction Count	Volume of Transactions (millions)
2012	2175489.00	630892.00	29.00	28605.00	2168.00	52600.00	57.70
2013	10073872.00	3884679.00	38.60	83358.00	4568.00	506032.00	460.30
2014	15686947.00	6524798.00	41.60	109191.00	8989.00	1279477.00	860.80
2015	20741587.00	9099762.00	43.90	116669.00	14879.00	2849156.00	1299.10
2016	26172245.00	11275883.00	43.10	168362.00	37902.00	3598759.00	1805.50

Source: [https://www.bracbank.com/financialstatement/Annual percent20Report percent202016.pdf](https://www.bracbank.com/financialstatement/Annual%20Report%202016.pdf)

Table 7: Operational Growth Picture of bKash Limited from FY2012-FY2016

Year	Number of Customer	Active Customer	Active Ratio	Agent	Merchant Count	Average Daily Transaction Count	Volume of Transactions (millions)
2012-13	363 percent	516 percent	33 percent	191 percent	111 percent	862 percent	698 percent
2013-14	56 percent	68 percent	8 percent	31 percent	97 percent	153 percent	87 percent
2014-15	32 percent	39 percent	6 percent	7 percent	66 percent	123 percent	51 percent
2015-16	26 percent	24 percent	-2 percent	44 percent	155 percent	26 percent	39 percent
2012-16	1103 percent	1687 percent	49 percent	489 percent	1648 percent	6742 percent	3029 percent

Source: Authors' Calculations.

From the above tables, the researchers portray the operational parameters of bKash Limited. In this connection, among five year analysis from FY2012 to FY2016 the researchers found the operating items; i.e. customer, active customer, active ratio, agent, merchant count, average daily transaction count, volume of transactions are increasing so rapidly in the very first of operation of mobile banking to progress financial inclusion in Bangladesh. Then, the analysis has revealed that from FY2013 to FY2016, the growth compared to the first year operation is not highly treasured but the operational growth of mobile banking is reasonably hopeful in slow shape and the operational growth scenario is apparently optimistic for the financial inclusion through mobile banking from FY2012 to FY2016.

Regression Analysis

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.988 ^a	.975	.967	244.21014	2.716

a. Predictors: (Constant), AVTC

b. Dependent Variable: NI

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7110672.433	1	7110672.433	119.229	.002 ^a
	Residual	178915.775	3	59638.592		
	Total	7289588.208	4			

a. Predictors: (Constant), AVTC

b. Dependent Variable: NI

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	208.101	172.241		1.208	.314		
	AVTC	.001	.000	.988	10.919	.002	1.000	1.000

a. Dependent Variable: NI

The above model summary indicates there remains a very positive correlation between independent variable (Average Daily Transaction Count) and dependent variable (Net income). At 1 percent significance level the correlation is 98.8 percent. This model tells that 97.5 percent variation in net income can be explained by average daily transaction. The model is telling that if the independent variable (AVTC) is constant, net income will be 208.11 point. From ANOVA test, it can be remarked that average daily transaction positively affects the overall net income level of bKash and the model is fit for the research. Hence, H1 is accepted.

So, $\text{Net Income} = 208.101 + (.001) \text{AVTC} + e$. Thus, the model infers if AVTC increases by one (01) point, net income will increase by .001 point.

Conclusion & Direction of Future Research

The banking sector has made rapid strides largely because of the advancement of technology, especially mobile technology. Automated teller machines, internet and mobile banking, payment wallets, and other advancements have made significant improvements to consumer experiences and have helped banks widen their reach. In connection with, financial inclusion to every citizen of the country should be the primacy of the Bangladesh Bank. The paper highlights the starring role of mobile banking in achieving the purpose of financial inclusion. The empirical analysis reveals that mobile banking has significant contribution to the achievement of financial inclusion. The paper also finds that average daily transaction has greatly influenced on the net income of the bKash day by day. However, the paper especially considers two parameters (average daily transaction and net income) to see the influence and improvement of financial inclusion in Bangladeshi banks. This paper takes only one mobile banking brand namely bKash where the paper ignores other brands of mobile banking although bKash is the leading mobile banking brand in Bangladesh. Thus, the future researchers may take a note of it and will do a great research further considering other parameters as well as combining other brands. After all, this research paper draws several implications for academicians, business organizations (such as banks) and policy makers who are engaged in the financial inclusion campaign program.

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An Analysis of Banking Behavior of Women in Formal Institutional Environment in Bangladesh

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1. Introduction

It is widely accepted that a country's sustainable development is possible, if women get equal opportunity in all spheres of life. A woman plays the role of housewife, mother, labor or breadwinner and a consumer, which is remarkable from the point of view of an economy. Vohra and Kaur, (2017) rightly revealed that women are holistic thinkers, balanced, intuitive and quality conscious; they adopt a futuristic approach and perform in-depth research prior to investing; they are good savers and at the same time self-controlled. All these characteristics acts as their strengths while undertaking investment decisions. Merging of institutional financing and women might bring remarkable input for financial and economic progression. The banking sector is the backbone of any economy and on the other hand, woman is the backbone of any family, when there is a merger of these two features viz. bank and woman, we expect the synergies to emerge (Chandani *et al.*, 2014).

Business engagement and participation in the formal economic labour force are directly associated with intensity of banking transactions by both men and women. Moreover, control of spending, ownership of wealth and heading household also matter. Women now drive the world economy, and in aggregate, women represent a growth market bigger than China and India combined (Silverstein and Sayre, 2009). More than half a billion women have joined the world's labor force over the past 30 years, and women account for more than 40 percent of workers worldwide, identified in 2011 by the World Bank. Globally, women control 65 percent of consumer discretionary spending, and this is set to rise in the coming years, and in the US, for example, women control 50 percent of private wealth, head one third of households, are the primary breadwinner in 40percent of families and are increasingly more educated than men, as revealed by the Financial Brand (2016). Moreover, women pose certain inherent attributes that may be extremely supportive to the banking behavior. According to the Women's World Banking (2017), women are typically the money managers, financial planners and primary caretaker of children in the household, a role expected and accepted by women worldwide; and women have what we call a savings mentality, the mindset required to put money away for a rainy day.

There are clear gaps between men and women regarding the accessibility and transactions. The World Bank's Global Findex Database 2014 reports gender gap, where globally 58 percent of women own a bank account, compared to 65 percent of men. Regionally, the gender gap is largest in South Asia, where 37 percent of women have an account compared to 55 percent of men (Demirgüç-kunt *et al.*, 2015). Globalization, education, employment and awareness are contributing in enhancing the association of banks with women, and the lives of women and girls around the world have improved dramatically in many respects. In most countries-rich and developing-women are going to school more, living longer, getting better jobs, and acquiring legal rights and protections, the factors that are closely associated with their banking behaviors. In spite of improvements in several fronts, the gaps of men and women in terms of involvement in economic and financing activities, financial decision making, and transactions with banks remain. Especially, in relatively low income and developing economies, restrictions on women's

independent mobility and participation in formal economic sectors curtail their economic potentials (World Bank, 2011).

Bangladesh is not very different from most of low income developing countries where there are lots of scopes of the improvement in banking behavior of women. In the country, women represent a huge, growing and substantially unaddressed market for financial products and services. The situation demands greater policy and market interventions, and for that matter the demand side analysis i.e. women’s banking behaviors must be traced. More specifically, ensuring access, addressing women customers and exploring their potential in banking business is a need of time for sustainable banking and for ensuring greater engagement of women with the formal economy. It is directly related to social and economic development of the country as well. Broadly, the study is an attempt to examine the banking behavior of Bangladeshi women. More specifically, the study identified the following objectives: one, to explore literature on banking behavior of women around the world in formal institutional set up; two, to discuss policy and regulatory initiatives for promoting banking services for women and the associated challenges; and three, to analyze Bangladeshi women’s banking behavior in formal institutional environment.

The study is based on both primary and secondary information. Primary data were gathered from women of different categories in terms of age, education, marital status, gender, occupation both from urban and rural areas based on a survey questionnaire. A total number of 300 samples were covered to draw findings of the study in line with the objectives of which 31 percent were from rural and 69 percent were from urban areas. The sampling distribution and associated attributes are as follows:

Figure 1.1: Sample Distribution in Terms of Geographical Distribution and Marital Status

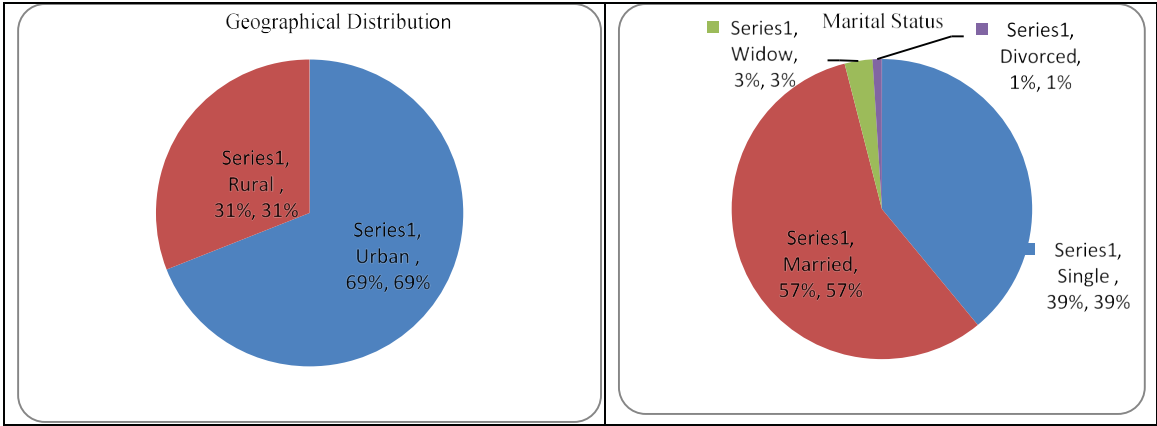


Figure 1.2: Sample Distribution in Terms of Occupation and Formal Education

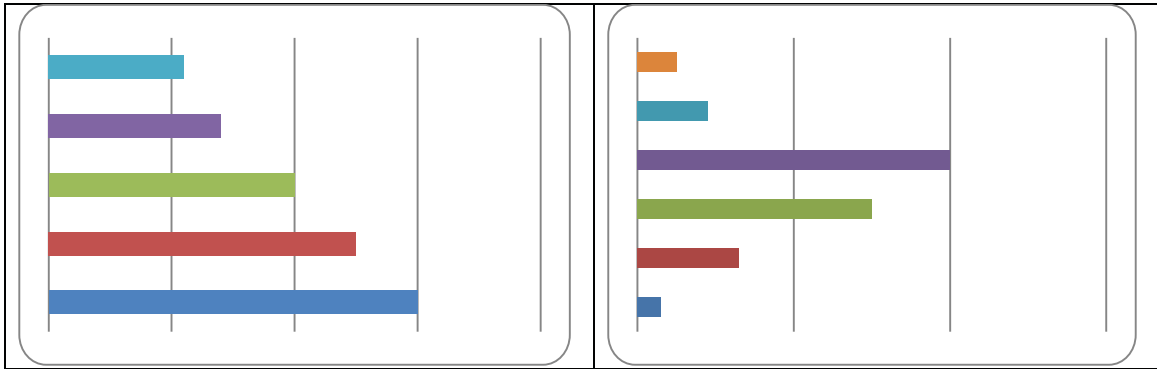
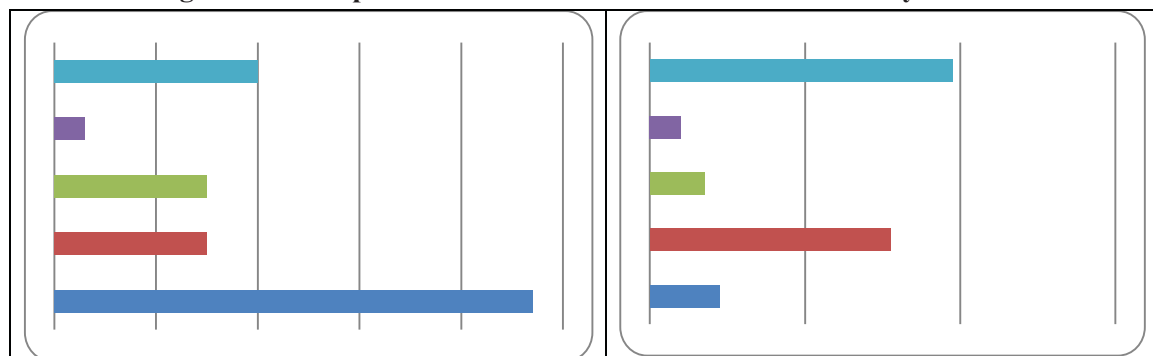


Figure 1.3: Sample Distribution in Terms of Own and Family Income

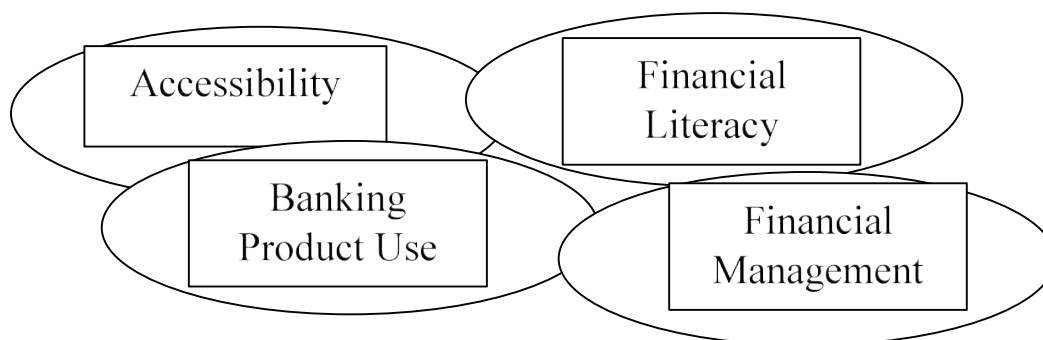


In the paper, the term ‘banking’ is used in narrow sense to mean transactions with the formal banking sector; and the transactions it mainly covers include savings, loans and payment behaviors. The study basically focuses on demand side though some supply related data are also examined. The urban biased survey samples were kept in mind at the time of data interpretation. The paper is organized into five sections. Following the background, objectives and methodological issues in Section-1, Section-2 is about literature review on the banking behavior of women in global context. Section-3 discussed on policy regulatory and supply side issues in regard to the banking of women. The key issues of banking penetration by women and survey observations on banking behavior of women are analyzed in Section-4; and Section-5 came up with certain recommendations as way forward.

2. Banking Accessibility and Behavior of Women in Global Context: Literature Review

Banking behavior is about understanding how clients use banking services of different types to create an engagement with the institutions with satisfaction and benefits. However, from the perspective of banking behavior of women, it is first about ensuring due accessibility and understanding their true needs. In the context of this paper, literature review broadly covers four associated issues of banking behaviors of women in general (Figure-2.1).

Figure 2.1: Key Interrelated Issues Relevant for Women Banking Behavior



2.1 Published data Indicate Notable Exclusion of Women from Formal Banking Services

Of the total, 42 percent women and girls worldwide remain outside the formal financial system, according to the most recent Global Findex database. Globally, 62 percent of adults have an account either at a financial institution or through a mobile money provider. Despite recent progress in financial inclusion rates in general, the gender gap remained significant. While account penetration increased by 13 percentage points among men and women between 2011 and 2014, the gender gap remains a steady 7 percentage points. Among adults living in the poorest 40 percent of households in developing economies, the gender gap is 11 percentage points. The country specific data in the developing world are not very different (Demirgüç-kunt *et al.*, 2015).

2.2 Informal Sector Remained Attractive to a Big Section of Low-Income Women

Savings and borrowing in the informal sectors remained valid for many instances for women in most developing countries. For example, the high percentage of savings in India is primarily on account of the savings made by women, but mainly in the informal sector (Vohra and Kaur, 2017). Zekri (2013) showed, in Tunisia, the share of informal credit was thus higher than that of formal loan and it was mainly of supplier credit from relatives, friends and neighbors. Several factors are responsible for the unattractiveness of the formal banking services. For example, in Pakistan, low-income women have little or no information about banks; and mobility and cultural constraints render them inaccessible. Nevertheless, in countries where women are more familiar with banks, such as Kenya, women's perception is that money saved in a bank is 'dead' and better invested in her small business; or in Colombia, women describe banks as 'eating' money saved in the bank, gobbled up by high fees (Women World Banking, 2013). Country experiences also offer evidences in this regard (Box-2.1 and Box-2.2). It has been observed that banks are less commonly used due to several barriers women are facing including physical and emotional distance from bank branches; low levels of literacy; the perception that banks are only for rich people; and lack of identification. The study also found rural low-income women-known as the 'unbankable'-were not actively targeted by any commercial bank in Malawi. They save informally using a number of tools including village banking, savings groups and saving at home (Women World Banking and UNCDF, 2017).

Box 2.1: Greater Reliance on Informal Sector by Low Income Women-Evidence from Colombia

In research Women's World Banking conducted in Colombia, low-income women were found to be employed in temporary or part-time work, or cobble together income from odd jobs. This income unpredictability was echoed by research in the Dominican Republic where two-thirds of poor women reporting that their income was irregular or mixed, makes it difficult for these women to make financial commitments like savings groups or commitment savings accounts. Even if a non-commitment savings account were available to them, the minimum balance and maintenance fee required by banks exacts enough of a burden for women to keep saving at home despite the risks. It may cost them more to take a bus to the bank than they are depositing. Women are also notoriously time-poor. Time is money, especially to an entrepreneur: time spent away from her business to make a deposit is profits lost. This cost-benefit analysis is the primary reason low-income women keep saving in the informal mechanisms that they use: despite the risk, keeping money hidden at home is so much more convenient (and less costly) than the three mile walk or 30-minute bus ride to the bank.

Source: Women World Banking, 2013.

Box 2.2: Saving and Lending/ Borrowing with Associations in Ghana, Uganda, and Malawi

Village Saving and Loans Associations (VSLAs) encourage financial inclusion and empowerment, the growth of which is spurred on by NGOs, particularly CARE, which pioneered the concept in Niger in 1991. They are estimated to have reached over 12 million people in 70 countries. VSLA members, typically women, pool their money together and make small weekly deposits into a common fund. Members can also request loans from the common fund when necessary, which they pay back with interest, thus allowing the group's deposits to earn a return. After a cycle of 8-12, the group savings are shared proportional to each member's contribution, and often a new cycle begins. The study, conducted in Ghana, Uganda, and Malawi, tracked households for two to three years, with 61 percent of participants completing a full 8-12 month savings cycle. The study found that access to VSLAs increased the number of businesses households operated by 6 percent. These are particularly popular in remote areas, where financial institutions typically have not reached.

Source: IPA, 2017.

Female friendly services are crucial to ensure their satisfaction and ensure access. The problem observed even in developed countries. As observed by PwC (2014), 73 percent US women said they were dissatisfied with the financial services industry-customer trust is at an all-time low and Women want their banks to be more socially responsible. Concerns were also about privacy and security, as more of their personal information and financial life migrates online. Complaints range from a lack of respect, to being given contradictory advice and worse terms than men.

2.3 Key Inherent Attributes Indicate the Potentials of Women as Banks' Clients

While not all women are borrowers, most women are involved in some form of savings. Given women's multiple roles as producer, and community manager, and their generally inferior political, economic, and social status, they have often used the informal financial system to meet credit and savings needs. Studies conducted in Zaire (Cuevas, 1990) emphasize women's greater propensity to save as well as what appears to be an increased ability to save in comparison to men. Women had generally high repayment rates in most projects and repaid their loans on time (Basgall, 1988). A study by Women World Banking (2013) pointed out, poor women are inherent savers. Despite having low or unpredictable incomes, they still manage to save 10 to 15 percent of their incomes. Moreover, women might become more a financial manager once married. UNCDF (2017) found, almost a third of women (32 percent) become more interested in personal finances once married or co-habiting, as a result of the additional responsibilities and debt (mortgages, pension, and children) that couples face. In the context of several countries, women play notable role in financial management. Gatchalian and Julie (2014) found that Malawian women are the household financial managers and savers. Women prioritize how earned money is allocated; not only do they manage jointly-generated income, but they manage their own earning too (UNCDF, 2017). In Kenya about 48 percent of small- and- medium sized businesses are run by women (Mwobobia, 2013). A research by IFC (2017) indicates that overall, women tend to be loyal customers and cautious investors, in addition to having better loan-payback rates.

2.4 Targeted and Well-designed Banking Products are Beneficial for both Banks and Women

There are instances when banks have exploited the situation and benefitted. Women dominate decision-making over day-to-day financial transactions, and that investments and borrowings are usually decided jointly. This makes women with partners both an important market in their own right, and also a strong route for banks to sell higher value products such as mortgages and pensions to couples. With the support from IFC, commercial banks in Nigeria and Uganda increased their lending to female entrepreneurs, also adapting securities requirements to female customers (SIGI, 2012). After designing an offering for female SME-owners, which combined financial products, business education, and support for business growth, Garanti Bank in Turkey found that women entrepreneurs provided a higher profit and used a higher number of the bank's offerings (IFC, 2016a). Under the Women Empowerment Initiative, BLC Bank and IFC's Banking on Women (BOW) program researched gaps in women's access to finance and designed a new Customer Value Proposition (CVP) -a set of products and services targeted toward women. Loans that BLC Bank made to women resulted in lower risk rates and higher returns and growth rates than those made to men decreased. Ultimately, the bank benefitted not just from improved profitability, but also from a diverse labor pool, improved product and service innovation, and greater market growth. BLC Bank's Initiative has become an example of global best practice. BLC Bank engaged with IFC Advisory Services in a far-reaching technical capacity-building program focused on seizing promising business opportunities in the local SME sector and particularly in the nascent female segment, largely unrecognized at that time. The result of the co-operation has been the hugely successful, designed specifically for female clients (IFC, 2017).

The study by IFC (2016b) also found, in order to achieve the status of bank of choice, the Bank realized that it needed to address women and their needs in all of the various economic roles they might have: As part of this effort, the bank adopted gender inclusion as a guiding principle to do business externally was also able to demonstrate that adopting this principle had a positive impact on the Bank's business.

