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Risk Management Practices in Bangladesh

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Abstract: *Risk management is at the heart of growth and development of the organizations through improving their performances. This is truer in case of banking industry in Bangladesh. The most significant factors influencing the productivity performance of the selected banks demand special attention of the bank authority. The measures of risk management as mention in the study should be of great concern for the bank management since they have positive impact on the bank profitability. Hence, the respective bank authority in particular should give due emphasis on risk management of the banks since they have direct influence on their profitability. The whole paper covered a number of important areas concerning risk management issues. The introductory section covered among others, the systemic importance of the risk management practices. An overview of the various concepts of risks and the industry standards of risk management techniques were discussed in section two along with the discussion of some of the unique risks. The perception of the commercial banks about various risks were surveyed through a questionnaire and analyzed in section four. In section five the emerging regulatory concerns with risk management have been discussed and some conclusions were drawn for some selected private commercial banks. In the present section we summarize the main conclusions of the paper.*
Key Wards: *Risk, Risk management, Risk Management Practices, profitability, private commercial banks.*

I. Introduction

Risk is an integral part of financial services. Risk arises when there is a possibility of more than one outcome and the ultimate outcome is unknown. Risk can be defined as the variability or volatility of unexpected outcomes. It is usually measured by the standard deviation of historic outcomes. Though all businesses face uncertainty, financial institutions face some special kinds of risks given their nature of activities.

For the purpose of these guidelines financial risk in banking organization is possibility that the outcome of an action or event could bring up adverse impacts. Such outcomes could either result in a direct loss of earnings /capital or may result in imposition of constraints on bank's ability to meet its business objectives. Such constraints pose a risk as these could hinder a bank's ability to conduct its ongoing business or to take benefit of opportunities to enhance its business.

Risks are usually defined by the adverse impact on profitability of several distinct sources of uncertainty. While the types and degree of risks an organization may be exposed to depend upon a number of factors such as its size, complexity business activities, volume etc.

Risk Management is a discipline at the core of every financial institution and encompasses all the activities that affect its risk profile. It involves identification, measurement, monitoring and controlling risks to ensure that risk taking Decisions are in line with the business strategy and objectives set by BOD.

In modern banking arena risk management is play vital role to minimizing the amount and cost of pure risk a bank will face. The study of risk management is a process of identification, analysis and either acceptance or mitigation of uncertainty in investment decision-making. Essentially, risk management occurs anytime an investor or fund manager analyzes and attempts to quantify the potential for losses in an investment and then takes the appropriate action (or inaction) given their investment objectives and risk tolerance. It can not be denied that all bank in the present-day volatile environment are facing a huge number of risks for instance credit risk, liquidity risk, foreign exchange risk, market risk and interest rate risk, among others – risks which may threaten a bank's survival and success. Through proper risk management identify all possible risks, analyze them and then plan for either contingency or mitigation methods for each. In other words, banking is a business of risk. Consequently, a situation in which the probability of some outcome of an event is in not precisely known; that is known probabilities can not be precisely assign to these outcomes but their general level can be inferred. Risk situations in which one of the outcomes involves some loss of the decision maker. Risk is the deviation of the expected outcome. In one way, decomposing risk is a systematic risk and unsystematic risk. Systematic risk items from factors that affect most firms for example war, inflation, high interest rates etc. Systematic risk can not be eliminated by diversification while systematic risk can be mitigated only by being hedged. Unsystematic risk is caused by such random events of lawsuits strikes successful and unsuccessful marketing programs and other events that are unique to a particular firm since these events are random, these risks can be eliminated by portfolio investment to diversify risk. The objective of financial institutions is to maximize profit and shareholder value-added by providing different financial services mainly by managing risks. On the other hand, risk can be classified as business risk and financial risk. Business risk is the risk to the firm of being unable to covet fixed operating cost. It also arises from the nature of a firm's business which relates to factors affecting the product market. Financial risk is the risk of being unable to cover required obligations such as interest and preference dividends. It also arises from possible losses in financial markets due to movements in financial variables. Risk management process from identification to measurement to action, risk actions relate to the decisions that an institution can take in terms of accepting, mitigating, insuring, transferring, and hedging a risk. It also reveals that operational risk management, interest rate risk management, foreign exchange rate risk management, liquidity risk management, risk management policy framework. Operational risk management is the summary term for any and all potential losses that may arise from external events and internal failures of people, processes and systems. Many aspects of operational risk in microfinance are closely related to credit risk and also manifest themselves in unrecoverable loans. Interest rate risk management is essentially about differences in the timing and degree by which unexpected changes in the level of wholesale market interest rates will be absorbed into the product rates charged to clients and paid on the funding instruments raised by the institution. Foreign exchange rate risk management, it impact on financial institutions earnings and equity value arising from unexpected exchange rate changes. It will also touch on related convertibility and transfer risks which are particularly relevant in developing and emerging markets. Liquidity risk management is the classic survival skill for financial institutions of all types and sizes. Liquidity measure on the balance sheet using various ratios and develop detailed cash flow forecasts. Risk management policy framework worked through the many analytical tools for keeping tabs on each of the risk areas, need to assemble all the various components into a policy framework that will help put best practice risk management to work in banking institution.