Box 2.3: BLC Bank : Holistic Framework to Empower Women in Lebanon

Given the market opportunity, serving these underserved SMEs, and particularly the women's segment, was a logical decision for the bank and has become an important component of its growth strategy. BLC Bank created its 'We Initiative program' with an exclusive focus on serving women-owned SMEs in Lebanon. The Bank's logic was to focus on the female SME consumer base as part of its concerted effort to look for new ways to grow its business. Soon however, BLC Bank shifted this focus and adopted a much broader and more holistic approach of empowering women across all of its operations: from its consumer base, to its internal workforce and all the way to the bank's top leadership. This shift was gradual and was driven by the Bank's ambition to become the 'Bank of Choice for Women in Lebanon'. BLC Bank serves more than 32,000 women customers, with a loan portfolio of USD188 million and deposits of USD834 million as of the end of 2015. BLC initiatives include New addition in Account type (*Mother-Child account- A fiduciary account that enabled women to open accounts and name their minor children as beneficiaries without having to refer to the child's legal guardian, ordinarily prohibited by Lebanese law*); Connecting women with business knowledge and peer entrepreneurs (*developed several support programs to connect women business owners to suppliers, mentors and experts*); Market research to know need of women (*Generates insights into female borrower's needs and wants and the development of an offering that addresses them are among prerequisites for success*); Making all staff gender-smart through training (*To increase the effectiveness of staff in engaging and serving female customers, comprehensive training programs are designed on Excelling in Selling to Women; Gender Intelligence; and SME and the Women's Market; Gender-specific sales modules have since been integrated into BLC Bank's induction training for all new hires*).

Source: IFC, 2016b.

2.5 Digital Financial Services and Agent based Services are helping to offer greater and better accessibility to Women

Digital financial services brought notable changes in reaching vulnerable and women in Myanmar as observed by UNCDF (2017). Findings on women's usage of various channels for their banking showed they have taken readily to remote channels such as phone and internet, but still value personal contact at the branch. Most women use their bank's website and ATMs more frequently than once a month, and its branches and telephone banking monthly or less. When they visit a bank branch, women do not want to be kept waiting, but they do value human contact. Also observed, Wave Money developed an innovative proposal to use digital gaming to increase financial literacy among women reluctant to engage more with formal financial providers (UNCDF, 2017).

Several other innovations are paying off. For example, establishing in 1943 (RBL Bank of India–Equity Investment and Loan) RBL, one of the smallest banks in India and providing services through digital finance, undertook a transformation in 2010 to cater the underserved through various business verticals, such as agriculture and inclusive finance, directly to farmers and micro entrepreneurs and through wholesale lending to microfinance institutions where the bulk of funding is provided to women. SEWA Bank adopted an ambitious expansion strategy in 1999/2000 through the implementation of doorstep banking. It reduces the transaction cost of commuting to bank branches, on the other hand, loan collection officers can be taken as role models by some of their clients. The main innovation with this expansion strategy is that the bank is closer to people. It does not only reduce the client's transportation cost to zero but it also reduces the burden of discussing your financial needs with people she does not know. It is easier to generate a trust relationship with the loan collection officer (Erica *et al.*, 2016).

¹Wave Money aims to leverage the extremely rapid growth of smart phones and data usage; Wave money designs financial gaming application where people can learn more about financial concepts such as savings, interest payments and insurance while they play.

3. Policy, Regulatory and Supply Side Issues of Banking by Women in Bangladesh

Involvement in economic activities and access to banking services is connected; and women's involvement in the country's formal economic activities remained low as compared to that of the men. Supportive policy environment is crucial for empowerment of women and for ensuring greater financial access of women. In recognition of the importance of women's participation in business for economic development, and in keeping with a constitutional commitment to economic opportunity and inclusion, the Government of Bangladesh has crafted national policies aimed at improving financial inclusion for women. Since the beginning in the early 1970s, the governments have been undertaking initiatives to empower women and to involve and integrate women in the policy and decision making processes. The different national Fifth Five Year Plans has also been integrated into the macro framework and multi-sectoral economy to bring women into the mainstream of economic development and encourage potential women entrepreneurs.

The Constitution provides the necessary direction for women empowerment, but the government's vision, mission and goals to make Bangladesh a middle-income country was first articulated in the Perspective Plan of Bangladesh (2010-2021) that aims to increase women's labor force participation rate from 29 percent in 2010 to 40 percent by 2021 and to improve the effectiveness of financial intermediation by driving private entrepreneurship and actively encouraging business start-ups. In line with the Plan, the National Women Development Policy 2011 emphasizes empowering women economically through MSMEs. The Sixth Five Year Plan (SFYP) emphasizes promoting economic self-reliance for women, and developing economic policies that have a positive impact on women's employment and income in both formal and informal sectors of the economy. The Seventh Five Year Plan (7th FYP) of 2016-2020 extends the SFYP with a framework for women's empowerment and gender equality. The government has established a foundation to develop the SME sector in Bangladesh and launched programs for women to develop their business skills. In association with Bangladesh Bank (BB), the SME Foundation has been working to bring women entrepreneurs into the mainstream through capacity building initiatives in women's chambers of commerce and trade bodies, encouraging bankers to finance women entrepreneurs, organizing women entrepreneurship conferences, SME product fairs for women entrepreneurs, and other skill-building initiatives. The new Industrial Policy 2016 included several specific policies for the development of women-led enterprises by providing financial incentives to women entrepreneurs in the MSME sector so they can establish themselves as successful business owners. It also targeted system of women-friendly banking services under the leadership of BB in which at least 10 percent of all credit to Micro, Small and Medium Enterprises (MSMEs) would be allocated for women-led MSMEs.

For mainstreaming women in economic activities, BB has taken a number of policy initiatives so as to ensure women entrepreneurs to have financial facilities on simple terms and conditions. Every Bank mandatorily has to have a separate 'Women Entrepreneur's Dedicated Desk'. Banks are instructed to employ competent officials in that dedicated desk and to train up the said officials. Banks may sanction loan of BDT 2.5 million (USD 31,250) to women entrepreneurs without collateral but against personal guarantee under refinance facilities by BB if the borrower is a women entrepreneur or if 51 percent shareholder of the borrowing enterprise are women. The SME department is operating the woman entrepreneurship scheme, through which women's empowerment and their participation in business are being ensured. To help women in increasing their contribution to industrialization, BB is detecting the hindrances on the way and it has been made mandatory that at least 15 percent of the credit will have to be disbursed among women entrepreneurs. Instructions are given to banks to charge reduced interest rate to women entrepreneurs. To accelerate women's entrepreneurship in Bangladesh, BB has opened a Women Entrepreneurs Development Unit in its head office and branch offices. Banks and financial institutions have been instructed to provide credit to new women entrepreneurs in the cottage, micro and small and medium enterprise sectors. Every branch has been advised to identify at least 3 prospective women entrepreneurs who have not yet taken out any formal loans. Banks and financial institutions are required to provide necessary training to the selected entrepreneurs and

financial services should be extended to at least 1 each year (BB, 2017). Roles of a number of international financial institutions and donor agencies in formulating policies and enforcing strategies to promote women's access to finance and the relevant issues in the country are well recognized.

It cannot be denied that positive changes have taken place in response to the policy initiatives of the BB. Dedicated desks for women entrepreneurs have been set up at almost all banks in Bangladesh (state-owned and private), to ensure that women can get loans more easily, and on better terms. Though the initiatives are extremely limited, several banks have specially designed credit programs for women. Some of these are available in certain areas. Bangladesh Bank has already introduced several schemes and programs to flourish and expand MSME sector with prioritize women entrepreneurs. With the intervention of BB, the amount of financing for women entrepreneurs and the number of borrowers increased rapidly. In 2010, banks and financial institutions in Bangladesh together financed USD 231 million for 13,233 women-led MSMEs. In 2015, this amount rose to USD 543 million and the number of women-led cottage, micro, small and medium enterprises jumped to 188,233. This indicates that the policy initiatives of BB have had a substantial impact on women's financial inclusion through MSME finance (AFI, 2017). In the context of Bangladesh, several schemes have been introduced to address women entrepreneurs. Practically, upper and middle income classes of women are the beneficiary of these schemes; low income classes need much more attention (Shah and Gupta, 2014).

This indicates that the policy initiatives of BB have had a substantial impact on women's financial inclusion through MSME finance. In 2015, the number of MFI clients in Bangladesh stood at 26.21 million, 23.78 million of whom were women. That same year, 22.36 million people in Bangladesh took out loans from MFIs, and 20.3 million were women. In short, more than 90 percent of MFI clients and borrowers are female and half are MSME clients (AFI, 2017). The data indicate, a success story for women's financial inclusion, where most of the clients served by MFIs are women. And in terms of access to formal financial services, 35 percent of women in Bangladesh hold a bank account, which is above the regional average for South Asia. However, banks' reach to women remained limited yet. Digital finance by banks could be an option, however, women as digital finance user in Bangladesh has not been very encouraging. Despite being identified as a 'mobile money sprinter' by the GSMA, only 18 percent of digital finance users in Bangladesh are women, with even fewer holding registered accounts (CGAP, 2015). Interestingly, a high proportion of women's loans were controlled by male members of the household. In regard to bank financing, there are allegations that in reality banks have not been very interested to finance women. In most cases, they provide loans to other companies or persons who are not in that category. There are also allegations that a women entrepreneur has to go through a lengthy process to obtain a loan from a bank. She has to fill up a number of papers and documents to get a loan, which is time-consuming. An IFC (2012) study on financial access of RMG women workers came up with some barriers. According to the study, the sector is growing at 16 percent annually, but workers cannot leverage this effectively, as they lack access to suitable financial services and face security risks due to receiving wages in cash.

4. Penetration and Banking Behavior of Women in Bangladesh- Survey on Demand Side

Equal opportunity for both men and women to participate in political, economic, cultural and social activities are guaranteed in the constitution, but inequality is palpable on various dimensions (BTI, 2016). The country report also observed, the literacy rate among females is lower; female participation in the labor force is increasing but remained lower; and the wage differential between genders is also striking. The number of poor women is higher than their male counterparts and the extremely poor are largely women. With women representing half the labor force aged 15–49 in Bangladesh, accelerating entrepreneurship and access to finance is pivotal to socio-economic development in the country. This low participation rate is the result of several economic and cultural barriers, but the greatest challenge facing women entrepreneurs in Bangladesh is access to finance (Jahed *et al.*, 2011). Today, more women in Bangladesh launch their own businesses; and

they are frequently unable to access the credit facilities needed to expand. There are evidences that the lack of awareness, lack of ownership of land and lack of appropriate skills and institutional barriers discourage women from accessing bank loans (Shah *et al.*, 2012). In regard to the banking behavior of women, the survey observations on product familiarity and understanding, use and operation of banking products, decision making in financial management are crucial indicators.

Table 4.1: Familiarity and Understanding of Banking Products amongst Women

Name of the Product	Product Familiarity	Product Understanding
Current Account	50%	25%
Savings Account	72%	50%
Fixed Deposits	90%	70%
Consumer Loan	70%	60%
SME Loan	80%	30%
Industrial Loan	60%	30%
Locker Services	70%	65%
Letter of Credit	40%	5%
Interest Rate	90%	80%
ATM	50%	40%
Internet Banking	40%	20%
Mobile Banking	90%	70%
Agent Banking	40%	5%

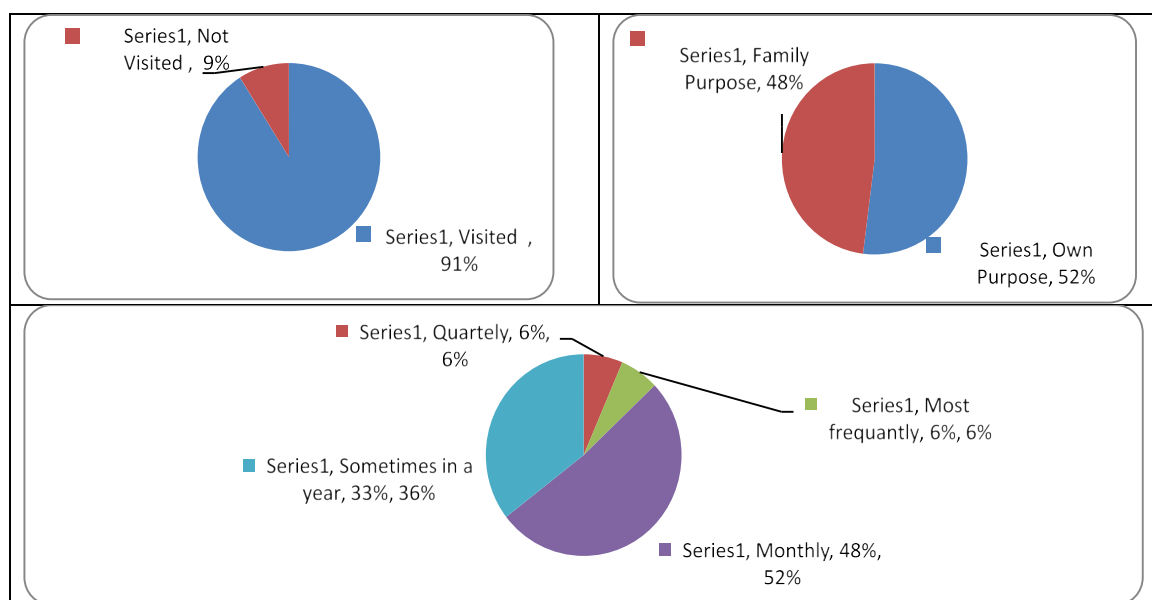
Note: Multiple responses

Source: Survey data

As the survey data (Table-4.2) show, though a good number of women are familiar or heard about several banking products, but their understanding about most of these products are relatively limited. Women are particularly familiar about interest rate, fixed deposit, and mobile banking and have relatively better understanding as compared to other products. Women's low understanding on letter of credit might reflect their less association with global trading and businesses; and agent banking relatively a recent initiation in the country, and generally people mix-up mobile banking with agent banking, as observed in the survey.

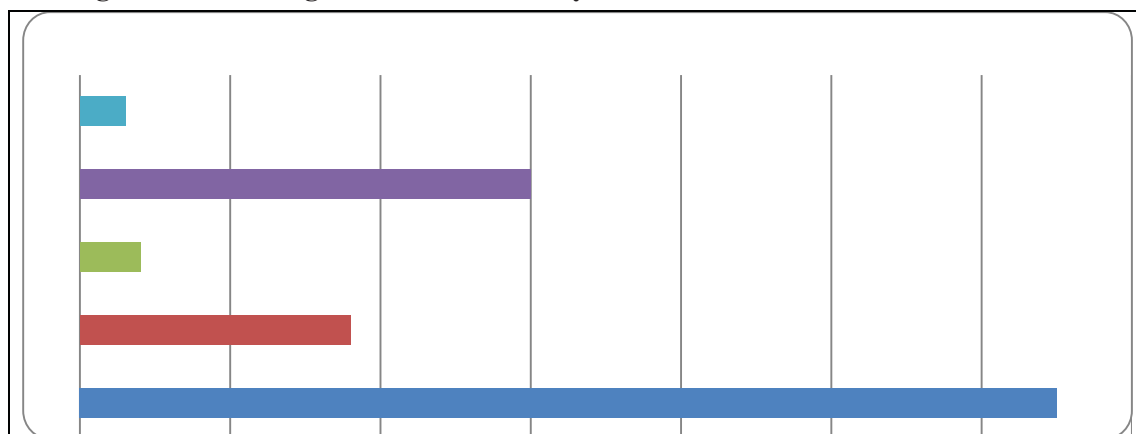
According to the survey observation, 91 percent women visited bank and only 9 percent never visited (Figure-4.2), which is quite impressive in terms of familiarity of women with banking activities. Of these, most visited bank for their own purpose; a considerably high percentage of women (48%) also visited (Figure-4.2) for family reasons. Of the total 64 percent visit banks every month or at lower intervals.

Figure 4.2: Bank branches Visited by Women, the Purpose and Frequency



Source: Survey Data

Figure 4.3: Banking Services Received by the Women from Format Sector Banks



Source: Survey Data

Table 4.2: Distribution of Urban and Rural Woman those have Aailed Loan Facilities

	Loan Aailed from any sources	Loan Aailed from Banks
URBAN	50%	14%
RURAL	100%	2%

Source: Survey Data

Table-4.2 indicates relatively greater access of rural women to loans from sources other than the banks. In terms of access to loans, as a whole the positions of women of the rural areas appear to be better than that of the urban areas. It probably reflects the lending activity of MFIs that are mostly in operation in the rural areas targeting mainly women.

In the context of Bangladesh, in many instances, women's reliance on husband and other family members on performing outer activities (other than household work) are appreciated. In such a society, it is good to have information that 72 percent women generally operate their own accounts.

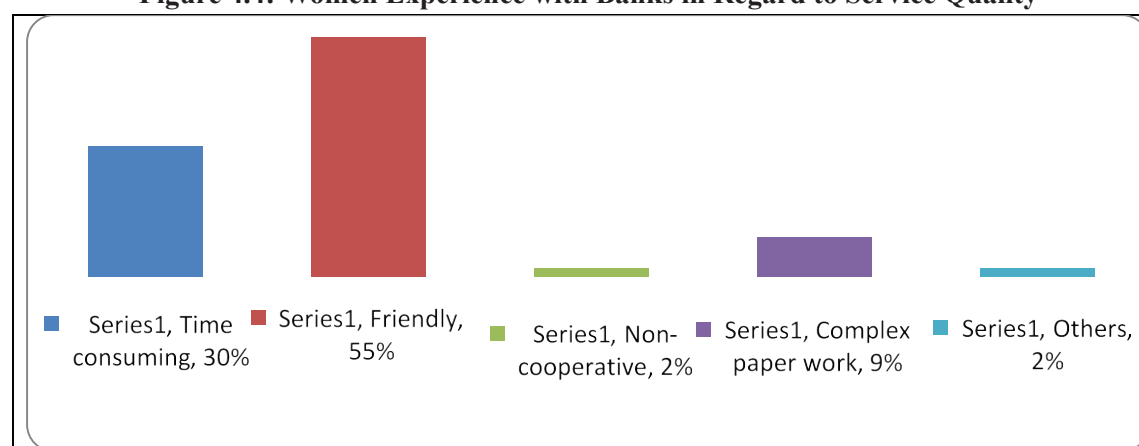
It has been observed from the survey that around 40 percent women operate their accounts through their husbands and/or other family members (Table-4.3).

Table-4.3 Accounts Operated by the Women Bank Clients

Accounts Operated	Number of Women in Percentage
Self	72.0
Husband	40.0
Family Members	11
Others	3

Source: Survey data

Figure 4.4: Women Experience with Banks in Regard to Service Quality

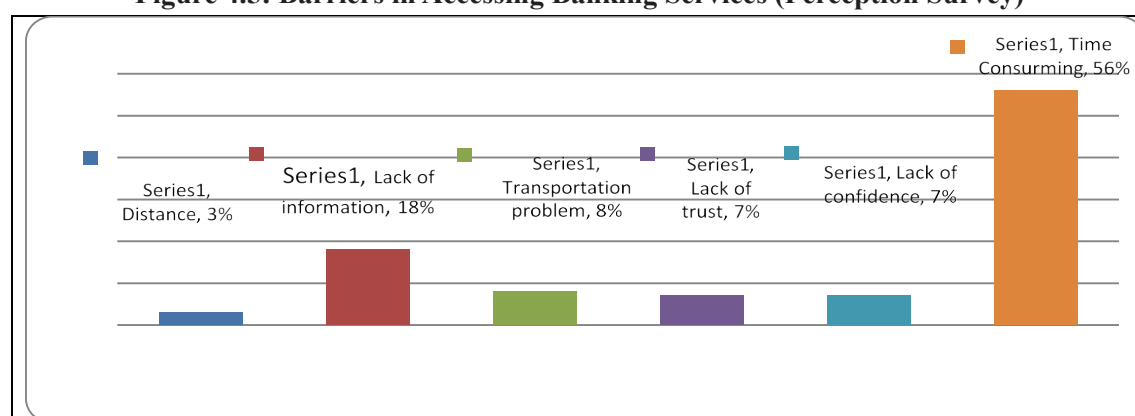


Source: Survey Data

In regard to the experience of the women visitors in banks (Figure-4.4), a significant number of women found banking environment quite friendly; however, 30 percent have experiences of struggling with time constraint at banks. Of the visitors 9 percent (the borrowers) experienced complex paper work at banks (Figure-4.4).

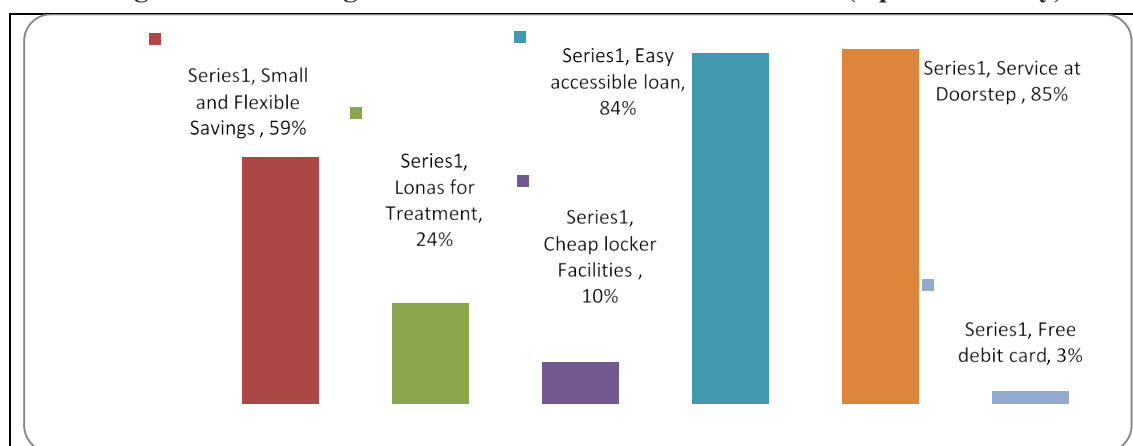
In response to the queries on barriers to access banking services, 'time problem' has been identified by 56 percent women that are mainly connected with their household work-pressure especially housewives. Among others barriers lack of information among women is also one of the barriers for less access of banking products.

Figure 4.5: Barriers in Accessing Banking Services (Perception Survey)



Source: Survey Data

Figure 4.6: Banking Services Want to Avail in Near Future (Opinion Survey)



Source: Survey Data

‘Service at doorstep’ and ‘easy accessible loans’ are key products/ services expected from the banks, as observed in the survey (figure-4.6). Though a considerable number of women are availing deposit services, they expect these to be more flexible in terms of size and duration. ‘Uninterrupted online banking with easy money transfer’, ‘easy mobile banking app’ came up as most wanted products on behalf of the women customers. The university students asked for interest free educational loan, online university fee payment services for specific courses such as MBA and others asked for more spacious banks and facility of refreshments like tea in banks.

To ensure greater access over 50 percent women feel that they need special treatment and good, co-operative, patient behavior from bankers, very helpful customer care services, along with separate queue, only for women branch with women bank employees, less time consuming services means quick service specially designed banking products, as observed in the survey.

5. Way Forward to Improve Banking Behavior of Women in the Country

There are evidences that relevant developments in Bangladesh are mainly policy driven and that women are generally not being targeted effectively by the banks. A first important step is for providers and other stakeholders to understand women’s needs, preferences and usages of current products, services and channels. Women financial needs vary, more widely over time and a failure to address the women specific products and services means a bank risks missing out on a major opportunity. What is needed is an ability to deliver carefully-crafted, women orientated products using effective channels and platforms. Modern ICT can act as a tool to develop a platform which helps us to extend the financial services in remote areas and at the doorstep of women.

Considering the social, family and time constraint of women, it is crucial to rely heavily on digital banking platform. While smart phone penetration is still relatively low in Bangladesh, it is gaining ground; and smart phones might provide an important opportunity to improve user interfaces and address literacy barriers across all clients. For effective outcome, banking sector needs measures like regular collection of systematic feedback from its female customers; online and app-based surveys; special attention to reach women who tend to be more time and mobility constrained due to their dual responsibility at work and in their homes.

It is evident from the facts and figures that access to finance for women-led micro and small enterprises are increasing steadily over time, and though slowly more and more of these enterprises are coming under the purview of formal financial institutions. This indicates that regulatory initiatives on MSME finance are having positive impact on expanding women’s access to finance, however still there are challenges in expanding access to finance for women owned micro and

small enterprises. Women should be treated with special attention and skilled employees of banks, considering their constraints related to collateral, ownership of land, financial literacy and other social and family limitations; and not as the shadow of a man (her husband/ father/ family member) in the process of offering credit facilities.

Considering relatively greater experiences of addressing women in their systems, the success stories of MFIs of Bangladesh should be considered in designing banking products targeting women in the country. In certain circumstances, linkage with MFIs and agent based services by banks might offer better outcome to address the need of the women. Well-designed financing products channeled and delivered through agents or MFIs in digital platform might be useful in addressing true needs of women in the country. In the process, alongside strong support from government relevant departments and donor agencies, strong coordination would be needed between the financial regulators of Bangladesh-Bangladesh Bank and the MRA.

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Digital Financial Services (DFS) as a tool of Financial Inclusion to build Consumer Demand

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1. Introduction

Financial inclusion is considered an important means for alleviating poverty and promoting a country's broader economic development; hence, it is now receiving greater attention from international financial regulators. This heightened importance of financial inclusion for economic development is resulting in a change in the role of financial regulators. Historically, banks have innovated in pursuit of higher profits and the role of a financial regulator has been to maintain the safety and soundness of the financial system. However, promoting financial inclusion requires promoting the provision of financial services by banks and new players to customers who may offer little in the way of profitable opportunities. In this environment, market forces alone cannot be expected to deliver the products to match end users' needs and wants. In promoting financial inclusion, financial regulators must work to minimize the gap between what market forces provide and what end users need, can afford and want.

This responsibility to promote financial inclusion is a relatively new and different role for financial regulators and requires a change of their mindset. To assist in navigating through this new regulatory frontier this article recommends that, in promoting financial inclusion, financial regulators must sharpen their focus on understanding and building consumer demand for DFS. Regulators are already focused on designing enabling regulatory frameworks to accommodate new players and innovative DFS; largely because DFS have been held out as key innovative solutions to improve financial inclusion. However, building consumer demand is also critical to the success and sustainability of DFS ecosystems; end users' needs and desires must be a key focus. Without focusing on consumer demand, DFS will suffer from limited uptake and we may be left with sophisticated frameworks for overseeing and regulating DFS but little DFS to regulate.

Of course, the focus on consumer demand is merely one aspect of a successful DFS ecosystem. Providers will also need to design highly efficient DFS systems with such low transaction costs that business can be done profitably. However, exploring all the factors that drive the success of DFS ecosystems is beyond the scope of this article. Instead, we explain the importance of financial regulators understanding and building consumer demand, so as to encourage sustainable DFS ecosystems that can improve financial inclusion. In understanding and building consumer demand, financial regulators will be able to intelligently direct industry efforts toward encouraging sustainable DFS ecosystems that improve financial inclusion. In particular, we recommend regulators turn their attention to partnerships in the DFS space as a way to build consumer demand; that is, partnerships between payments providers, banks, Microfinance Institutions (MFIs) and Mobile Network Operators (MNOs). Such partnerships are fast emerging as a principal way to build consumer demand in the DFS space and a path toward successful sustainable DFS ecosystems. Financial regulators must be ready to identify and assess the risks from prospective partnerships and adjust regulatory frameworks, so that they are open to the benefits of partnerships and responsive to the risks. It will be critical to ensure financial safety and stability is maintained alongside greater financial inclusion. We highlight two areas for regulators to focus on in their

approach toward the identification, assessment and mitigation of risks arising from partnerships in DFS:

- A. Collaboration risks.
- B. Consumer risks that arise due to a greater range of product offerings available via a mobile phone.

Bangladesh has long been considered a role model for financial inclusion, first with the emergence of Grameen Bank in the late 1970s, and then with the subsequent proliferation and prominence of microfinance institutions such as BRAC, especially in rural areas. In spite of these developments, access to basic financial services remains a challenge for many, especially women, marginal farmers, informal sector enterprises, and other socially excluded groups.

According to the World Bank, only 39.6 percent of the adult populations have an account at formal financial institution. When quasi-formal and informal financial services are taken into account, the proportion of adults with access to financial services rises significantly to 76.8 percent. Nevertheless, enhancing the reach of formal financial services has become a priority for the Government of Bangladesh. In particular, the Central Bank, Bangladesh Bank, has in recent years taken extensive measures to promote the development of a more inclusive financial system in Bangladesh.

2. Characteristics of the Financial Services Market

The financial services sector in Bangladesh is dominated by commercial banks in terms of assets and liabilities. According to the most recent available data, in terms of reach, microfinance institutions have bigger networks, with an estimated 27 million microfinance clients as of June 2017. However, both of these traditional financial service providers have been overtaken by mobile financial services in terms of potential customer base as well as network reach. Agent banking, which has just recently started in Bangladesh, is also expected to have significant reach in the future as well. The possibilities to innovate promote and deliver new products and services through these two channels to reach the mass market are significant.

Table: 1 Financial Service Coverage

Providers	Number of Service Providers	Number of Touch Points
Banks	57	9000+ branches
Non-Bank Financial Institutions	32	183+ branches
Micro Finance Institutions	742	18,000+ branches
Mobile Financial Services	18	561,000+ agents*
Agent Banking	4	64+ agents

Source: Bangladesh Bank 2016, Micro Credit Regulatory Authority, 2016

*Does not account for double counting

A background study commissioned for the General Economics Division of the Planning Commission in Bangladesh for the country's 7th Five Year Plan (2016-20) entitled, "Improving Access of the Poor to Financial Services," noted that despite the substantial expansion of bank branches and an increase in the membership of MFIs and other financial institutions, around 25 percent of the country's adult population still remains financially excluded.

The study added that in terms of access to credit from the banking system, the state of financial inclusion is low. For example, for farmers who mostly live in the rural areas, access to banking services is significantly low relative to their contribution to the GDP. A substantial share of households, especially in rural areas, still remain outside the coverage area of the formal banking system and are therefore unable to access mainstream financial products. Government regulation

mandating that banks open at least one in five branches in rural areas to encourage rural banking has resulted in 57 percent of bank branches in rural areas by 2016. Despite those gains, the share of rural bank branches in terms of total deposits and advances were only 17 percent and 12 percent, respectively, which indicates very low exposure of rural people to the formal banking system.

The study noted that increasing access to financial services for Bangladeshis, especially for the rural poor, is critical to enabling them to adopt new and more productive income earning opportunities and technologies. This access will help counter personal financial crises and unforeseen risks, and increase their chances of moving out of poverty. In this respect, the study recommended that the government's strategy should aim to capitalize on rapid advances in mobile communications and digital payment systems to connect poor households to affordable and reliable financial services. The study recommended adopting an effective strategy in the 7th Five Year Plan to help poor households increase their access to effective digital financial services for savings, payments, credit, and insurance-especially at critical moments. It noted that for the poor, access to financial services would support them to: successfully adopt new farming technologies, invest in new business opportunities, or find new and more productive jobs. At the same time, access to digital financial services would prevent a large number of people from falling back into poverty or into deeper poverty due to health problems, financial setbacks, and other shocks.

3. Objectives of the Study

Due to globalization and technological advancement especially in the developed countries, a trend has been observing that a good number of big commercial banks and non-bank financial institutions are reducing their number of branches across the country as well as globally. This is not due to their high overhead costs or losing business or market share, rather, they assessed globally that the physical existence of branch becomes less significant because of either online banking or any branch banking or for correspondent banking. Even a concept of 'Virtual Banking' had already emerged at the beginning of this century. It was already proved financially that reducing physical branches did not only decrease their overhead costs but at the same time, it had also increase their business, i.e. revenues. From this thing keeping in our mind, the primary goal of this study is to investigate how DFS as a tool of financial inclusion could be made more popular and convenient to both the banked and unbanked people of Bangladesh. To establish this objective, we will examine all the possible micro and macro-economic variables that has an influence on DFS and building consumer demand. A review of existing regulations will also be examined in this regard.

4. Review of Literature

People become more and more familiar with digital technologies. Especially with the existence of digital natives, i.e. the future customers, this trend will continue. Digital natives is a term that describes people that are born after 1980 and show an affinity towards technology (Prensky, 2001). "With the growing recognition of the customer's role in service creation and delivery, there is an increased impetus on building customer centric organizations" (Setia, Venkatesh, & Joglekar, 2013, pp. 565). It becomes inevitable for financial service providers to co-create value with customers to respond to the change in customer behaviour and needs, which is topic in the customer relationship category.

In a survey based study among CIO/ IS executives in the US, Tallon (2010) finds support for the banks' desire to become more intimate with their customers i.e. the strategic move from operational excellence to customer intimacy. The author differentiates between small and large banks and finds that large banks' IT focuses more on transaction efficiency and costs, which obviously is at odds with a more service-oriented strategy. Therefore, "for customer intimacy to succeed, the primary locus of alignment needs to move to other parts of the value chain" (Tallon, 2010, pp. 243). One way to become more customer-centric is the use of web 2.0 technologies. Nüesch, Puschmann and Alt (2012) develop a framework for assessing the web 2.0 adoption of banks. Their findings indicate that only a few companies use web 2.0 to support the interaction with their customers. Pole and Puschmann (2011) develop a classification framework for web 2.0 applications in private

banking. The framework dimensions are application fields, potentials, relevance and risks. All in all, their findings are similar to Nüesch, Puschmann and Alt (2012). Banks are starting to explore the potentials of web 2.0 technologies in customer-related processes in order to become more customer intimate. But most banks only provide basic services such as instant messaging, wikis, blogs and rating applications. This means fewer risk but also fewer business potentials e.g. Client acquisitions, bank-client relationship, loyalty and cross selling products. Moewes, Puschmann and Alt (2011) call the trend to use web 2.0 technologies the “interactive point of banking”.

Further trends towards an increased customer centricity are the mobile point of banking, configurative point of banking, integrated point of banking, multifunctional point of banking and open point of banking. Mobile point of banking refers to the increased number of mobile devices used by the customers. The customer does not only want to do banking anytime but also anywhere. The configurative point of banking allows customers to customize their banking products. Integral point of banking is the increased transparency for the customer. That means the same information is provided for the customer and for the advisor. Multifunctional point of banking can be understood as the trends towards multifunctional devices i.e. Paying with mobile phones. In a survey based study about banking, Sachse, Alt and Puschmann (2012) find that the electronic channels gain in significance. At the same time, services like advisory are still important for the customers. Obviously, this is an additional challenge for banks. They are expected to provide their services electronically but, at the same time, customers want to choose from different channels. Moreover, the results show that a web 2.0 presence is expected. However, customers are not willing to use this channel for banking activities like money transfer. The effect of IT-based service channels on firm performance is analyzed by Banker *et al.*, (2009). The results show that internet banking adoption increases cost efficiency but not revenue efficiency. The gain is not able to compensate for the loss, which leads to an overall negative effect. In contrast, the traditional branch-based channel leads to higher operating costs but, at the same time, higher revenues are documented. The revenues are able to cover the extra costs, resulting in a positive overall effect. The same applies for IT investments in ATM networks. Moreover, the traditional channel and Internet banking channel are both positively associated with market share in the loans and deposits business. Further research confirms these findings and shows that Internet banking is important for a long-term competitive advantage. Therefore, due to channel complementarity and customer centricity, banks should consider these insight in their channel strategy (Banker *et al.*, 2010). Setia, Venkatesh and Joglekar (2013) examine the impact of digital technologies on the customer service performance. They study the local Indian banking sector and introduce a theory to “understand the effectiveness of a customer-side digital business strategy focused on localized dynamics” (Setia, Venkatesh & Joglekar, 2013, pp. 565). The authors present two constructs, customer orientation capability and customer response capability that companies need to consider in order to respond to the customers’ needs. Customer orientation capability is the ability to monitor the customers’ needs and enable a business strategy that focuses on the customers’ needs (Slater & Narver, 1994). Customer response capability is the ability to respond efficiently and quickly to the customers’ needs (Jayachandran, Hewett, & Kaufman 2004). Both capabilities can be subsumed under customer service capabilities. They are hypothesized to influence the overall customer service performance that means the customers’ evaluation of the services offered (Fornell *et al.*, 1996). Information quality as a part of digital design is hypothesized to have an impact on both constructs. Process sophistication is expected to act as a mediator. The results show that information quality has an impact on the customer service capabilities. Additionally, the more sophisticated the customer service process are, the stronger is the relationship between information quality and customer service capabilities. The findings indicate that there is a direct impact of digital technologies on the customer service performance.

5. Description of the Business Model for Digital Financial Services

In the space of three years, the Bangladesh Post Office has entered into three separate partnerships to offer innovative mobile and electronic financial services across the postal network. The case of Bangladesh indicates that postal operators are able to progress along the “ladder” of postal financial

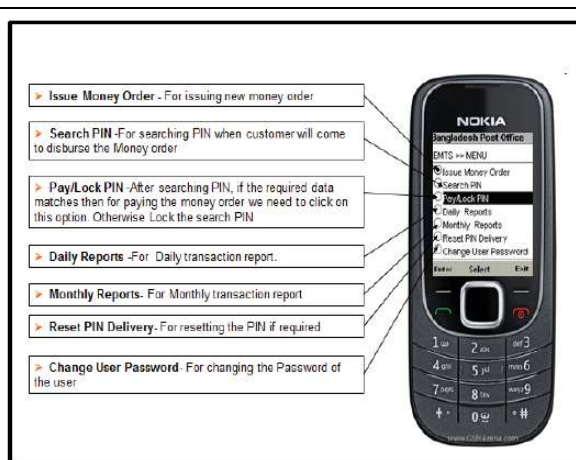
services, from traditional money order services to sophisticated digital financial services, even where there are gaps in internet and mobile technologies. The models adopted to provide each service are discussed in turn below.

5.1 Mobile Money Order Service

In March 2010, the Post Office launched a new Electronic Money Transfer Service (EMTS), popularly known as the Mobile Money Order Service, to supplement the traditional paper-based money order service. The new service, provided in partnership with Banglalink Mobile Company, employs both electronic and mobile technologies to provide instant domestic and international money transfers. Presently, the service is available in 2,750 postal outlets; covering all district level and upazilla (sub-district) post offices, as well as rural postal outlets. The Post Office maintains a central server, and a call center to monitor and support the service, and all EMTS locations have been equipped with a computer, internet connectivity and/or mobile phones, which are used to issue the money order, and send the payment to the central server.

To access the service, a customer must go to a participating postal outlet, and request a money order by filling out the relevant form with his personal details and mobile phone number, as well as the details and mobile phone number of the recipient. Once the cash is handed over, postal staff will issue the money order using either a web interface where there is internet connectivity, or a specially modified mobile phone.

The data is then transmitted to the central server, which automatically generates a unique Personal Identification Number (PIN), and sends a short message transfer (SMS) to the sender's mobile phone with the PIN code. The sender must then pass on the code to the recipient, who must submit the information at a participating postal outlet in order to cash out the transfer. Once the transfer has been cashed out, a final notification SMS is sent to



The sender. Clients are charged Tk. 27 (~ US\$ 0.35)³³ for the first Tk. 1,000 transferred and Tk. 10 for every subsequent Tk.100. The maximum amount that can be sent via mobile money order is currently Tk. 50,000.³⁴ The service is available on all mobile networks, and does not require senders or recipients to have a Banglalink phone number. To date, the Post has issued over 11 million money orders, worth Tk. 54.7 million (~ US\$ 7 million).

In terms of the partnership model adopted to provide the service, the agreement with Banglalink has been arranged on a revenue-sharing basis.³⁶ Banglalink financed the acquisition of mobile phones, worth Tk. 7 million; and the Post pays Banglalink only Tk.7 for each successful money transfers. In addition, Banglalink provided network connectivity in participating postal outlets, while the Post developed the software used to offer the service, and provides postal staff to run the service ³⁷ The Post is also responsible for training postal officials and staff to manage and operate the service. Plans are currently underway to expand the service to the remaining outlets on the postal network.

5.2 Postal Cash Card

Also in 2010, Bangladesh Post introduced the Postal Cash Card, a prepaid card that allows customers to deposit, withdraw and transfer money (Card to Card), make purchases and perform utility bill payments, as well as receive social benefits and allowances from the Government. For instance, a pilot project under the Social Safety Net Programme is currently being implemented, in which over 14,000 very poor families have received conditional cash transfers through the Postal Cash Card.

The Card service is currently offered in 1,332 post offices, and new ATM booths have been launched in the capital city, Dhaka. POS devices have been distributed in post offices, outlets and retail merchants, and there are plans to set up 1,200 ATM booths by July 2015. In rural and remote areas, the Post employs postmen equipped with POS devices to offer door-to-door cash collection and cash-delivery services to Postal Cash Card-holders. Already, the Card has a customer base of 52,000 card-holders, and services have been accessed at 598 post offices across the country.

The Card therefore provides a convenient and low-cost means of accessing financial services. Presently, it costs Tk. 45 (~US\$ 0.60) to open an account and receive a standardized card. A card with the personal details and picture of the account holder can be obtained for Tk. 110 (~US\$ 1.40).



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Customers are only charged for withdrawals, at a rate of 1 percent of the withdrawn amount. The card is provided and operated in collaboration with Information Technology Consultants Limited (ITCL), and the state-owned bank, Sonali Bank. The card is hosted on ITCL's "Q-Cash" network, one of the largest networks of ATMs and POS devices in Bangladesh. This network is comprised of 26 member banks, and several other financial institutions, Government agencies, and retailers.⁴² This means that the card is not provided in a closed loop system of the Post, card-holders are therefore able to access their funds on ATMs and POS devices operated by other institutions participating in the "Q-Cash" interbank switch, in addition to those provided by Bangladesh Post and Sonali Bank.

The Postal Cash Card ATMs are provided in partnership with Sonali Bank. As per the partnership agreement with Sonali Bank, ATM booths are to be co-branded with the bank, and the bank also provides cash-management for the ATMs. The Post Office provides real estate and space for the ATM booths. Furthermore, cash balances on Postal Cash Card accounts are ring-fenced within the Post, but are remitted to Sonali Bank on a monthly basis.

5.3 Mobile Banking Service

The service most recently launched by Bangladesh Post is the Mobile Banking Service, also known as "Post e-Pay." The Post Office signed an agreement with Bangla Phone Limited, along with its sister firm, Commlink Infotech Limited, in September 2012. The service is being implemented on a turnkey basis, and at no cost to Bangladesh Post. On the contrary, a revenue-sharing arrangement, which is very favorable to the Post, has also been agreed, under a "design-build-finance-operate" business partnership Model-43. Specifically, the project has been estimated to cost Tk. 300 crore

(~ US\$ 39 million), and revenues are to be shared under a ratio of 42:58 percent in the first three years (42%) for the Post, 58 percent for Bangla Phone), and 56:44 thereafter. The Mobile Banking Service essentially acts as a mobile wallet, and allows customers to store money, as well as make P2P transfers without going to a postal outlet. Mobile account holders can also make bill payments, receive salaries and government disbursements, as well as pay for goods and services by swiping their mobile phones over a special reader. Each transaction is charged at Tk. 3, while cash withdrawals (cash-out) are charged at Tk. 5. This excess cost for cash-out is a built-in feature to dis-incentivize withdrawals and promote the usage of electronic money. At the moment, customers would have to have a smart phone (internet-enabled) to access the service, although there are plans to provide the service on basic feature mobile phones in the near future. To use the service, customers must open an account at a postal outlet, at a cost of Tk. 10. The service is currently being offered on a pilot basis in seven divisional cities (metropolitan areas), with plans for expansion to the wider network of postal outlets, as well as to an additional 100,000 agents. Each agent will be provided with a “Bangla Pad,” a hand-held tablet computer which will enable them to provide associated services. The Post Office has also provided training to postal staff, to enable them to provide the service effectively. Importantly, the mobile accounts provided under the Mobile Banking Service are not linked to the other accounts provided by the Post—namely, the Postal Cash Card accounts and Savings Bank accounts. As per the guidelines for mobile financial services issued by Bangladesh Bank, mobile accounts must be kept separate from standard accounts. However, an unknown factor is whether this requirement limits the linking of mobile accounts to the Postal Cash Card accounts by Bangladesh Post.

6. Rationale for the Business Model for Digital Financial Services

Not long ago, the Bangladesh Post Office processed around four million physical money orders on an annual basis, which decreased considerably to 2.8 million as a result of competition from private courier businesses. The introduction of the new mobile money order system, along with the other digital financial services would enable the Post to remain a key player in the remittance and financial services market. As a Government department, however, the Bangladesh Post Office would not have had the capacity to launch and operate digital financial services on its own. Forming multiple partnerships therefore enabled the Post to obtain much-needed capital investment, technology, and network infrastructure. These partnerships have also ensured that postal officials and staff receive the technical skills needed to effectively manage the new services.

Partnership with Banglalink Mobile Company: Banglalink is the second largest Mobile Network Operators (MNOs) in Bangladesh, and has an extensive network coverage area. This partnership therefore allows the Bangladesh Post to ensure that the Mobile Money Order Service is accessible in a large number of postal outlets, especially in areas where there is little or no internet connectivity.

Partnership with ITCL and Sonali Bank: On the network side, as ITCL operates one of the largest networks of ATMs and POS devices across the banking system, the Post Office can provide a good level of interoperability for Postal Cash Card users, and thus ensure convenience and easy-access to financial services. Furthermore, the arrangement with Sonali Bank allows the Post to share the risks associated with cash management, as well as the costs of setting up ATM booths across the country, which can be significant.

Partnership with Bangla Phone Limited: This partnership, in which Bangla Phone is responsible for the full implementation and operation of the mobile banking service, as well as the full cost of the service, enables Bangladesh Post to further utilize its network of postal outlets to expand financial services to the wider population, without bearing the full cost of rendering the service.

7. Results Achieved

Since the introduction of digital financial services at the Post Office, the “popularity of Bangladesh Post [has been] increasing day by day.” In 2013, the Post earned Tk. 240,000,000 (~US\$ 3 million) more revenue than the previous year, mainly due to the growth and success of its new financial

services. The net income of the Post also improved considerably to Tk. 750 million in 2013. The Mobile Money Order Service has been particularly successful, accounting for 22.5 percent of the remittance money transfer market in Bangladesh by June 2011.⁴⁹ the service is expected to grow at a rate of 5-6 percent in the future.

8. Understanding Consumer Demand

Regulators can assess a DFS product's potential for promoting financial inclusion by considering how well the initiative focuses on local context and customer value proposition. Emphasizing these two aspects in DFS initiatives will ensure players are being encouraged to deliver solutions and products that are useful and relevant for the under-banked and unbanked. Considerable research has emphasized the importance of these two aspects for DFS, a summary of which follows, highlighting how regulators can assess if local context and customer value proposition have been adequately considered.

8.1 Local Context

Davis and Owens contrast different countries to illustrate the importance of local context in understanding demand. In the Philippines, the demand is to move money between urban and rural areas and from overseas. The MNOs have, therefore, enjoyed a distributional advantage over point-of-sale (POS) networks and their mobile money products, Smartmoney and GCash, have been very successful. In contrast, in South Africa, consumers either have a bank account in which to receive their salary or access to a cash-out facility provided by the Government. There is little incentive for consumers in this market to replace their existing methods of accessing funds with a mobile phone payments channel. In order to determine whether a product will be successful, attention to the local context, and insight into the local customer base will be essential. In particular, any new service must be evaluated in the context of existing services that customers are accessing. Only with that information can a reasonable assessment be made of what might or might not be successful. A good illustration of this point is recent research into smallholder farmers, whose demand for mobile services, including finance and information, is far below the potential it has to benefit their businesses.

8.2 Customer Value Proposition

MicroSave has written extensively on the importance of the customer value proposition and keeping the clients' needs at center focus when designing new products. Manoj Sharma, Managing Director at MicroSave Asia, has noted what might seem obvious, but seems to have been missed by many product developers: "Your good intentions are not necessarily good for the client-talk to them and find out." Sharma lists certain questions to address when assessing how compelling the value proposition is for end users:

- What pain points does the new system address?
- Is it more convenient and easier to use?
- Does it provide value for money (if not less expensive)?
- Is it more secure than alternatives?

Sharma refers to "consumer pull" as being the key consideration. He notes the "natural pull" of particular products such as "money transfers/ remittances and welfare receipts" but emphasizes that "[a] deeper understanding of consumer aspirations and preferences is essential for the success of other products that do not have the benefit of a natural pull." For example, consumers may want a savings account product, but simply be prevented from actively using the account due to expenditure shocks and having very little income to keep as savings. Consequently, financial literacy and aggressive marketing may have little effect on long-term usage. In contrast, the demand for other products, such as remittances, is naturally strong and explicit and requires little in the way of marketing and consumer education.

8.3 Customer Demand Surveys

Customer demand surveys are also useful for drawing background information. However, care should be taken in interpreting the results of demand studies as survey results depend heavily on the

precise questions asked. Surveys are also done at a single point in time when what is needed is an understanding of the longer-run perspective-what the customer may need in three months' or a year's time. Capturing customer perceptions in these surveys is also important: perceptions on existing access to financial services (formal and informal) and what customers may perceive as valuable in a new service or product.

8.4 Understanding Consumer Demand-not so Straightforward

Ignacio Mas has looked at why moving consumers from informal financial mechanisms to formal financial mechanisms, such as DFS, is not as straightforward as some might believe or want. Mas posits an interesting thesis on how to marry the “richness of informal financial practices” with the “structure of formal finance” to create a financial experience analogous to eating a “richly layered cake.”

Mas describes how the various needs underpinning financial inclusion can be thought of as layers of a cake that combine to offer a texture, flavor and color that can only be fully experienced when slicing through the various layers.³⁰ Mas emphasizes that it is only through combining formal and informal financial mechanisms, akin to combining the various layers of a cake, that the benefits of financial inclusion come to the fore. Mas give the example of M-Pesa, referring to the formal mechanisms as the MNO offering the product, and the Central Bank and competition regulator overseeing the process, while the informal mechanisms are the existing domestic remittance methods embedded in Bangladeshi culture (which quickly shifted across to being remitted via mobile money upon commencement of M-Pesa). These formal and informal mechanisms combined to create the DFS ecosystem that is today spurring on financial inclusion in Kenya.³³ Mas cites Susan Johnson as appropriately revealing this “source of the magic that has lit up Kenya with electronic money” which Johnson has termed “The Rift.”

Mas explains that by combining informal and formal mechanisms, end users will feel as though they own the financial services relationship and have control over their money. Mas emphasizes that new products should not simply be built and rolled out with consumer education on their use with the expectation that this will create consumer demand. Instead, Mas advocates pursuing a more detailed understanding of what is important to the end users operating in an informal economy and then working out how to combine those important informal disciplines and mechanisms with formal payments, disciplines and mechanisms. This would give rise to digital savings solutions that could displace informal savings options.

9. Building Consumer Demand

Regulators can encourage the development of successful and sustainable DFS ecosystems by encouraging, and being a part of, efforts to build consumer demand. Examples of what these efforts might include are:

- To be an enabling regulator
- To encourage the movement of cash payments to be done electronically using mobile money, particularly government payments (such as G2P and person-to-government (P2G))
- To facilitate financial literacy efforts that focus on incorporating end users' needs
- To develop open/ interoperable/ interconnected systems
- To enable partnerships between the various market players leveraging on the “sum is greater than the parts.”

9.1 An Enabling Regulator

The Philippines' central bank, Bangko Sentral ng Pilipinas (BSP), is renowned for being an enabling regulator when it comes to innovations in financial services. In an interview with CGAP in November 2012, Deputy Governor Nestor Espinilla Jr. explained how the BSP created space for private sector innovation in the area of DFS by adopting a regulatory approach of allowing the

private sector to test and learn.³⁷ The BSP developed regulations for mobile money which enabled the telecommunications companies to compete with banks to deliver mobile money services through a subsidiary which is required by BSP regulations to focus solely on mobile money services. Espinilla noted two main benefits from BSP's "test and learn" approach: increased competition leading to a greater range of available services and decreased remittance costs (the latter particularly important in the Philippines where external remittances comprise 10 percent of GDP and internal remittances are an important part of the domestic economy as families working in urban areas regularly send money to family members living in remote rural areas). BSP supported this enabling regulatory approach for the new financial services by strengthening its regulatory capacity to oversee e-money issuers. BSP established a new supervisory unit bringing together the skills of regulators from its information technology area as well as the banking supervisory area.

India's regulatory approach toward mobile money ecosystems has, until very recently, sat in stark contrast to that of the Philippines. The Reserve Bank of India (RBI) has required MNOs to use bank agents for the "cash-out" service associated with MNOs' mobile money products. The MNOs would prefer to use their own agents to provide this service. The MNOs have argued that the infrastructure is already in place, through their extensive network of agents which mobile phone customers use to "top-up" airtime on prepaid cards. The RBI has prohibited MNOs from using these agents for cashing out mobile money. The banks themselves have been reluctant to move into this space as there were limited prospects for profitability. Banks tend to seek profitability from cross-selling, whereas MNOs focus on profits from large volumes.

The RBI has, however, become much more proactive on the financial inclusion front, especially in relation to payments. The RBI recently announced it would create a new class of regulated institutions, "payment banks" that will accept demand deposits and provide remittance services. This was a key recommendation in the RBI's Report of the Committee on Comprehensive Financial Services for Small Business and Low Income Households (the "Mor Committee Report"). In announcing this change, the RBI is acknowledging the importance of payments services products that facilitate domestic remittances for greater financial inclusion. The payment banks will be allowed to act as agents for banks. Entities eligible to apply to undertake this new bank agent activity include existing nonbank prepaid instrument issuers (PPIs), non-banking finance companies (NBFCs), corporate business correspondents, mobile telephone companies, supermarket chains, companies, real sector cooperatives and public sector entities. It is expected that this regulatory change will see a more effective and efficient use of the MNOs' extensive agent networks. However, it is not yet clear whether this means MNOs can provide cash-out services to their mobile money customers. The RBI may maintain its cautious approach in this area.

9.2 Shifting Government Payments to Electronic Funds Transfer Channels

Regulators may also assist by working with governments to channel government funds and subsidies through safer and more efficient digital payments systems. Such efforts are not without challenges. However, financial regulators supporting such initiatives (either through regulation of the entities channeling the payments or through policy changes to support the required payments infrastructure developments) will contribute to building consumer demand for the new payment methods.

An example of a government initiative to support the move toward more efficient and safer payments systems is India's Aadhaar program. This involves biometric identification processes to capture fingerprints and eye scans to confirm a person's identity. Early findings suggest this program can reduce fraud, which prevents government aid from reaching the intended recipients. This program may contribute toward the success of moving from cash-based payments to electronic methods.

9.3 Financial Literacy Efforts Focused on End Users' Needs

Improved financial literacy can help build more trust with the end users of the new payment methods. Tilman Ehrbeck, CEO of CGAP, has commented that what is really needed is not necessarily financial literacy but new thinking on how products are designed and how their usage and functionality is communicated to an audience that is linguistically illiterate and consequently have different lenses through which they view the world. Ehrbeck argues that the onus is on the designers of the products to translate the formal financial concepts “into language consistent with the everyday realities of poor people.”

9.4 Open/ Interoperable/ Interconnected Systems

The development of system infrastructure that enables interoperability and interconnectivity will assist in building consumer demand for DFS systems. As explained below through the examples of the Philippines, Malawi, Papua New Guinea and Kenya, the path toward interoperable DFS systems is a challenging one for regulators. However, regulatory involvement is likely to be necessary to provide the drive that market forces alone will not create.

Mobile money in the Philippines consists of two MNOs offering e-money which are not interoperable. The central bank, Bangko Sentral ng Pilipinas (BSP), is working with the MNOs to speed the journey to interoperability. BSP is working with Bankable Frontiers Associates and began the process by defining the ideal of interoperability. A vision was developed for “any to any”-sending e-money to bank accounts or to other e-money accounts irrespective of with whom the end users banked or held mobile money accounts.

BSP is now working with the industry to develop the rules of the game and has aimed for interoperability between electronic payments by 2018. BSP emphasizes the role of consultation and has conducted a conference on the topic with industry players. Feedback from industry participants at the conference indicated they wanted BSP to play a key role in the journey toward interoperability. BSP is now working on options, such as a common switch, that will operate as a utility to which payments participants can connect. BSP is also considering a payments system law alongside these market developments because the legal framework will determine what it can do, including a regulation mandating the interoperability of all POS and cash-in/cash-out outlets.

Malawi's central bank, the Reserve Bank of Malawi (RBM), has also identified interoperability as a goal. The RBM has launched a national switch for retail payment systems to improve interoperability between existing digital payment systems, and to further accelerate digital payment uptake.⁵¹ In a speech delivered by Ralph Jooma, the

Minister of Economic Planning and Development, he noted that the national switch “will provide a switching platform for internet banking, remittances, and mobile money transactions.” Jooma said “we have decided to develop this as a shared payment services arrangement with the Bankers Association of Malawi so as to facilitate interoperability and help ensure the volumes to make the investment viable.”

In Papua New Guinea, the challenges of interoperability possibly still lie ahead for the regulator, as there are six mobile money providers with no fully interoperable systems as yet. Its central bank, the Bank of Papua New Guinea (BPNG), encourages interoperability but does not mandate it. Nationwide Microbank's (NMB) mobile money wallet, MiCash, has entered into an agreement with Digicell and Post to move toward interoperability. However, this agreement will still be outside of the main payments system. PNG recently launched a new real-time payments system, CATS, but it does not include players outside of the traditional payments systems such as mobile money providers.

In Kenya, the National Payment Service Regulations provide a framework for market-led interoperability, and permit the Central Bank to recognize a payment service provider management body whose intent is to facilitate interoperability among payment service providers. In early 2014

in Kenya, the Communications Authority of Kenya (CAK) licensed three Mobile Virtual Network Operators (MVNOs) (Finserve Africa, Mobile Pay and Zioncell Kenya), which will all have their wallets hosted by Airtel.

Aside from the serious competitive threat this brings to Safaricom's M-Pesa (Airtel is Kenya's second-largest MNO behind Safaricom), there is a great potential for these three MNVOs' services to be made interoperable as they will all operate over the same MNO's network. Safaricom, Airtel and CAK have also had extended negotiations seeking an out-of-court settlement of a case in which Airtel accused Safaricom of abuse of its market-leader position. CAK declined to investigate unfair pricing of M-Pesa transfers between Safaricom users and users of other MNOs' networks and so Airtel launched a court case. Safaricom was subsequently ordered by CAK to open up its network and CAK indicated in its ruling that further discussions with the Central Bank of Kenya on interoperability and costs of transactions will take place. Central banks, in endeavoring to improve financial inclusion through interoperable networks, need to think and act strategically. Acknowledging the presence and importance of new payments players in the payments space and navigating the path toward open and interoperable systems will be challenging but is important and potentially productive of major improvements in financial inclusion.

9.5 Role of Partnerships in Building Consumer Demand

The importance of partnerships in the DFS space is of increasing interest to development partners and policy think tanks, such as CGAP and AFI. In this article, we are referring to partnerships between payments providers, banks, MFIs and MNOs. Such collaborative efforts assist to strengthen the products and services available, as outlined below, and can consequently strengthen financial systems more broadly.

Partnerships between nonbanks and banks within the DFS space are beneficial on a number of fronts. Partnerships can address some regulatory concerns; the pool of funds held by a nonbank may be reduced as end users transfer funds into prudentially regulated deposit accounts at a bank that has a partnership with a mobile money provider.

Partnerships can also allow for deeper product offerings: beyond bill payments and remittance activities to providing customers with a greater range of services, including savings, credit and insurance. From a bank's perspective, partnering with nontraditional competitors also provides an opportunity to tap into expert innovative digital solutions that may otherwise be beyond their capability. From a nonbank's perspective, partnerships provide an opportunity to take advantage of a bank's governance arrangements and operating models. From a regulator's perspective, where there is an emphasis on financial inclusion in particular, the regulator may need to reassess which institutions are allowed to take deposits. In many markets, there are restrictions on MFIs taking deposits. Such restrictions may need to be reassessed in order to enable partnerships in DFS ecosystems to be successful.

10. Conclusion

Regulators should develop an understanding of consumer demand, so as to better appreciate which market developments need to be encouraged or facilitated through policy and regulatory changes. We have outlined factors for regulators to consider in developing an understanding of consumer demand, including the importance of local context and the customer value proposition. We have outlined examples of how regulators can build consumer demand, with a particular focus on their role in facilitating successful partnerships in the DFS space.

In summary, by working to understand and build consumer demand, regulators can facilitate the building of sustainable DFS ecosystems and move closer to the goal of providing financial access for all. We urge regulators to consider this approach to consumer demand alongside their traditional responsibilities of ensuring safe and sound financial systems. We recognize this approach is advocating a broader role for financial regulators.

We believe, however, it is critical for regulators to assume this role because it is now clear that market forces alone will not always, or even regularly, deliver sustainable DFS in markets that can benefit from improved financial inclusion. We believe financial inclusion will be significantly strengthened when regulators focus on the importance of consumer demand in DFS and the regulatory challenges that come with building consumer demand. This regulatory focus will strengthen and support the existing efforts of market players, development partners and financial inclusion advocates in emerging markets to use DFS to broaden accessibility to financial services. While this represents a new regulatory frontier for financial regulators, it is a frontier well worth navigating in order to ensure the unbanked and under-banked benefit as much as possible from the abundance of innovative DFS available today.

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Interfacing Model for Superior Practices of Management Information Systems (MIS) in the Service Organization: Case Based Approach

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1. Introduction

Information Systems (IS) is any combination of Information Technology (IT) and people's activities that support operations, management and decision making functions of any organization. In a very broad sense, the term 'IS' is frequently used to refer to the interaction among people, processes, data and technology while Management Information Systems (MIS) is the study of people, technology, organizations and the relationships among them. MIS professionals help firms to realize maximum benefit from investment in personnel, equipment, and business processes. MIS is a people-oriented field with an emphasis on service through technology. It is the key information systems that creates, processes, stores, and generates information with the unprocessed data within and outside the organization.

In the last few decades, top management of different organizations has been increasingly urged to improve the way in which their information systems development efforts are being managed. Management concepts being advocated include viewing information systems as a business within a business (Cash *et al.*, 1983), managing the information resource by committee (Nolan, 1982), developing strategic plans for the information systems function (Head 1978, King 1978, McLean & Soden 1977), understanding the contingency approach to management (Wetherbe & Whitehead, 1977), and analyzing the firm's portfolio of present and potential projects (McFarlan 1981, Buss 1983). MIS can play a significant role in an organization for taking right decisions at the right time and right place by analyzing the surrounding situations with the help of different information systems in a global competitive environment. Success of service organization mainly depends on the swift customer service, instant response, and keeping in touch with customers that enhance customer loyalty in the service organization. In the fiercely competitive business world, service sector may avail competitive advantage through proper customer care, quick decision while MIS would assist the manager to track quicker decision-making process in the service organization. An IS is organized process. It condenses and filters data until it becomes information for use in decision making at various levels of the organization. Preferably an MIS would provide outputs that are reliable, timely, and accurate to support decisions making. However, MIS exclusively facilitates operational and management functions and importantly in the decision making process of business organization (Lederer & Mendelow 1988, McLeod & Schell 2004). More recently, organizations have begun to create information systems that can provide a strategic impact and earn substantial profits. Despite an expanding literature shows that interest in developing information systems is increasing in the organization to take strategic impact, but recent research has shown that top management still needs to be convinced about the potential strategic impact of information systems in the organization (Clemons 1986, Clemons *et al.*, 1984, Clemons & Kimbrough 1986, Clemons & McFarlan 1986, Harris 1985, Ives & Learmonth 1984, Jonscher 1983, King 1978, McFarlan 1984, Petre 1985, Porter & Millar 1985, Rackoff *et al.*, 1985, Wiseman 1985).

2. Problem Statement

Empirical evidence unambiguously supports the view that MIS is an efficacious tool for modern business practitioners, but it is completely depends on the best practices of MIS in the organization (Benbasat and Zmud, 1999). The inconsistencies observed among various studies have been attributed to variation in application and practices of MIS in a different organization. Literature

highlighted the practices of MIS in different organization focused on limited aspects because of formal meaning and application of MIS is not unique to everyone (Benbasat and Zmud, 1999; Santhanam and Hartono, 2003; Nolan and Wetherbe 1980). Previous studies conducted on the area of MIS application which is limited to the decision making process of business organization (Nolan and Wetherbe, 1980, Culnan 1986, Culnan and Swanson 1986, Alavi and Carlson 1992, and Baskerville and Myers 2002). Management of the different organizations has misunderstanding about MIS concept, dimensions of MIS, and its practices.

MIS practices are very limited in the banking sector of Bangladesh. Smooth practices of MIS depends on a few factors of the organization while management and employees have limited understanding about these factors and how these factors are responsible for improving practices of MIS. So, MIS must be designed and practices with due regard to organizational and behavioral principles as well as technical factors. Management must be informed enough to make an effective contribution to system design and Information specialists (including systems analysts, accountants and operations researchers), and system users must become more aware of managerial functions and needs so that, jointly, more effective MIS are developed and practiced in the organization.

3. Literature Review

Review of previous literature suggests that one of the most important aspects of MIS is the best practices in the business organization. Culnan (1986) argues that few attempts have been made to present a systematic application of MIS in the service organization.

Therefore, this research is design to identify the gaps in the previous research on the MIS practices in general and in particular banking sectors in a developing country like Bangladesh. This study is an attempt to present a general scenario of MIS with the theoretical application of different factors of MIS which affects the systematic application of MIS in the service organization specifically in the banking sector of Bangladesh.

Though, Management Information Systems is an integrated, user-machine system for providing information to support operations, management, and decision-making functions in an organization (Davis & Olson, 2000), but MIS used as priori role for problem solving and decision making in the organization. Scope of MIS would be in planning, operation, decision making purposes within the organization with a different orientation based on organizational commitment of using information systems.

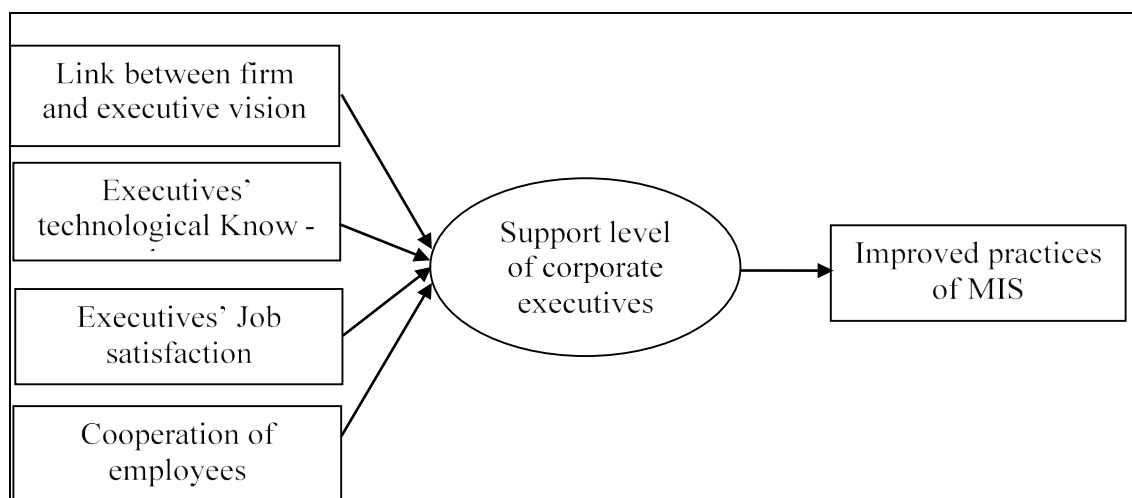
But proper practicing of MIS mainly depends on few factors of organization. Following section will discuss about different factors like corporate executives, employees' involvement, and IT infrastructure of the firm which contribution is very important for best practicing of MIS in the business organization.

3.1 MIS and Corporate Executives

Corporate level people are key factors that creates environment for taking time required policy for the organization. The important role of corporate executives has been greatly emphasized in literature (McIvor and Humphreys, 2004; McIvor *et al.*, 2006; Jiao *et al.*, 2008). Since senior managers are the most cognizant of the firm's strategic imperatives to remain competitive in the market place, they have a better understanding of the needs of information systems in the organization (Agarwal and Lucas, 2005). Manfreda and Stemberger (2014) found that top management should have relationship or understanding with IS personnel and financial resources to support the development of IS practices in all phases of the organization. Top management support, mainly defined as supporting the initiatives of IS personnel and understanding the importance of IS (Ragu-Nathan *et al.*, 2004), is crucial for successfully implementing IS (Doom *et al.*, 2010; Ramdani *et al.*, 2009; Ranganathan and Kannabiran, 2004; Doll and Ahmed 1983).

Management commitment to development and practices of MIS is defined as consciously choosing proper IS as operational and strategic operations for the organization, and engaging in IS activities such as providing proper IT infrastructure and coordinating employees for the purpose of adoption and implementation of MIS (Manfreda and Stemberger 2014, Earl and Feeney 1994, Wetherbe & Whitehead 1977, Sandhu & Ajmal 2012). Again, Previous study explained that committed support of corporate executives for better practicing IS in the organization depends on few factors such as **firm's and executive's vision** (Ross and Feeny, 1999; Maruca, 2000), **Executives' technological know-how** (Miller, 1980; Armstrong and Sambamurthy, 1999; Ranganathan and Kannabiran, 2004; Nelson 1973), **Executives' Job satisfaction** (Kaplan 2001), and **Cooperation of employees** (Potocki and Bocato 1995; Galbraith 1973; Wainer and Rubin 1969). Thus proposed model for corporate executive support:

Figure-1.1: Framework of Corporate Executives Support in Practices of MIS



Source: The Author (constructed based on Ashill *et al.*, 2006)

3.2 IT Infrastructure and MIS

IT infrastructure is the shared IT resources consisting of a technical physical base of hardware, software, communications technologies, data, and core applications and a human component of skills, expertise, competencies, commitments, values, norms, and knowledge that combine to create IT services that are typically unique to an organization.

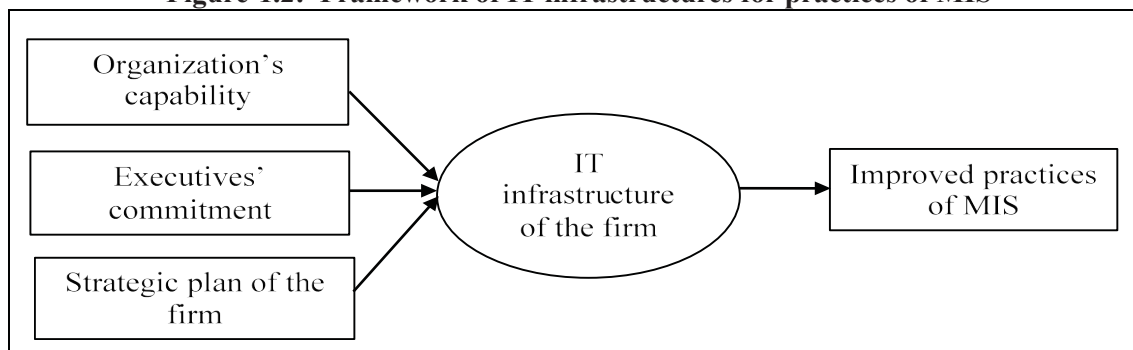
Recent research on the relationship between IT and organization describes systems of organizational practices that complement of IT. One theoretical perspective that convincingly addresses the complementarity of IT and organizational processes, practices, routines, and activities is the resource-based theory of the firm (Wernerfelt 1984, Barney 1991). This theory argues that durable competitive advantage emerges from unique combinations of resources (Grant 1996) that are economically valuable, scarce, and difficult to imitate (Barney 1991). IT infrastructure provides the foundation of shared IT services (both technical and human) e.g., servers, networks, laptops, shared customer databases, help desk, application development) used by multiple IT applications (Keen 1991, Weill and Broadbent 1998). However, infrastructure investments also enable new applications and functionality and lay the groundwork for significant improvement of practices of newly developed IS in the organization (Duncan 1995, Broadbent *et al.*, 1999).

Thus IT investment in different dimension has direct impact on practices of MIS in the business organization. But, appropriate IT infrastructure mainly depends on **organization capability** (financial base and technical human resource base) (Keen 1991, Weill and Broadbent 1998; Floyd and Wooldridge 1990), **commitment of corporate executives** (Lucas 1975, Willoughby and Pye

1977; Ein-Dor and Segev, 1981), **strategic plan of the organization** (Floyd and Wooldridge 1990, Ives and Learmonth 1984; McFarlan and McKenney 1983; Porter and Millar 1985; Keen 1991).

Thus proposed model for determining factors for strong IT infrastructures:

Figure-1.2: Framework of IT infrastructures for practices of MIS



Source: The Author (constructed based on Keen, 1991.)

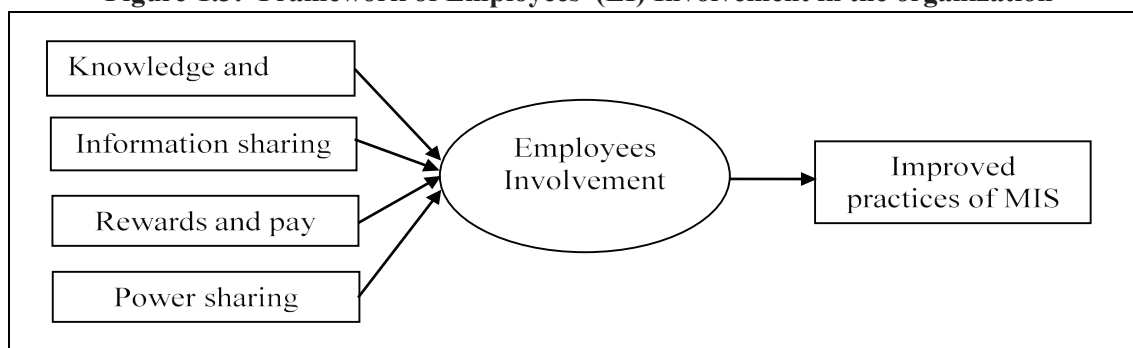
3.3 Employees Participation in MIS

The direct participation of employees help an organization fulfill its mission and meet its objectives by applying their own ideas, expertise, and efforts towards solving problems and making decisions. This type of participation is known as Employees' Involvement (EI). EI is "the extent to which employees producing a product or offering a service had a sense of controlling their work, receiving information about their performance, and being rewarded for the performance of the organization" (Lawler *et al.*, 1992, p. 2).

Meta-analytic studies have supported EI's positive effect on both satisfaction and performance (Miller and Monge, 1986; Cotton *et al.*, 1988; Wagner, 1994). Yet, EI's effects statistically significant in organizational change like new system development (Wagner, 1994). EI's also increase the acceptance level and practices of new change in the organization which ultimately contribute in the Total Quality Management (TQM) (Deming, 1986; Flynn *et al.*, 1995; Jack *et al.*, 2001; Kathuria and Davis, 2001). Recent research has begun a rigorous examination on employees' participation on practices of newly implemented systems in the organization. So, EI in the IS has direct impact on practices of MIS in the business organization but true EI are influenced by many factors such as **Knowledge and training of the employees** (Lawler *et al.*, 1992; Baskerville and Myers 2002), **Information sharing** (Lawler *et al.*, 1992; Suzaki, 1987; Schonberger, 1992; Flynn *et al.*, 1994; Choi and Eboch, 1998), **Rewards and pay** (Lawler *et al.*, 1992; Imai, 1986; Flynn, 1992; Choi and Eboch, 1998; Poole and Jenkins, 1991), **Power sharing** (Lawler *et al.*, 1992; Baskerville and Myers, 2002).

Thus proposed model for depending factors of Employees Involvement in IS:

Figure-1.3: Framework of Employees' (EI) Involvement in the organization



Source: The Author (constructed based on Lawler *et al.*, 1992.)

3.4 MIS and Banking Sector

A bank is a financial intermediary that accepts deposits and channels those deposits into lending activities, either directly or through capital markets. The banking sector of Bangladesh relative to the size of its economy is comparatively larger than many economies of similar level of development and per capita income. The total size of the sector at 26.54 percent of GDP dominates the financial system, which is proportionately large for a country with a per capita income of only about US\$370. The non-bank financial sector, including capital market institutions is only 3.22 percent of GDP, which is much smaller than the banking sector (Sayeed *et al.*, 2002). Service sector contribute about 50 percent of total GDP (Economic Review, 2010) and banking sector is the key role playing sector not for direct contribution but to inducing the contribution in the GDP of other sectors.

Modern banking system plays a vital role for a nation's economic development. Over the last few years the banking world has been undergoing a lot of changes due to deregulation, technological innovations, information systems application, and globalization etc. Banking Sector in Bangladesh is facing challenges from different angles though its prospect is bright in the future because of stiff competition among the banks within efficient operational activities, prompt customer service, customized products & service, innovative idea and strategic operational & management decision. Many banks offer better customer services, personal financial services, corporate facilities, trade services with the help of efficient operational department, credit department, and information technology department. Only a few studies regardless of research context have been conducted which focus on the attributes of innovations, as perceived by potential users (Ostlund, 1974; Taylor, 1977). Lack of utilization of IT is the main intricacy of the banking sector of Bangladesh.

During last decade, a high percentage of financial organizations frequently used Management Information Systems to facilitate the provision of services; and that the speed of the adoption is expected to grow further as the technology expands. To financial institutions, MIS is used at various levels by top-management, middle and even by the operational staff as a support for decision making that aims to meet strategic goals and strategic objectives (Karim, 2011). Again (Rawani & Gupta, 1999) explain the importance of MIS that it will assure the top management that the MIS development is in the right direction. It has been empirically proved that the future impact of IS does not vary significantly with the banking groups. This suggests that IS efforts put in by the public sector banks are in the right direction and can be expected to give them a strategic advantage in future.

Chandrasekhar *et al.*, (2008) depicted that banks will reap the benefits of IT truly and totally, if and only if they pay adequate attention to technological progress as well as efficiencies on the input and output sides. So this sector to realize innovative service for customer to keep up their satisfaction with the application of MIS urgently. Few banks have IT department rather than MIS department to perform operational activities only. Within a shortest possible time all the banks will be under the common platform to speed up their customer.

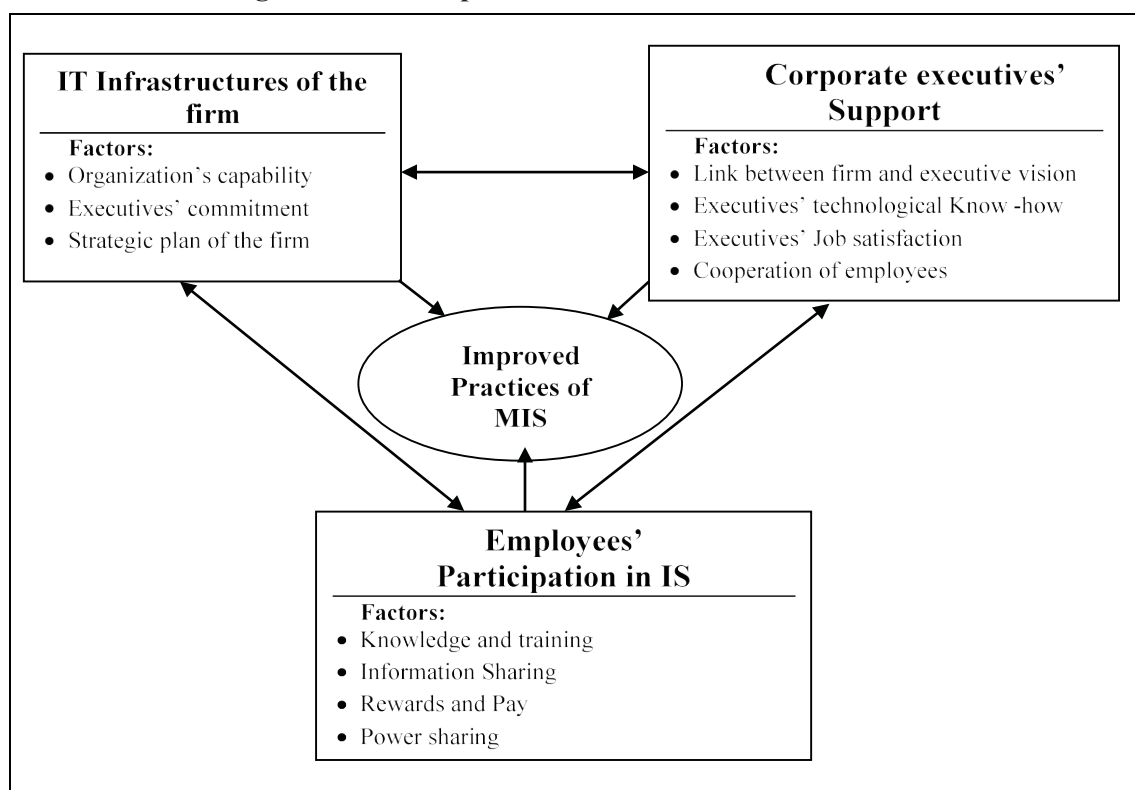
3.5 Conceptual Framework for Improved Practices of MIS

Theory explains different factors influencing MIS practices in discrete form different dimension. Theory also proved that how these factors are directly related to practices of MIS, but previous theory has not provided sufficient support on relationship between level of integration among the factors and improved practices of MIS in the banking sector Bangladesh.

Considering previous theory relate to the practices of MIS which are discussed in earlier section, author of the present study develop a conceptual framework for practices of MIS. This framework highlights different factors of practices of MIS and their integration for improved practices which is not considered in previous theory. Thus this framework tries to overcome the limitations of previous theory for improved practices of MIS.

Figure-1.4 showed the relationship among three dimension of using MIS in the banking organization.

Figure -1.4: Conceptual Framework of Practices of MIS



Source: The Author

4. Objectives of the Study

The main objective of the present study is to examine current MIS practices and needs of MIS practices in the banking sector of Bangladesh. The specific objectives are the following:

- i. To identify the factors that affect the practice level of MIS in the banking sector of Bangladesh?
- ii. To develop a framework for suggesting MIS for the banking sector.
- iii. To identify future research issues those have been raised in this study.

5. Methodological Orientation

In order to achieve above mentioned objectives, qualitative methods, in particular comparative case study method were used in collecting necessary data. Two banks one from **Nationalized Commercial Banks** (NCBs), one from **Private Commercial Banks** (PCBs), were selected on the basis of access among information systems using banks in the banking industry. As a suitable technique, data were collected directly by the researcher of the present study through personal in-depth interview, observation, and document review method. The key persons of selected organizations in each case were interviewed specifically the executives who directly involve in development, decision making, and implementation of MIS at the different level of the organization. All the interviews were recorded and after completing the interviews, data were transcribed. After data transcription, qualitative data were classified based on the research questions and objectives. Finally, interview data were presented in the form of findings and discussion based on issues, identify through literature review relating to the practices of MIS based on different dimensions. To this end, collected information from different banks are presented sequentially and hypotheses have been drawn on the basis of analysis.

6. Analysis and Findings

This section presented both the theory and comparative picture of the data relating to that theory. In order to simplify the presentations, attempts are made, in most cases, to develop a matrix containing theory and data. Each of the matrices is discussed in detail considering magnitude of the data. The analysis of the data presented on the basis of magnitude. There are four types of outcome are: **Unsatisfactory or not sufficient, Natural or Usual, Reasonable, Satisfactory or up to the mark**. This section is divided into four sub sections are: Corporate executives and practices of MIS; employees' involvement and practices of MIS; IT infrastructure and practices of MIS; and finally gap between needs and application of MIS. Again, each section divided again into two subsections (one for ABL and another for MBL).

6.1 Corporate Executives and MIS in ABL & MBL

Theory suggests that corporate level people are key factors that create an environment for taking the time required policy for the organization. Thus, they have an important role in developing IT infrastructure or self-motivated employees and their involvement in the application of IS in the organization (Doll 1985). Thus, corporate executives' support is very much important to improve practices of MIS (Wetherbe & Whitehead 1977; Buss 1983, McFarlan 1981). But the support level of corporate executives directly depends on **firm and executives' vision** (Ross and Feeny, 1999; Maruca, 2000). **Executives' technological know-how** (Miller, 1980; Armstrong and Sambamurthy, 1999; Ranganathan and Kannabiran, 2004; Nelson 1973), **Executives' Job satisfaction** (Kaplan 1997), and **Cooperation of employees** (Potocki and Bocato 1995; Galbraith 1973; Wainer and Rubin 1969).

Description explain how ABL and MBL corporate people are visionary and what is the firm's strategic vision and in which way they try to improve practices of MIS.

From the following statement of one branch manager of ABL, reflects what is a firm and executive vision in ABL:

Manager of Ramna corporate Branch explained:

"Our corporate executives always concern about the challenges of the bank and we are always aware about stiff completion with PCBs and FCBs. Our IT based operations in all branches and online banking in every important branch are the outcome of our visionary executives."

From the following statement of one branch manager of MBL, reflects what is a firm and executive vision in MBL:

"We are always concerned about our bank and try to adopt with any type of technological change. We have some visionary leaders who contributed regularly."

Executive's vision and organization's vision has positive relationship which supports to develop and practices MIS in ABL & MBL. Researcher found that

"All employees of MBL academic and technical knowledge sufficiently match with their requirements and corporate people has satisfactory knowledge for managing or committing for managing practices of MIS".

AGM and Project director of online implementation of ABL Mr. Jalal Uddin Ahmed focusing employees by his statement:

"Our employees are cooperative and obedient, but the policy of the organization not supported in some cases to motivate employees."

From the analysis of data, findings on the corporate executives' supports in ABL & MBL are organized in the Table-7.1, while surroundings factors of corporate executive supports organized in the Table-7.2.

Table -7.1: Factors Influencing Corporate Executives' Supports to the Organization in ABL & MBL

Factors	Status in ABL	Status in MBL
Relationship of Firm's and executive vision	Satisfactory	Satisfactory
Executives' technological Know-how	Satisfactory	Satisfactory
Executive Job satisfaction (Partially measure)	Natural	Reasonable
Subordinate cooperation	Natural	Reasonable

Source: The Author

Table-7.2: Corporate Executives' Supports on Improved Practices of MIS in ABL & MBL

Factors	Status in ABL		Status in MBL	
	Head office level	Branch level	Head office level	Branch level
Support to development of IT Infrastructure	Satisfactory	Natural	Satisfactory	Reasonable
Support to develop EI	Reasonable	Natural	Reasonable	Reasonable

Source: The Author

6.2 IT Infrastructure

Sufficient IT infrastructure is the precondition for smooth operation of the banking business (Rawani & Gupta 1999; Chandrasekhar and Sonar 2008). So organization should develop such types of IT infrastructure for efficient performance in operational level. The model suggests IT infrastructure of the bank directly impact on the operation process of the systems which directly impact on the performance of the MIS and overall performance of the bank (Keen 1991, Weill and Broadbent 1998, Duncan 1995, Broadbent *et al.*, 1999). IT infrastructure of ABL and MBL have analyzed based on the few factors such as hardware resources, software resources, data resources, network resources, IT workers, and IT support personnel. The description also clearly explain that ABL's IT infrastructure have not sufficient in operational level of the bank, even unevenly allotted hardware resources in rural and urban branches, online and offline branches while IT infrastructure of MBL far advance than ABL. Again, all branches of ABL not practicing same operational procedures in operational level and all branches are not equally equipped with hardware, software and IT personnel thus smoothes IS and MIS practices throughout the bank is questionable?

The reason for this problem may be ABL not in a position at present to develop updated hardware resources or managing other resources like software, human resources in ABL at present.

One top management executive of ABL said:

"Hardware resources were not sufficient when started our operation online banking in the year 2008 that's why we could not ensure progress on planned activities of converting manual systems of banking to online activities. At present, bank updated its hardware infrastructure considering current needs of the bank. So, in future it will not be questionable."

Another Branch manager of ABL has given simple statement:

"Maximum hardware became expired in our bank in many branches thus the Problems occur frequently. So it is a strong urge to update hardware infrastructure."

On the other hand, but comments of the One branch manager of MBL like:

"Before facing any difficulties by any branch of the MBL, head office searching regularly to update IT infrastructure of the MBL so, branch have not any feelings about wants for hardware."

One IT people said:

“MBL has no general risk of using MIS as we have maintained backup for storing of data and we try to ensure correct data inputting in the bottom level”.

Since, MBL has no problems in managing data resources, thus the operational process of the bank positively impact on the performance of the bank.

The findings of the different factors relate to IT infrastructure are organized in Table-7.3 & 7.4.

Table-7.3 IT Infrastructure of ABL & MBL

Factors	Status of ABL		Status of MBL	
	Branch level	Head office level	Branch level	Head office level
Hardware Resources	Unsatisfactory*	Not sufficient	Satisfactory	Satisfactory
Software Resources	Satisfactory	Satisfactory	Satisfactory	Satisfactory
Data resources	Reasonable	Reasonable	Reasonable	Reasonable
Networks Resources	Reasonable	Reasonable	Reasonable	Reasonable
Support personnel	Unsatisfactory*	Natural	Natural	Reasonable

Source: The Author

* Reasonable in some selected branches and not sufficient in others but considering future all are fully insufficient.

Table-7.4: IT Supports on Improved Practices of MIS in ABL & MBL

	Head office level	Branch level
Case on ABL	Satisfactory	Natural
Case on MBL	Satisfactory	Reasonable

Source: The Author

6.3 Employees Involvement or Participation in IS and Practices of MIS

Model suggests employees participation directly impact on the practicing level of MIS in the banking organization. But the level of employees' participation in the information systems practicing directly depends on academic knowledge of the employees, IT training, IT knowledge, information sharing, and power sharing (Lawler *et al.*, 1992; Baskerville and Myers, 2002). This study also found from field study system friendliness is another important factor based on users' explanation which affects the level of employees' participation in IS practicing in the organization. Data description clearly explains how above mentioned factors directly affect the employees' involvement in MIS practicing in the bank.

One top management executive of ABL said:

“Our all employees are not qualified enough to understand and utilize the systems regularly. Most of the old employees' educational qualifications not support to work with the modern banking business and information systems.”

Another senior level employee of ABL said:

“Our most of the old employees not taken training on MIS and a few have taken training at a time passing rather increasing efficiency. Only newly recruited employees perform all MIS works in the ABL.”

On the other hand, one top management executive of MBL said:

“Our all employees' have educational qualifications up to the mark. Thus the bank not facing any problems regarding using any systems and their performance are well.”

One of the technical employees at head office level of MBL stated:

“Top management always takes any type of decision with the participation of our representative for ensuring benefit of the systems.”

The study focused different factors of employees' involvement of the bank and status of employees' involvement of the ABL and MBL are shown in the Table-7.5 & 7.6.

Table-7.5: Factors Influencing Employees' Involvement in ABL & MBL

Factors	Status in ABL		Status in MBL	
	Operational level	Management level	Operational level	Management level
Academic knowledge of employees	Unsatisfactory	Reasonable	Reasonable	Satisfactory
Training of the employees	Natural	Natural	Reasonable	Reasonable
IT knowledge	Unsatisfactory	Natural	Reasonable	Satisfactory
Information sharing	Unsatisfactory	Natural	Natural	Natural
Rewards and Pay	Unsatisfactory	Unsatisfactory	Satisfactory	Satisfactory
Power sharing	Natural	Natural	Natural	Natural
Systems friendliness	Natural	Natural	Reasonable	Reasonable

Source: The Author

Table-7.6: Employees' Participation on Improved Practices of MIS in ABL & MBL.

Factors	Status in ABL		Status in MBL	
	Head office level	Branch level	Head office level	Branch level
Cooperation to top management	Reasonable	Reasonable	Satisfactory	Satisfactory
Participate in IS using	Natural	Unsatisfactory	Satisfactory	Reasonable

Source: The Author

6.4 Comparative analysis of ABL and MBL

From the analysis of the theory and data description of two banks it has found, factors influencing improved practices of MIS in banking sector showed dissimilarity among the PCBs and NCBs. Theory suggests improved practices of MIS in the banking organization depends on some key factors. Among them corporate executive supports, IT infrastructures of the firm and employees participation on information systems are very much important (Doll 1985; Ashill *et al.*, 2006; Natalisa and Subroto 2003; Wetherbe, & Whitehead 1977; Wastell *et al.*, 1994; Deming 1986; Flynn *et al.*, 1995; Jack *et al.*, 2001; Kathuria and Davis 2001).

Support of the corporate executives and level of support of corporate executives to improve practices of MIS in the banking sector is reasonable but not perfectly matches with the ABL and MBL. Again, factors influencing corporate peoples' commitment also differ bank to bank. In considering corporate executives support to develop IT infrastructure and employees' involvement in IS for improving practices of MIS, MBL (representative bank of PCBs) showed one step advance than ABL (representative bank NCBs). Corporate executive support in ABL at head office level and branch level for improvement of IT infrastructure is satisfactory and natural, but for improving employees' participation at head office level and branch level in both cases are natural. But for MBL, in every cases, one step advance, i.e. reasonable, but support for IT at head office level satisfactory.

In considering IT infrastructure of the firm, MBL again one step advance than ABL. But considering bank size ABL not far behind from MBL. In head office level, both banks are same positions in IT infrastructure, but branch level ABL position not so good.

Table-7.7: Comparative scenario of practices of MIS

Factors	ABL	MBL
Support of corporate executive	Satisfactory	Satisfactory
IT infrastructure	Reasonable	Satisfactory
Employees Involvement	Natural	Reasonable
Overall practices of MIS	Natural	Reasonable

Source: The Author

Again employees' involvement or participation in IS of these the banks also different. Reason behind the employees' involvement in using IS of these banks discussed in previous section. But participation levels are different in PCBs and NCBs.

MBL is one step forward in respecting EI than ABL as factors influencing employees' participation of MBL in an advanced position. Table-6.12 showed employees' involvement is as usual in ABL but in MBL that is in standard level. Table-6.12 also depicted no one component of improved practices of MIS in both the bank is excellent or few components has under satisfactory means up to the mark position. But for smooth practicing of MIS requires every component in each bank same type of position at least up to the mark. Thus practices of MIS differ bank to bank and ABL part is mostly common or natural while MBL practicing is reasonable and need to develop.

7. Implications of the Research and Modified Model of Superior Practices of MIS:

Theories on MIS application in different service organizations and MIS application in the bank are also relevant because of the very nature of this study. This research found there was clear evidence of corporate executives support on improved practices of MIS model given by Ashil *et al.*, 2006 (McIvor and Humphreys, 2004; McIvor *et al.*, 2006; Jiao *et al.*, 2008; Doll 1985; Head 1978; King 1978; McLean and Soden 1978; Wetherbe & Whitehead 1977). But, Necessity of the modification of Ashill *et al.*, (2006) model has explained by Taylor (1977, Buss 1983, McFarlan 1981) in their study. They put forward the concept of learning and experience curve effect on executive' commitment and author of this study consider this modification based on collected data.

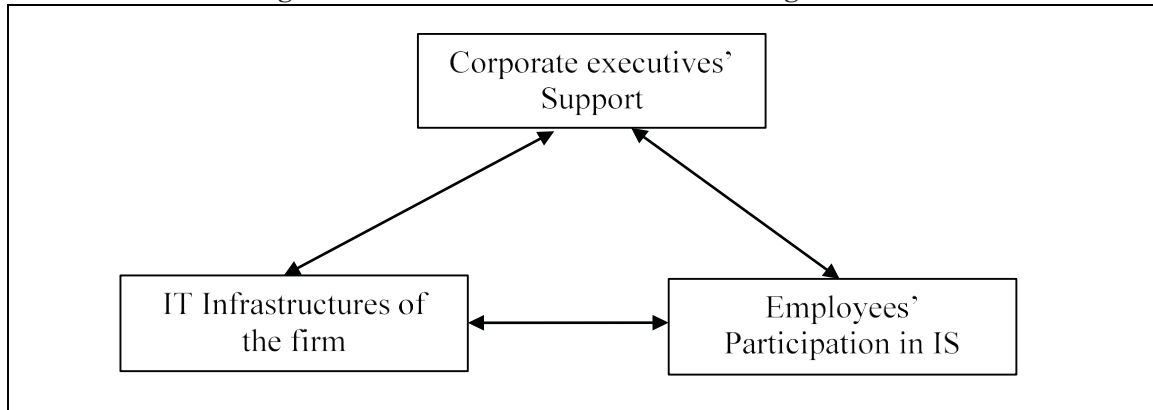
Again, this research found clear evidence of IT infrastructure has direct impact on superior practices of MIS in the banking organization given by Keen model (1991).

Finally, this research also found that there was also clear evidence of Employees Involvement's on improved practices of MIS model given Lawer *et al.*, 1992 (Wagner 1994) But, Necessity of the modification of Lawer *et al.*, (1995) model has explained by (Wagner, 1994; Cotton *et al.*, 1988) in their study. They put forward the concept of system friendliness on employees participation on IS and author of this study consider this modification based on collected data.

So, the findings of the study based on collected data fully supported with minor modification in factors influencing component of the proposed conceptual framework of the practices of MIS (Figure-1.4).

Thus, improved or superior practices of MIS in the organization directly related to the integration of corporate executive support, IT infrastructure of the firm, and finally employees' involvement in IS.

Figure-1.4: Practices level of MIS in the organization



Source: The Author

Author of the present study explained this model from the total approach where each of the component of the model are dependent each other for better improvement of the practices of MIS in the banking organization. The following figure shows all of the factors of each component that may affect the total performance of systems practices in the banking organization.

Figure-1.5: Component of the Proposed Model and Modified Factors of Individual Component for Improving Practices of MIS in the Bank.

COMPONENT	FACTORS
Corporate Executives' Support	• Link between firm and executive vision • Executives' technological Know • Executives' Job satisfaction • Cooperation of employees to top • Learning and experience curve effect (New)
IT Infrastructures of the firm	• Capability and technical capability • Strategic plan of the firm • Corporate executives' commitment
Employees' Participation in IS	• Knowledge and training • Information sharing • Rewards and pay • Power sharing, etc. • Systems' friendliness (New)

Source: The Author

9. Conclusion:

On the basis of data description and analysis of these data, the central conclusion of the study is: Practices of MIS in the banking sector not unique and improved practices of MIS depend on three critical issues and their interactions, which are supportive of corporate executives, Status of IT infrastructure, and level of employee participation in IS. Considering these factors, framework of practices of MIS has developed which has developed as a main model for this study.

The model shows, corporate executives' support has positive impacts and determine the level of IT infrastructure and employees' participation in the systems while employees' participation has a positive impact on the level of corporate executive cooperation and use of IT and finally sound IT infrastructure of the firm determine by the corporate executive supports and employees' participation in the systems. So, improved practices of MIS in the bank depend on level of interactions among the components as they are interdependent variable.

Each of the components has the same type of impact in both cases, though NCBs and PCBs both are not in the same position in the current practices of MIS in the bank.

This model actually analyzed the level of impact considering all factors are equal.

Despite the current limitations of the model, it can analyze each of the factors and sub factors' impact individually on the practices of MIS in the bank. This model provides distinctive insight into process of practices of MIS in the bank. From the practical point of view, the bank can be use this model as a comparative framework and to improve practicing level of MIS in the bank.

Turning to central conclusion based on the analysis, this research hypothesized that:

- i. Adequacy of each type of component of the MIS has related type of impact on the practicing level of MIS in the bank.
- ii. Level of integration among the components MIS practicing has related type of impact on the practicing level of MIS in the bank.

A comparative study provides the empirical foundations of the conclusion, which raises the issue of the potential generality of the findings. The researcher has adopted some mechanism to enhance the potential quality of the findings and the main mechanisms are: interaction of theory and data during data collection and data analysis, application of theory and the use of a multiple data collection method.

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Role of IT in Promoting SME Banking: Indian Evidence

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Introduction

One of the major problems for emerging nations MSME clients is access to finance. According to the IFC and McKinsey recent report on SME banking there is a huge scope lies for banks in MSME loan business in these emerging economies specially emerging Asian countries. Further report also states that rapid development of ICT in banking industries and increasing banking revenue from these emerging nations will attract banks and financial services companies in future. There are several problems associated with the MSMEs of Asian emerging countries like electricity, land issues, tax issues, legal system and others, which makes SME banking difficult in these nations. As result of which demand for SME finance is more in these countries but access to finance is limited as banks do not want to take unnecessary risk. McKinsey reported that alone emerging economies contributed around 367 billion USD from SME banking to the banks revenue. Operation cost for SME banking is comparatively higher in emerging economies than developed nations. The SME clients in emerging nations especially countries like India, China, Bangladesh, Sri Lanka, Myanmar, Nepal, Bhutan etc., are discrete and majority of the populations resides outside the cities and towns. There is high mismatch between the MSME sector weight mix in agricultural and retail clients. Hence, banks that are operated in these emerging economies mainly follow two models for distribution of SME finance: 1. "credit led proposition with low-cost physical distribution" and 2. "Payment led proposition with direct channel distribution". Hence, there lies a difficult task for banks to identify the complex nature of MSME clients to earn revenue from SME business. In this backdrop present study will try to identify how IT can boost SME financing in these emerging nations with special reference to the Indian context. The study discusses several cases where IT in real time helps banks in extending SME finance to SME clients which are not accessible previously. The study findings can be replicated to the other emerging nations.

Review of literature

Information asymmetry or incomplete information of SME clients are always a challenge for banks to extend SME finance to SME clients. Myers & Majluf (1984) study finds that SME clients have more information than banks that makes SME finance difficult in emerging nations. Banks decision for granting SME finance mainly depends on two criteria: Amount of loan and interest rate on the credit amount. In expectation to earn more revenue sometimes bank offers high credit at very higher interests. These may leads to higher probability for default and Stiglitz and Weisse (1981) study find that interest rate alone can responsible for default and ethical practice of the banks. In emerging nations there is lot of information asymmetry and incomplete information prevails among the MSME clients, Morris, Das, Ramachandran, and Koshy (2001); Das (2007) study finds due to which access to finance becomes difficult for SMEs. Apart from information asymmetry problems like more number of sick SMEs with low profitability, asset deficiency makes it more vulnerable to finance suggested by Bhattacharya, Faiz and Zohis (2000) study. As a result of which SMEs opt for other alternative finance from bank SME finance. Carbo, Rodriguez & Udell (2008) study in French context and Satish & Poornima (2016) study in Indian context confirms the same.

For better performance of MSMEs positive government policies plays an important role. Recently government of India has increased MSME investment ceiling. Banerjee, Cole & Duflo (2003) study finds due to increase in the investment ceiling of SMEs, the performance of SMEs increases

in terms of sales. Berger & Udell (2006) study on the frame work for analysing MSME lending depends on two factors: availability of loan and type of credit facility. Due to lack of information about the SME client's banks unable to finance the SMEs as they have to follow some minimum framework for sanctioning the credit. Hence, proper credit rating or asset based lending will helps bank in extending their credits to SMEs, sizeable number of studies by Petersen and Rajan (2002); Berger, Frame, & Miller (2005a); Frame, Srinivasan, & Woosley (2001); Frame and Woosley (2004); Ashok (2010) confirms the same. In countries like India, Bangladesh, Bhutan, Nepal, China family business is more dominating, hence quantitative based and transactional lending will not correctly judge the potential of the SME clients. These family based businesses are highly profitable and banks have high scope for financing these businesses. Study by Marishetty, Ramachandran and Jha (2008) also suggests the same and suggests considering relationship banking for family based business. Finally considering the entire above factor important a strong legal system will help to promote them and assures credit protection of the banks. Hasselmann and Wachtel (2007) study find that strong legal environment of country boost SME finance by the banks. Especially the big and foreign banks extend financial support when there is an assurance for the credit protection.

Apart from the above factors size of the banks matters a lot in SME financing. Big banks follow transactional lending whereas small banks prefer relationship banking. Berger *et al.*, (2005b) study finds confirms the same as procedures followed in big banks are very strict & they generally do not extend their support to the small business without proper information. From the above rigorous literature it is confirmed that several factors like information asymmetry, bank size, sick SMEs etc., makes SME finance difficult for banks. MSMEs are the vehicle for sustainable development for any country but Indian MSMEs are facing difficulties with access to finance. IT & IT enable services can reduce the MSME finance barriers and helps in to increase the performance of the MSMEs. So, it is important to study how development in ICT can boost SME financing in these emerging nations and to include those SME clients which are not accessible to the banks. The present study is different from previous studies as all of the previous studies only talks about the challenges faced by MSMEs and banks in extending SME finance but the present will highlight the impact of ICT in SME banking. Then study will discuss how IT in real time helps banks in extending SME finance to SME clients which are not accessible previously. and finally some policy implications for the government to align their MSME policies.

Indian MSME sector overview

Indian MSME sector is very vibrant sector of Indian economy and it's contribute about 8 percent to the India's total GDP. About over 36 million of SME units across India provides 80 million employments to its youth and one of the fastest growing sector of Indian economy. Khadi and village Industry (KVIP) of India is very unique to India's MSME sector and is also the traditional industry well known for its environment friendly image. Ministry of micro, medium and small enterprises looks into the MSME sector and responsible for its growth and development. As per the MSMED¹ Act 2006 the definition for MSME is shown in the Table-1.

¹ The Micro, Small and Medium Enterprises Development Act

Table 1: MSME Definition as per MSMED act 2006

Categories	Manufacturing ²	Services ³
Micro	≤ 25 lakh	≤ 10 lakh
Small	>25 lakh and ≤ 5 crore	>10 lakh and ≤ 2 crore
Medium	>5 crore and ≤ 10 crore	>2 crore and ≤ 5 crore

Source: MSME, GOI

Presently the MSME ministry proposed new definition for the MSME and investment ceiling has been increased as shown below in Table-2.

Table 2: MSME new Definition as Proposed by MSME new bill

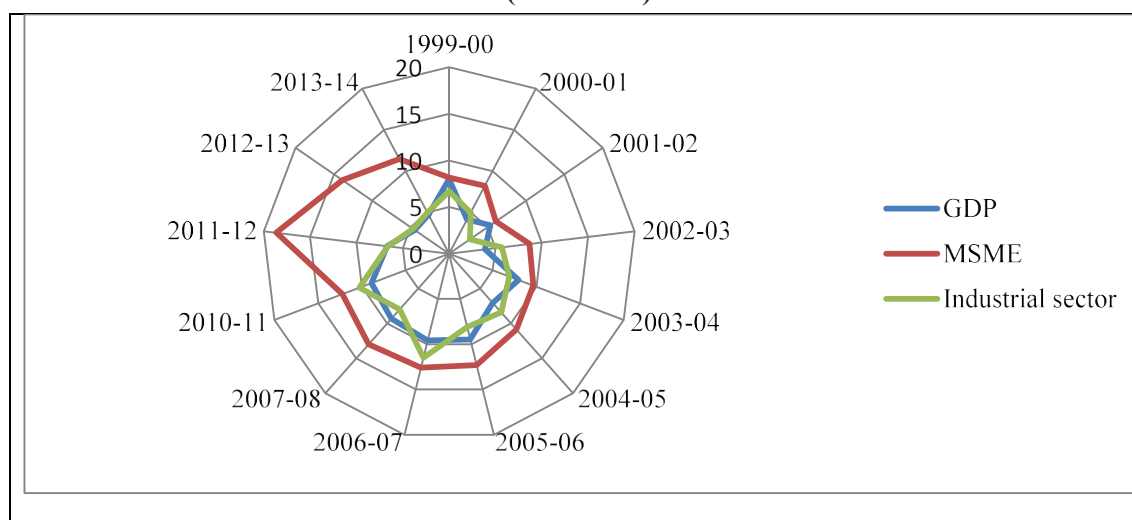
Categories	Manufacturing	Services
Micro	≤ 50 lakh	≤ 20 lakh
Small	>50 lakh and ≤ 10 crore	>20 lakh and ≤ 5 crore
Medium	>10 crore and ≤ 30 crore	>5 crore and ≤ 15 crore

Source: MSME, GOI

Due to new definition of MSME many SMEs comes under SME banking which were not accessible to bank for financing before and as result sales of the MSMEs increases than before.

IT and ITES is mainly developed in India since 2000-2001. Below in Figure-1 GDP growth, MSME production and overall industrial sector growth rate for India is shown. The Figure-1 extracts many serious implications like after 2000 onwards MSME growth rate is much higher than both GDP and overall industrial growth rate of India. Further interesting observation to make that during great recession period MSME growth of India is not affected like other two variables.

Figure 1: Radar Graph of GDP, MSME Production and Industrial Growth Rate of India (1999-2014)



Source: MSME & Planning commission of India, GOI

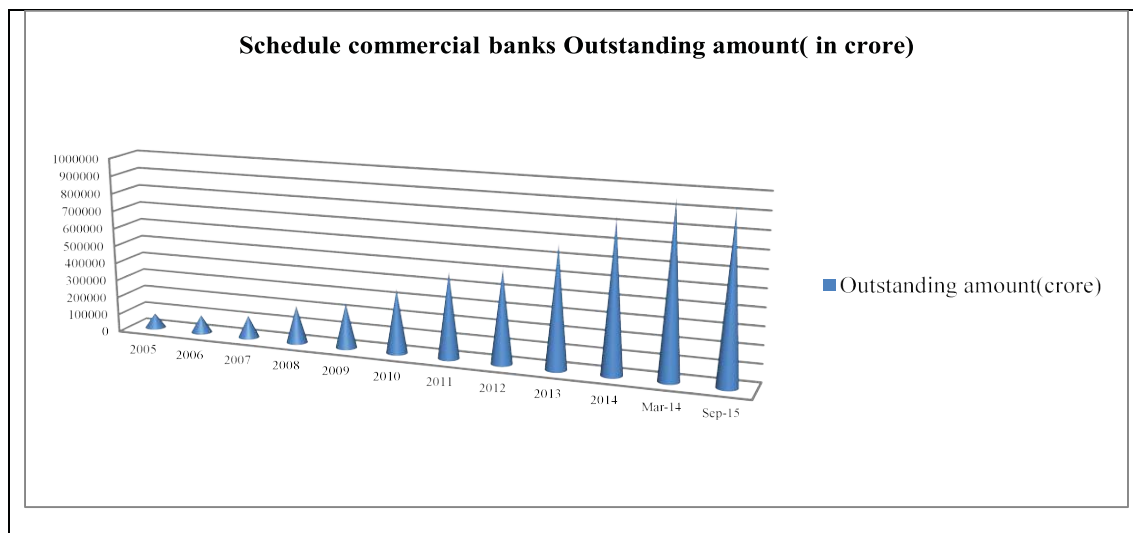
² Investment in plant and machineries

³ Investment in auxiliary equipment

SME Finance Overview of Banks Operating In India

Figure-2 below shows the MSME outstanding credit amount of all schedule commercial banks together from 2005 to 2015. Every year since 2005 the amount of outstanding amount of SME lending increase up to 2014 for all scheduled commercial banks operating in India. Though the performance of the foreign banks are comparatively better than Indian banks as they follow more strict rules in approving loans and their clients are mostly big MSMEs. But from 2015 the outstanding credit amount of SME credit is decreases due to government policies and others.

Figure 2: MSME loan Outstanding for Scheduled Commercial Banks in India (2005-2015)



Source: MSME, GOI

The above Figure-2 implies that access to finance for SME clients is not the only problem but sickness of SMEs make them unable to repay the bank credit. In such case ICT can play a great role to improve both banks and SME client's performance by several ways. Hence, it is important for both banks and SME clients to use the ICT infrastructure for maximum gain. In the next few paragraphs study going to discuss about how IT and ITES can help both SME clients and banks.

How IT Can Ease SME Financing Problems

This section of the paper discusses about the avenues by which IT and ITES can ease SME financing problems prevailing in the emerging nations.

E-commerce

Since last one decade E-commerce was booming in India and major players were flip kart, amazon, snap deal etc. These e-commerce sites had millions and millions of vendors and sellers registered with them. This e-commerce site has datasets for millions of transactions data of their registered vendors and sellers.

"Access to capital is an issue in India and via RupeePower, we can address that. Before the acquisition as well, about Rs 1,500 crore in loans have been disbursed and there is a huge opportunity in this market," said Kunal Bahl, founder and chief executive at Snapdeal.-Bussines Standard 22nd April, 2015.

As a result bank and other financial institutions had enough data with them from these e commerce sites to provide collateral free loans to the well performed small business. From these e-commerce sites both banks and small business benefitted. Banks had access to the history of the small business and small business can directly sell their products directly through the online platform using these e-commerce sites.

“Indian e-commerce platforms help sellers get easy loans to aid growth”⁴ - Business Standard (10th December, 2015)

Several financial institutions and banks like State Bank of India, Axis bank, ICICI bank, Tata Capital, IIFL, ICICI Bank, HDFC Bank, RBL Bank, L&T Finance, Reliance Capital and many others tied up with this e-commerce site to extend credit facilities to the small and medium size business.

“Axis Bank ties up with Snapdeal to provide collateral free loans”⁵ - Livemint (7th October, 2015)

“SBI partners with Snapdeal to offer loans to e-commerce players”⁶ - Press Trust of India (16th January, 2016)

“Flipkart partners with SMEcorner to facilitate loans for its sellers”⁷ - IOS (25th November, 2014)

“Amazon to offer loans to sellers in India and seven other countries”⁸ -Medianama (30th June, 2015)

Fintech Company

Technology has changed the overall environment in every industry; it fuelled the growth of alternative credits too and made both parties got benefitted from it. Lender benefitted from the higher returns and borrowers benefitted from the cheaper, convenient and faster loan approval than commercial banks.

“Private investors are continuing to flow hundreds of millions of dollars into alternative-lending start-ups at valuations of more than \$1 billion.” - Money of future⁹.

Fintech Company was helping SMEs by several ways. By “Peer to peer lending” process, these companies used to connect lenders with the SMEs. Online platform “Funding club” was provided by these companies where SMEs has to register with their loan requirements detail along with their business details. Fintech Company was using high end analytics to analyse the business details of SMEs and based on the analysis SME credit worthiness was rated and accordingly interest rate determined. Qualified SMEs usually offered credit in no time with very low interest rates almost 3-4 times lesser than traditional banks. Heavy technological usage made the overall transaction cheap that made cost of borrowing cheaper.

“Fintech: A Source of Financing for the Small to Medium Sized Enterprise Which May Mean Less Customer Push for Supplier Terms Pushback” - Credit Today¹⁰

“Fintech firms expand bouquet of offerings” -LiveMint¹¹ (6th March, 2017)

Fintech Company was providing credit backed by the value of unpaid invoices; loyalty capital to SMEs and several SMEs were benefitted from it those who were out from the scope of traditional bank finance. Overall Fintech Company was helping both lenders and borrows by providing them with variety of new financing options.

“FundsTiger.com Launches First 'Loan ChatBOT' in India for Business and Retail Loans” -The Telegraph¹² (18th January, 2017)

⁴<http://www.business-standard.com/article/companies/indian-e-commerce-platforms-help-sellers-get-easy-loans-to-aid-growth-1151209010071.html>

⁵<http://www.livemint.com/Industry/jQKDcKeuYBJStXlLK7khI/Axis-Bank-ties-up-with-Snapdeal-to-provide-collateral-free-l.html>

⁶<https://yourstory.com/2016/01/sbi-snapdeal-e-commerce-loan/>

⁷<http://indianonlineseller.com/2014/11/flipkart-partners-with-smecorner-to-facilitate-loans-for-its-sellers/>

⁸<http://www.medianama.com/2015/06/223-amazon-loan-programme-india/>

⁹http://lifesreda.com/MoneyOfTheFuture_2016_eng.pdf

¹⁰ Accessed on 27th April, 2017 <https://www.credittoday.net/public/Fintech-A-Source-of-Financing-for-the-Small-to-Medium-Sized-Enterprise-Which-May-Mean-Less-Customer-Push-for-Supplier-Terms-Pushback.cfm>

¹¹<http://www.livemint.com/Money/pKNc3Iu4zqXlkiCU6tGX6M/Fintech-firms-expand-bouquet-of-offerings.html>

¹²<https://www.telegraphindia.com/pressrelease/prnw/51549/fundstiger-com-launches-first-loan-chatbot-in-india-for-busi.html>

“How Indifi Technologies helps you in getting small loan”- Indian Express¹³ (24th May, 2016)
For liability side of the MSME Fintech companies can help banks in providing merchant banking, trade financing etc. Recently in India Bank of Baroda ties up with the 7 major Fintech companies to extend MSME financing.

Niche Banks

Recently after a long gap Reserve Bank of India approved banking license to 2 universal banks & 21 niche banks¹⁴. Niche banks were introduced for special purpose that includes payment banks, small finance banks. SME clients that were rejected by the big banks were considered for credits by niche banks. Here, the risk associated with niche banks were more than traditional banks as they did not ask for 100 percent collaterals. These kind of banks mainly looked into the financial strength of the SMEs and business growth for extending their financial support. Start-ups with sound business plan and fair cash flows were going to be benefitted from the niche banks as it has various types of customized products as per client requirements.

“Karur Vysya aims to emerge as niche SME bank, customise products for the sector”- Business line¹⁵ (6th September, 2016)

Similar to Fintech Company's heavy technological usage made the overall transaction cheap that made cost of borrowing cheaper.

Primary Agricultural Credit Societies (PACS)

PACS formed the base of the three tier co-operative system in India and it has a share of 97 percent of the total number of co-operative banks operated in India. PACS operated at the very ground level and was serving to the poorest of poor. More than 90 percent of the agricultural loans (Moinak *et al.*, 2015)¹⁶ distributed through PACS alone and was building rural India. Other than agricultural loans other short term and long term loans was provided by the PACS.

PACS were playing a crucial role to achieve financial inclusion (Moinak, 2014)¹⁷, poorest of the poor was got benefitted from it. Interest rates charged by PACS were quite lower than banks and other upper tier co-operative banks. Small business like cobbler, potters, land less farmers and other rural artists/ populations benefitted heavily from PACS as they did not have access to the bank finance. PACS has the potential to become the vehicle for rural India development. PACS lacked in technological development and still dependent heavily on manual work biggest drawback of PACS. Implementation of IT can increase its productivity and operations cost.

Crowd Funding

Crowd funding was emerging as a new frontier for SME finance other than the traditional bank finance.

“Crowd sourced funding is a means of raising money for a creative project (for instance, music, film, book publication), a benevolent or public-interest cause (for instance, a community based social or co-operative initiative) or a business venture, through small financial contributions from persons who may number in the hundreds. Those contributions are sought through an online crowd-funding platform while the offer may also be promoted through social media”-SEBI Report.

¹³<http://www.financialexpress.com/industry/banking-finance/how-indifi-technologies-helps-you-in-getting-small-loan/264668/>

¹⁴http://www.business-standard.com/article/finance/23-new-banking-licences-granted-under-raghuram-rajan-115091800010_1.html

¹⁵<http://www.thehindubusinessline.com/money-and-banking/karur-vysya-aims-to-emerge-as-niche-sme-bank-customise-products-for-the-sector/article9077239.ece>

¹⁶Maiti, Moinak, and S. S. Muthu. "Financial Viability of the PACS: DSKUS Ltd." *Asian Journal of Research in Banking and Finance* 5, no. 1 (2015): 175-185.

¹⁷Maiti, Moinak, Role of P.A.C.S in Financial Inclusion and Controlling Price Inflation of Commodities (October 1, 2014). *Research Journal of Management Sciences*, Vol. 3(10), 1-4, October (2014). Available at SSRN: <https://ssrn.com/abstract=2885387>

It aimed at forming of funds for capital, project or a goal from a large crowd. The main sources of funds were from households generally from their savings, thus the sizes of funds were small but received from large number of people. The funds were generally raised via electronic media especially through websites which primarily undertook crowd funding. In contrast to the regular finance, crowd-funding was allowing the entrepreneur to exhibit innovative, entrepreneurial ideas and ventured to investors through an online web-based platform directly with investors.

*"Not angel or VC, its crowd funding for innovative start-ups"*¹⁸ - Economic Times (13th December, 2016)

*"Crowd funding going through transformation in India"*¹⁹ - The Hindu (22nd September, 2016)

In India currently there was no regulation to govern crowd-funding, The Securities and Exchange Board of India (SEBI) released a consultation paper in 2014 that proposed a framework initiative for crowd-funding by providing start-ups and Micro Small and Medium enterprises access to the capital markets and to provide an alternate source of funding.

*"Crowd control: SEBI warning turns off crowd funding tap for start-ups"*²⁰ - Economics Times (9th September, 2016)

Crowd-funding has been successfully conducted in many developed countries like financial return crowd-funding market is worth over \$1 billion in the USA, the UK and China, and was taking off in many other jurisdictions across the world. The US, UK and China made up 96 percent of global share, US market accounts for 51 percent of the global market, with China was making up just over a quarter at 28 percent, and the UK just behind at 17 percent. Crowd funding comparatively was very new to India than developed countries and was growing presently.

*"PRJA raising money through crowd funding to fight polls"*²¹ - Economic Times (18th February, 2017)

*"Xiaomi to bring crowd funding platform to India"*²² - Economic Times (22nd September, 2016)

Conclusion

Indian MSME sector is very attractive sector and limited access to the finance makes its growth retarded. Several problems like incomplete information about the SME clients, high operation cost of banks, low profitability of SMEs, Sickness and other reasons makes bank SME credit difficult. As a result of which there lies a huge gap between the demand of SME credit and access of finance to SME clients. It clearly indicates that there is a high scope for banks to gain high revenue from SME banking business but due to several problems as discussed in the paper SME finance becomes difficult for banks. In such scenario the study shows how IT can play a major role to ease the problem of SME lending for both banks and SME clients. Study broadly discussed about how IT applications through crowd funding, Fintech companies, niche banks and PACS banks can extend their SME credits. Study finds application of IT in operations reduces operation cost highly, provides much transparency, information symmetry and overall efficiency for SME credit by the banks. The study findings are useful for policy makers, bankers and decision maker of other emerging nations.

¹⁸<http://economictimes.indiatimes.com/small-biz/money/not-angel-or-vc-its-crowdfunding-for-innovative-startups/articleshow/55952761.cms>

¹⁹<http://www.thehindu.com/news/cities/Coimbatore/%E2%80%98Crowdfunding-going-through-transformation-in-India%E2%80%99/article13987040.ece>

²⁰<http://economictimes.indiatimes.com/small-biz/money/crowd-control-sebi-warning-turns-off-crowdfunding-tap-for-startups/articleshow/54202702.cms>

²¹<http://economictimes.indiatimes.com/news/politics-and-nation/prja-raising-money-through-crowdfunding-to-fight-polls/articleshow/57220562.cms>

²²<http://economictimes.indiatimes.com/small-biz/money/xiaomi-to-bring-crowdfunding-platform-to-india/articleshow/54443767.cms>

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Potentials and Challenges of Agent Banking in Bangladesh

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Introduction

Agent banking services is one of the new dimension of banking services which are provided through engaged agents under a valid agency agreement, service agreement or a similar agreement. An agent is the owner of an outlet or branch who conducts banking transactions on behalf of a structural bank. These retailers globally square measure being progressively used as necessary distribution channels for financial inclusion. It offers an alternative to conventional branch based banking to the customers through appointed agents instead of bank branches or through bank employees.

Agent banking is comparatively a new idea that can help the formal banking sector reach out to the marginalized people of the society through their agents, who will provide several banking services to the people locally. Moreover, agents will be appointed in such areas where it will not be feasible for a bank to open a full-fledged branch. Agents will provide banking services to the people on behalf of a bank and the nearest branch of the bank will provide necessary logistic support including ICT support.

The agent banking model is one in which banks provide financial services through nonbank agents, such as educated individuals, chain grocery stores, retail outlets, post offices, pharmacies or NGOs. This model allows banks to expand services into areas where they do not have sufficient incentive or capacity to establish a formal branch, which is particularly true in rural and poor areas where maximum people are unbanked.

As part of financial inclusion and offering limited banking services to both rural and urban unbanked people, Bangladesh Bank (BB) has initiated Agent banking services in 2013. At present 13 Private Commercial Banks are providing Agent Banking Services in Bangladesh, although 18 of the Banks have availed necessary permission they are- Dutch-Bangla Bank, Bank Asia, Al-Arafah Islami Bank, Social Islami Bank, Modhumoti Bank, Mutual Trust Bank, NRB Commercial Bank, Standard Bank, Agrani Bank, Midland Bank, First Security Islami Bank, The City Bank and Islami Bank Bangladesh Limited.

During last few years Agent banking has gained tremendous progress in several developing countries in different parts of the world like Brazil, Columbia, Peru, Malaysia, Kenya and so on. Agent banking has been a revolutionary inclusion in the financial system of Brazil as the agents are dealing with almost everything like bills and pension payments, cash deposits, withdrawals and money transfer. The list is not limited to these only, because the number of services provided by the agent bankers is increasing with the passage of time. Brazil is often recognized as a global pioneer

in this area and over the years, it has developed a wide network of agent banks covering more than 44 percent of the country's municipalities. In Asia, countries like India, Pakistan and Philippines have also utilized the agent banking model to expand financial services. Agent banking activities are being increasingly utilized as important distribution channels for financial inclusion all over the world.

Central Bank of Bangladesh has also decided to promote this potential channel to reach the poor segment of the society as well as existing bank customer with a range of financial services especially to geographically dispersed locations. With a view to ensuring the safety, security and soundness of the proposed delivery channel Agent Banking guidelines have been framed by the Bangladesh Bank to permit banks to be engaged in agent banking. To promote and establish the agent banking, Bangladesh Bank provides regulatory framework for agent banking and ensures compliance with Anti-money Laundering & Combating finance of Terrorism.

Objectives

The objective of the study is to identify the potentials and issues of agent banking in Bangladesh and point out recommendations & suggestions to operate the agent banking activities in an efficient manner. In addition, this study helps :

- To assess the nature of agent banking activities practiced by the financial institutions in Bangladesh.
- To identify the ways to explore agent banking in Bangladesh.
- Discover the shortcomings that may be considered as barriers to operate the agent banking activities efficiently in Bangladesh.
- To put forward some specific suggestions and recommendation to ensure reliable & comprehensive agent banking services in Bangladesh.

Rationale of the study

There is no comprehensive study on status of banks of Bangladesh in their agent banking activities and their compliance with the BB's Agent Banking Guideline. The study will assist to meet this particular gap and identify where there are scopes of improvement. In the study, it is expected that it would help bank's policy makers in identifying the key challenges involved in agent banking operations and coming up with strategies that will lead to improve the performance of banking activities in Bangladesh. The study will also be helpful to academics who will use this study as a source of reference. Moreover, the findings of this study will assist to take strategies to perform better in banking sector. Virtually, the study will help the banks in identifying and understanding the external environment and competitive strategy that can be applied to ensure the superior performance of the banks in Bangladesh.

Methodology

An appropriate methodology is the systematic and logical way to achieve the ultimate goals and the objects of the study. The paper is mainly based on the data collected and analyzed from secondary sources including internet, websites, magazines, newspapers, journals, books, articles. Besides, a few primary data collected from bank officials, agents and regulatory bodies. The data collected from these sources are critically analyzed, reviewed and finally inferences are made based upon these.

Limitations of the Study

The major limitations of the research are as follows :

- The research reached 10 Agent points under 4 districts of Bangladesh and was not intended to be nationally representative. Also, it covered the main Agent points in each targeted Banks as well as some new Banks. Due to limited time and resources, the research was conducted only among the selected Agents.
- Site visits also allowed limited access to reach research respondents either due to remote locations or time constraints of the respondents. In some cases, some targeted

respondents refused to participate in the survey and/or answered limited questions. Therefore, a few errors were found in data processing and analysis as well.

- The research could have fully explored several aspects related to Bank's services, that respondents have accounts with or use, their relationship with agents, their satisfaction with the agents and different aspects of their services.

Literature Review

The authors reviewed different literature relating to different aspect of Agent Banking in general.

Kitaka

Kitaka, P. (2001) indicates that the cost and revenue estimation is done on a per account basis for transactional accounts, commitment savings accounts, reverse commitment accounts, and time deposits. It focuses on the costs and revenues incurred by the financial agent bank associated with account opening, financial margin, and transactions for low-cost accounts. The revenue assumptions are based on a view that financial agent banks can and should charge for withdrawals and transfers through agent channels. Although some institutions in the sample do not, we contend that this may be counterproductive when reaching new low-income markets where entrepreneurs have a higher willingness to pay for nearby transaction services and where the financial margin earned on lower-balance accounts was insufficient to cover the cost of maintaining that account. We believe that clients will transact more with greater proximity to agent outlets.

Agent banking pave the way to a significant opportunity to reduce transaction costs such as travel for clients by bringing financial services to hard-to-reach and geographically dispersed areas. Banks and other financial institutions often do not have sufficient incentive or capacity to establish formal branches in these areas. The set-up of agent banks is less costly and more flexible than traditional bank branches.

Podpiera

Podpiera, J (2008) signifies that Agent banking does improve the economics for these institutions compared with branches, especially for high-transaction, low-balance accounts that are common among poor users. The analysis focuses on four types of agent banking delivery channels: POS-enabled bank agent; this is an agent managed by a bank that uses a payment card to identify entrepreneurs. Banking agent-enabled agent. This is an agent managed by a bank that uses a cell phone to identify entrepreneurs. This is an agent that is often managed by a telecom, uses a cell phone to identify entrepreneurs, and provides store-of-value accounts called bank electronic monetary value. For this analysis, we consider them a store of value account that provides a useful comparison for a savings account directly provided by a financial institution. Bank-provided account linked to a bank wallet. This is a bank account that is linked to a bank wallet.

Dondo

Dondo (2003) indicates that Agent Banking is not new in the world. It has been used very well in Latin America and Asia. There are few African countries that have taken up Agent banking. The Agent banking in Kenya guidelines were enacted in 2010. Banks must first apply to central bank of Kenya to get approval to conduct Agent banking business. The board of directors of each banking institution interested in Agent banking must make policies guidelines and procedures to be followed one of the primary impediments to providing financial services to the poor through branches and other bank-based delivery channels is the high costs inherent in these traditional banking methods. The amount of money spent by financial agent banks to serve a poor customer with a small balance and conducting small transactions is not easy to make such accounts profitable.

Adera

According to Adera, A. (1995) in addition, when financial agent banks do not have branches that are close to the customer, the customer is less likely to use and transact with their service. However,

the emergence of new delivery models is a way to drastically change the economics of banking for the poor. By using retail points as agent banking other providers can offer saving services in a commercially viable way by reducing fixed costs and encouraging entrepreneurs to use the service more often, thereby providing access to extra income.

Atieno

Atieno (2001) specified that a banking agent is a retail or postal outlet contracted by a financial institution or a bank network operator to process client's transactions. It is the owner or an employee of the retail outlet who conducts the transaction and lets client's deposit, withdraw, and transfer funds, pay their bills, inquire about an account balance, or receive government benefits or a direct deposit from their employer. Banking agents can be pharmacies, supermarkets, convenience stores, lottery outlets, post offices, and many more. Globally, these retailers and post offices are increasingly utilized as important distribution channels for financial institutions. The points of service range from post offices in the Outback of Australia where clients from all banks can conduct their transactions, to rural France where the bank Credit Agricole uses corner stores to provide financial services, to small lottery outlets in Brazil at which clients can access their bank accounts and receive their social payments from the government and other authorities.

Mokogi

Mokogi (2003) Agents are usually equipped with a combination of point of sale card reader, banking agent, barcode scanner to scan bills for bill payment transactions. Clients that transact at the agent use their banking agent to access their bank account or e-wallet respectively. Identification of entrepreneurs is normally done through a PIN, but could also involve biometrics. With regard to the transaction verification, authorization, and settlement platform, banking agents are similar to any other remote bank channel. Local regulation will determine if financial institutions are allowed to work through retail outlets. Regulators generally determine what kind of, if any, financial institutions are permitted to contract banking agents, what products can be offered at the retail outlets, how financial institutions are to handle cash movement.

Christopher

According to Christopher, (2002) Banking agents help financial institutions to divert existing entrepreneurs from crowded branches providing a complementary, often more convenient channel. Other financial institutions, especially in developing markets, use agents to reach an additional client segment or geography. Reaching poor clients in rural areas is often prohibitively expensive for financial institutions since transaction numbers and volumes do not cover the cost of a branch. In such environments banking agents that piggy back on existing retail infrastructure and lower set up and running cost can play a vital role in offering many low-income people their first-time access to a range of financial services. Also, low-income clients often feel more comfortable banking at their local store than walking towards a decorated bank branch.

Gardner and Cooperman

According to Gardner and Cooperman E.S (2000) agent banking incurs higher variable costs from commissions to agents and communications, fixed costs per transaction for branches are significantly higher. Setting up an agent costs 2 percent to 4 percent of the cost of a branch cashier. So even when functioning at maximum capacity, a branch cashier incurs more than 78 cents in fixed costs per transaction, compared to just 11 cents for a POS enabled agent and 4 cents or less for a bank-enabled agent or bank wallet. Moreover, acquisition costs are lower for bank-enabled agents and bank wallets.

Kasekende

According to Kasekende, A.L, (2008) refers that in various countries where models have been successfully implemented, regulators and supervisors have addressed the potential risks of using a large number of agents to deliver financial services by adopting a risk-based approach to supervision where agents are supervised indirectly and banks must assume full responsibility for

their agents Regulation enabling agent banking allows for sufficient business incentives for both agents and financial institutions to increase outreach by delivering financial services based on agents network.

Atman

According to Atman, E. (1993) to acquire loyalty, a product or service must be beyond achieving visibility and differentiation. It should instead develop deep relationships with the entrepreneurs to a point where the brand becomes a meaningful part of the customer's life and or self-concept and when this occurs the customer becomes highly loyal. Thus, brand loyalty is at the core of relationship banking, which goes beyond traditional banking and focuses more on creating a pool of committed, profitable entrepreneurs. A successful brand aims to develop high quality relationship in which entrepreneurs feel a sense of commitment and belongingness while relationship banking expects developing durable entrepreneurship.

Conceptual Framework and Global Approach

The Global Findex conducted a survey in 2015, wherein found that 46.4 percent of total adults have bank accounts at formal financial institutions which were 33 percent in 2011. The number is higher in Sub-Saharan and Middle East region. In the region, 42 percent of adults with an account made no deposits or withdrawals in the past year, compared to 15 percent of adults with an account globally. The Survey shows that 625 million of the world's unbanked people live in south Asia. Moreover, it is found that there are huge opportunities to expand financial inclusion among women. In 2011, 24 percent of women have an account at formal financial institution compared to 37 percent in 2014. The gender gap in developing economies remains unchanged from 2011 at 9 percent points (World Bank, 2015).

For filling up the gap of financial inclusion Agent Banking is performing outstanding role throughout the world. Many countries i.e. Colombia, Brazil, Peru, Kenya, India have already adopted agent banking as an effective means of financial inclusion.

Our neighboring country India applied both bank based and nonbank based agent banking model. Despite several attempts by the Reserve Bank of India to amend the regulations to try to encourage greater commitment by banks, agent banking has had limited impact to financial inclusion in India. In March 2011, there were 58,351 agents in India of which 94 percent were in rural areas. An average of 8.4 deposits and 3.1 withdrawals were carried out by individual FINO (a technology firm and one of the first pioneers of agent banking in India) agents each day in 2010. So, with 10,000 agents nationwide, approximately 84,000 deposits and 31,000 withdrawals are carried out per day. The average deposit size was Rs. 175 (US\$3.50) and the average withdrawal size was Rs. 368 (US\$7.39) per agent. So, approximately Rs 15 million (US\$301,000) worth of deposits and Rs. 11 million (US\$221,000) of withdrawals are being processed per day.

Western South American country Peru applies bank-based agent banking model. As on December 2010, the total numbers of agents were 9,204 of which mainly are grocery stores, pharmacies, retail outlets etc. In Peru, agents carry out approximately 45 million transactions per year. In 2010, ATMs and POS terminals accounted for 36 percent of total transactions while less than 50 percent of the total financial system transactions were conducted through traditional bank branches.

One of the most emerging country of Africa Kenya apply mainly the nonbank based agent banking model which are specially lunched by Mobile Network Operators (MNO). M-PESA was the first such model which is also famous worldwide. This service was launched in 2007 and by April 2011 had more than 14 million users and 27,988 agent outlets (Safaricom, 2011). In Kenya, MNOs' combined total transactions through mobile payments amounted to Ksh 2.45 billion (US\$24 million) per day (CBK, 2011). There are also bank-based agents operate in Kenya i.e. grocery stores, hotels, supermarkets, pharmacies and telecommunications companies. In 2010, total numbers of bank based agents were around 6,000

Another performer of South America Colombia apply only bank-based agent banking as nonbank-based agents are not allowed under the current regulations (EFInA, 2011). According to the Financial Inclusion Report 2013 by Banca De las Oportunidades (BDO), 62 percent of total population had access to formal financial services in Colombia as at August 2011. Around 78 million transactions were made through agents from June 2007 to July 2011 which total values were approximately 15 billion pesos. Total number of agents in Colombia increased more than twice in 2011 and it became 13,296 in the end of July whereas the number was 6,104 in January. Among them 78 percent agents were operating in urban areas and rest 22 percent in rural areas.

In Colombia, from August 2010 to July 2011, collections (of utility bill payments) have made up the majority of transactions (around 1.8 million in July 2011), followed by mandatory payments, such as loan repayments and official government payments, such as tax (over 800,000 in July 2011). Usually there have been more withdrawals than deposits, but the numbers of these two transaction types are consistently close. The numbers of credit applications, money transfers and opening of savings accounts are negligible. In terms of the value of transactions, deposits and withdrawals constitute the two highest transaction types (both were around US\$180,000 in July 2011), followed by mandatory payments and collections. Money transfers had the lowest value having monthly average amount of US\$20,000.

Among the all performers Brazil has the largest agent network in the globe having more than 140,000 agents, of which 47,000 are authorized to handle deposits and open accounts (CGAP, Feb. 2010). Most agents include post offices, grocery stores and other retail outlets. Brazil follows bank-based agent banking model but recently nonbank-based agent banking has just started to emerge (EFInA, 2011). In Brazil, banks operate 71,000 deposit-handling agents in every municipality of the country (Jayo, 2010). According to CGAP research from 2007 (Siedek), at least 75 percent of Brazilians use branchless banking agents, compared to 43 percent who have a bank account. Brazilian agents handle yearly 2.4 billion transactions.

In 2008, agents transacted 75 percent of the volume (agents made 1.6 billion transactions) and 70 percent of the value (agents transacted a total of US\$105 billion) of total bill payments in Brazil (CGAP & FGV, 2010). Rural agents transact more deposits and withdrawals as a percentage of total transactions i.e. 38 percent than their urban counterparts 8 percent (CGAP & FGV, 2010). Although permitted to offer several types of services, less than 30 percent of agents actually handle bank accounts. Most specialize in receiving bill payments, which account for approximately 75 percent of all agent transactions (47 percent of which are utility bill payments). Withdrawals and deposits account for 12.6 percent and are nearly equally divided into savings and current accounts (including simplified accounts). According to CGAP only 0.16 percent of transactions are account opening and 7.3 percent are government transfers.

Initiatives of Central Bank of Bangladesh

Bangladesh Bank has taken several initiatives to promote the Agent Banking channel to reach the under privileged segment of the society as well as existing bank customer with a wide range of financial services especially to geographically dispersed locations.

Central Bank has additionally determined to push this complimentary channel to achieve to the poor phase of the society additionally as existing bank client with a variety of monetary services particularly to geographically spread locations. With an intention to ensure safety, security and soundness of the planned delivery channel Agent Banking pointers are framed by Bangladesh Bank to allow banks to be engaged in agent banking.

With a view to ensuring safety, security and soundness of Agent Banking, Guidelines have been framed by the Bangladesh Bank to permit banks to be engaged in agent banking.

Services covered under Agent Banking

According to Bangladesh Bank guideline the agents are allowed to provide following services on behalf of the Bank:

- Processing of all types of Account opening
- Processing of Small Value Investment proposal
- Deposit
- Withdraw
- Fund transfer
- Balance inquiry
- Inward Foreign Remittance disbursement
- Utility Bill Payment
- Social Safety Net Cash Payment
- Insurance Premium collection
- Debit and Credit Card paper processing
- Agricultural and Rural Investment appraisal receive, primarily processing, disbursement and recovery.
- Facilitating small value loan disbursement and recovery of loans, installments
- Recovery of accounts, cards, loans, installments to customers
- Cash payment under the Government social safety net program
- Collection and processing of forms/ documents in relation to account opening, loan application, credit and debit card application from public
- Post sanction monitoring of loans and advances and follow up of loan recovery. Receiving of clearing and issuing cheque.
- Anyone can collect information about opening of bank account from the agents and apply for loans and credit or debit cards through them
- Other functions like collection of insurance premium including micro insurance etc.

Prohibited services

According to Bangladesh Bank guideline the agents are not allowed to provide some services on behalf of the banks. Such as-

- Carrying out transaction while communication disconnected with the Bank.
- Carrying out a transaction where a receipt cannot be generated.
- Charging the customer any unapproved fees.
- Giving any guarantee.
- Offering banking services on its own accord.
- Providing services beyond the contract.
- Encashment of cheques.
- Foreign currency transaction.
- Providing cash advances.
- Sub-contract to another entity.
- Giving final approval of opening of bank accounts
- Giving final approval of issuance of bank cards/ cheques

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- Foreign currency transaction.

- Providing cash advances.
- Sub-contract to another entity.
- Giving final approval of opening of bank accounts
- Giving final approval of issuance of bank cards/ cheques

Eligibility for Agency

According to Bangladesh Bank guideline the Banks may engage the following persons/ entities as their Agent:

- NGO, MFI's ;
- Other registered NGOs;
- Cooperative Societies;
- Post Offices;
- Courier and Mailing Service Companies;
- Companies registered under 'The Companies Act, 1994';
- Agents of Mobile Network Operators;
- Offices of rural and urban local Government institutions;
- Union Information and Service Centre (UISC);
- Educated Individuals capable to handle IT based financial services, agents of insurance companies, owners of pharmacies, chain shops and petrol pumps/ gas stations.

Qualifications of an Agent:

- Agent must have a permanent residence and authorization.
- Must have enough guidelines and knowledge for conducting Agent banking.
- Agent should be financially self-dependent & have the ability to transact in cash.
- Ability to meet commitment to customer.
- Agent should have the knowledge and ability to handle financial services and relevant technologies.
- Must be able to preserve all transaction records for internal audit with proper security.
- Agent cannot be engaged with any personal and unauthorized activities.
- Agent should have ability to perform the given responsibility accurately.
- Agent must be concerned about the reputation of the institution and its well-being.

Agent Banking Model

According to Bangladesh Bank guideline an agent can act as agent of more than one bank at a time but at the customer end point a retail outlet or sub agent of an agent shall represent and offer banking services only for a single bank. The written agreement between bank and the agent should be carefully defined and legally vetted. The agreement should also contain clauses related to confidentiality/ safety/ soundness and accuracy of all the transactions as well. Full financial disclosure, transparency and accountability of the agent must be ensured.

The bank shall assign one of its branches/offices to be responsible for the agent operating in the designated area of the branch. The agents will be equipped with IT device like Point of Sale (PoS) with biometric features capturing and reading facilities, card reader, mobile phone, barcode scanner to scan bills for bill payment transactions, Personal Identification Number (PIN) pads and may have Personal Computers (PCs) that are to be connected with their bank's server using a personal dialup or other data connections. Clients may use magnetic stripe bank card or mobile phone to access their bank account.

Identification of customers shall be done through a PIN/ bio-metrics. In the customer end the transaction should be operated through ICT devices that are continuously and uninterruptedly integrated to the systems developed by banks. The figures of the transactions must be reflected in 'Core Banking Solution' (CBS) of the bank. The transactions should be executed on real time basis. No transactions can be performed in case of communication failure. At the end point, the customer will get instant confirmation of their transaction on visual basis (screen based like SMS) and paper based (debit or credit slip) also.

The bank shall brand agent banking business in such a clear manner so that the customer can realize that the agent is providing services on behalf of the bank. The agent of the concerned bank should deposit a fixed amount of money or should have a credit limit with the bank and upto that level the agent can make transactions with the clients. If any transaction is tried beyond that level, system will automatically stop the transaction.

Applicable Charge for the Services

As per Bangladesh Bank guideline customers should not be charged directly by the agents for providing services to them. Bank shall pay reasonable fee/ commission to their agents. However, bank may charge commission/ fee/ charge as applicable to its customers.

Selection Criteria of Agent

According to Bangladesh Bank guideline Banks willing to launch Agent Banking Business shall formulate an agent banking policy addressing the policies related to agent selection, management, monitoring, operations, compliance, conduct and service quality; customer protection measures, including awareness and education strategies; infrastructure to support agent banking including system and technology requirements; controls and monitoring to ensure compliance with relevant legislation and regulatory requirements; and Business Continuity Plan (BCP) and contingency arrangements to ensure continuity of agent banking services in the event of disruption.

The Central Bank has also defined some criteria for selecting agents:

- Competence to implement and support the proposed activities;
- Financial soundness and cash handling capability;
- Ability to meet commitments under adverse conditions;
- Business reputation;
- Ability to offer technology based financial services;
- Security and internal control, audit coverage, reporting and monitoring capacity.
- Any loan defaulter or convicted person cannot apply for agent.

Clients Right

The concerned banks shall offer products and services approved by their Board keeping conformity with the guidelines. The agents should not introduce any financial product or service at their discretion. There should be clear identification/logo and name of the bank with contact address/telephone number displayed in a visible manner on the premises of the retail agents/ agent's service premises. The bank shall take necessary steps to ensure that the agents/retail agents/sub agents are known to the public in a specific area. The local branch manager may introduce the agent or sub agent to the public, their activities and limitations effectively. The charges and fees for offering the services to be published in the form of a brochure and be available in the outlets of the agents/ retailers or sub agents for client's use and information.

The controlling bank should take necessary steps for creating awareness among the customers (in local language) on agent banking which may contain the rights of the customers and safety measures to make transactions with agents.

The bank should devise a business continuity plan to ensure uninterrupted services to the customers in case of failure or termination of agents. After termination of a contract between bank and agent, bank shall issue a notice of the termination to be published within the locality where the agent was operating its business. When any agent works on behalf of more than one bank, it shall ensure that there are no amalgamations/ overlapping/ intermixing in the database of customers of different banks. Complaints may be lodged by the customers regarding agent banking to Customers' Interests Protection Centre (CIPC) of Bangladesh Bank.

Benefits of Agent Banking

For customer

- Cheapest means of accessing financial services
- Nearest service out-let
- Longer transaction hours
- Shorter queue compared to the branches
- More accessible for less educated, the very poor and less privileged people of the society
- Benefits of greater economic development to isolated communities

For Agent

- Self-employed
- Profitable business for long time
- Dignified job & glowing social status.
- Additional revenue from commissions and incentives

For Financial Institution

- Increased customer base and market share
- Widened coverage with low-cost solution in remote areas.
- Enhanced revenue from additional investment and charges
- Improved indirect branch productivity by reducing congestion

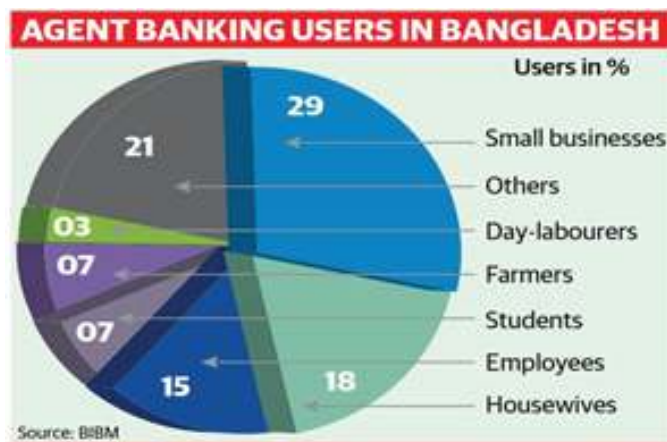
For the Government

- Facilitates financial inclusion
- Increase employment, income, savings, production
- Positive reflection in GDP.
- Facilitation of domestic remittances
- Rural economic development
- Paving the ways to achieve the SDGs

Agent banking scenario of Bangladesh

In Bangladesh, most of the Banks have set their agent banking target groups as the under-privileged, underserved population and the poor segment of the society, especially from geographically dispersed location.

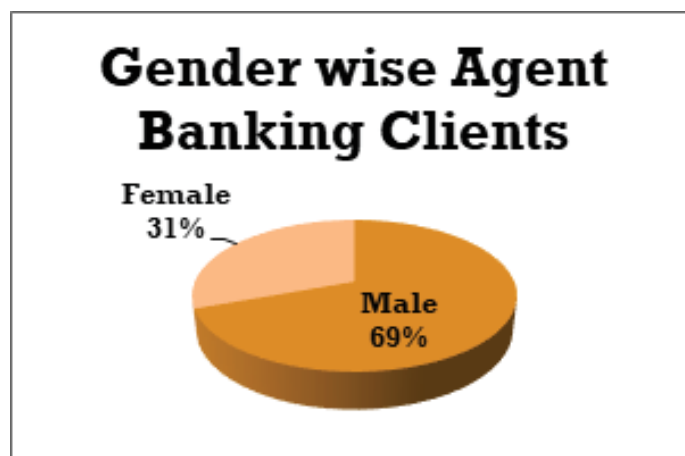
At present the number of Agent Banking accounts is 10,38,242. The users of agent banking are mostly in rural areas. A research shows that at present 82 percent users are in rural areas and 18 percent in urban areas of them 29 percent are small businesses while 18 percent housewives, 15 percent public and private employees, 7 percent farmers, 7 percent students and 3 percent are day laborers.



The report states that the agent banking is mostly popular in Dhaka as 24 percent of the users are residents of the Dhaka division while 18 percent of Chittagong. The smallest number of users is in Sylhet with 5 percent of the total agent banking account holders.

Gender wise Agent Banking

At present number of total Agent Banking account is 10,38,242, among them female clients number is 3,21,855 and male 7,16,387



Area wise Agent Banking

At present number of total Agent Banking account is 10,38,242, among them 9,24,035 are in rural areas and 1,14,207 are in urban areas.

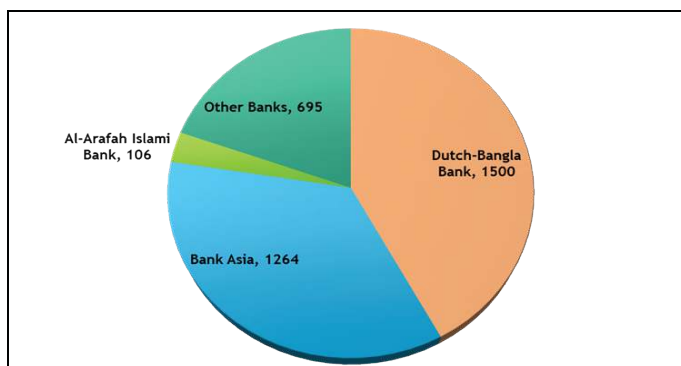


Bank-wise Agent Banking Network

At present 13 Commercial Banks are conducting Agent Banking activities in Bangladesh. There are 3,631 Agent outlets all over the country and total deposit is Tk.9220.80 million. Position of leading 3 Banks is as follows:

S.N.	Bank	No. of Outlet	No. of Client	Deposit (Million Tk.)	Loan Disbursed (Million Tk.)	F. Remittance Disbursed (% of Banks disbursement)
1.	Dutch-Bangla Bank	1500	682979	2,864.30	-	14 percent
2.	Bank Asia	1,264	2,37,278	1167.10	752.50	66 percent
3.	Al-Arafah Islami Bank	106	60542	210.00	34.60	19 percent

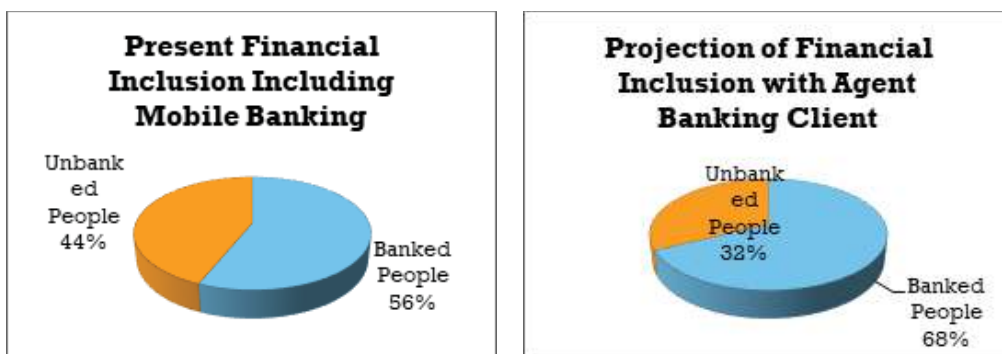
No. of Agent Banking Outlet



Prospects

Agent banking can be a replacement of branches in the remote part of the country. So, a promising prospect exists to convert the unbanked people into banked people through agent banking services.

- Agent banks are providing almost all services of a commercial bank, especially all kinds of deposit accounts such as savings, current, fixed, school banking etc., fund transfer from one account to another of the same bank and other banks through EFTN, foreign remittance payment, receipt of electricity bills, receipt of passport bills, micro and small loan processing, consumer loan processing, agricultural loan processing, debit card issuance etc. so it performs like a mini Branch of the Bank.
- Agent Banking is the most easiest channel to take the banking services to the unbanked. So, the Banks are interested to invest huge amount in agent banking sector.
- Agent banking is gaining tremendous momentum having popularity of the mass people, particularly among Bangladeshis living abroad, households, students, service holders and micro business holders because of its convenient and cost-effective nature.
- Banks prefer agent banking as it requires the least cost to provide financial services in remote areas.
- It is the new dimension for disbursement of Foreign Remittance as well. In Bangladesh, participating banks received Tk 262 crore from January to March 2017 through agent banking channel whereas the network brought home Tk 309 crore in 2016.
- Data shows that Bank Asia disbursed 66 percent of the total remittances channeled through agent banking during October-December 2016, while Al- Arafah secured second position with 19 percent and Dutch-Bangla stood third with 14 percent.
- Another study shows that there are 67 bank branches and ATMs per 1,000 square kilometers in Bangladesh. This reflects the fact that running any bank branch in a remote area is not very cost-effective. Setting up a formal banking branch involves a huge amount of fixed cost and a high monthly variable cost for maintaining it. But the number of transactions that take place in rural, remote or less densely-populated areas is not enough to make up for those costs. For this reason, Agent Banking services will be befitting to render their services in those areas.
- At present there are around 55 million formal bank accounts in the country. Including MFS, the total number of bank accounts now stand at around 90 million or over 56 percent of the total 160 million population. So still there are a large number of population unbanked.
- If we can cover all the Union under Agent Banking umbrella, financial inclusion can cover about 70 percent people of the country. There are 4,554 unions in Bangladesh and if an agent can open 4,000 accounts in each union, the number of new accounts will be 1,82,16,000 and total banked people will be 10,82,16,000.



- According to BBS-2017 adult people (18+ years) are 10,18,00,000 i.e. 63.63 percent of total population. By expanding the Agent Banking network up to Union level 100 percent financial inclusion will be possible in the country. That may take 5/7 years if a strategic plan is devised and implemented accordingly.

Challenges

- People's trust in the Bank, however it will be challenging to convince people that the agent will work in favour of the Bank and all their transactions will be considered as bank transaction.
- On banks' part, maintaining service quality, keeping compliant with the regulator, retaining agents in the business and business continuity in case of agent-exit are also major challenges.
- Technological support at the remote areas is a challenge at the present perspective of Bangladesh. It is difficult and costly to connect the agents with the main server of the Bank.
- Therefore, getting a summary of information of agent banking will be time consuming and accuracy of that information cannot be confirmed.
- Monitoring of agent activities may not be cost effective which will be a challenge for the Banks.
- It has been observed that Agent Banking outlets are much costly along with regular expenses. To run the outlet smoothly that might take enough time to come at a break-even point. At the beginning income from the centre may not be sufficient to maintain their regular cost. Moreover, salary of the staffs, space rent & other related expenses are seen to be higher than accrued income at the initial stage. So, without getting support from the controlling Banks it will be tough to exist in the business.
- Ensuring compliance of regulatory authorities will also be a challenge for the Banks.
- Security aspect will also pose challenge both for agent and the bank.

Findings

Key Success Factors for Agent Banking

Credibility: The agent has to be a trusted brand, or member of the community

Proximity: Agent networks have to be easily accessible by the customer

Consistency: Offer similar customer experience regardless of location

Security: Agents have to ensure prevention processes of all sorts of fraud.

Simplicity: Agents will explain the service, guide the user, and make the service simple and accessible.

Liquidity: Agents will have to ensure minimum liquidity levels.

Suggestions and Recommendations

Agent banking is getting momentum and is being adopted by remote consumers where a bank branch is unavailable. In order to promote Agent Banking the following suggestions and recommendations may be taken into consideration.

- Appropriate business module required.
- To overcome initial loss effective and required support of the Banks needed.
- Cost of furniture and fixture may be borne by the bank.
- SME loan and credit facilities for RMG workers may come under the scope of agent banking.
- Effective Training and lucrative incentive for agents is required to ensure quality service.
- Close supervision and monitoring of the agents are essential.
- Central Bank should ensure check & balance for expansion of the service. So that each & every areas can come under agent banking network.
- Effective agent network is imperative to the success of financial inclusion.
- To achieve the target of Vision 2021, efficient and inclusive financial system where savings and investment are required to be increased manifold.
- Agent banking can play a cardinal role to improve the socio-economic development of the nation in general.
- It can help to develop financial attitude & life style of the underprivileged people of remote areas of the country in particular.
- It can prove an effective tool for enhancing financial inclusion and materializing the dream of a poverty-free Bangladesh leading to meet Sustainable Development Goal (SDG).

Conclusion

In Bangladesh, the vision 2021 is premised on a safe, efficient and inclusive financial system where savings and investment are required to be increased manifold. The financial sector is expected to play a pivotal role in mobilizing the substantial resources required to finance the envisaged flagship projects. The government through the central bank has therefore been trying to explore and implement innovative models that will boost Bangladesh's financial sector to support savings and investment growth. Agent banking model is one of the most effective and timely initiative of Bangladesh Bank which can play a vital role to improve socio-economic development of the nation in general that will also help to develop financial attitude & life style of the underprivileged people of remote areas of the country in particular.

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As a values based bank, BRAC Bank chooses to invest in education and training that fuels strong, sustainable and balanced economic growth. Such is the nature of the partnership between the bank and Bangladesh Institute of Bank Management that will enable people to understand and engage in finance, as part of their mandate. BRAC Bank supports the expansion of financing opportunities for all, and going forward, we intend to scale up the development opportunities of knowledge and excellence in order to broaden the capabilities and economic prospects.

It gives us great pleasure for a second successive year to be a part of this publication that is passionate about driving the skills development agenda. It is a well thought out initiative undertaken by Bangladesh Institute of Bank Management (BIBM) to provide access to an extensive pool of knowledge on the Operations of banks in the context of Bangladesh. This guide delves into the details of the existing bank operations and management along with the relevant legal and regulatory aspects.

I am confident this document will bring a dramatic improvement in the management and operational quality of banking industry.



Selim R. F. Hussain
Managing Director & CEO
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