Risk management in the banking sector of Bangladesh is a comparatively newer practice, but increase efficiency is being found in the governance of these banks. The Basel committee is guiding the world's banking sector regarding risk issue. Like the central bank of other countries, Bangladesh is following various Basel agreement namely Basel-1, Base-2 and other core risk guidelines implemented by the Bangladesh Bank (BB). Bangladesh's banking sector has been making great advancements in technology, quality, quantity as well as stability and as such, they have started to expand and diversify at a rapid pace. In Base1-1, only credit risk was considered, but in Basel-2 along with credit risk, operation risk and market risk have been brought into consideration. Besides these risks, there are some other risk in banking sector viz, financial risk, concentration risk, interest rate risk, currency risk, equity risk, liquidity risk, reputation risk and profit risk. In early 2003 and 2004, the BB issued guidelines on six core risk to meet risk management in the banking sector. These are credit risk management, asset liability risk management, foreign exchange risk management, internal control and compliance risk management, anti money laundering risk management and information technology risk management. When the whole world was exposed to acute financial recession in 2008 and 2009, it heavily affected the whole economy. Our banking sector was not severely affected due to simplicity and insignificant size of the financial system in Bangladesh. Following subsequent implementation of core risk management guidelines by the BB, all banks are following these guidelines properly and some of our banks have already established separate division namely risk management division, headed by the chief risk officer.

To recapitulate, the entire module introduces the regulatory framework and various sources of guidance on risk management best practices in financial institutions including the Basel Committee on Banking Supervision, Central banks, National regulators, as well as cooperative and other self-regulatory mechanisms.

II. Objectives of the study:

The main purpose of this study is depicting the risk management practices of some selected commercial banks operating in Bangladesh. This study also covers the following areas:

- To identify the risks faced by the selected banks.
- Awareness of bank personnel regarding various types of risk management techniques
- Methods of risk identification and mitigation.
- To identify the risk management practices by the information regarding bank risk and bank management of different private commercial banks in Bangladesh.
- To understand the relationship between risk and risk management indicators.
- As an outcome of the prime objective, I tried to notice the specific areas of risk management practices of some selected private commercial banks in Bangladesh.
- To know about the risk management practices
- And finally to recommend suggestions for the successful risk management practices of selected private commercial banks in Bangladesh.

III. Methodology of the study:

It is a descriptive research based on survey. The study is the based on the primary data. The primary data, on types of risk, techniques to measure risk etc. have been collected through a structured questionnaire. The study has been performed based on the information extracted from the different sources collected by using a specific methodology. This report is analytical in nature. The Methodology is:

- **Population**

For the purposes of the convenient study of this thesis paper considered from different banks from different branches in Sylhet, region has been taken into consideration as population.

- **Discussion:**

Discussion with the staffs of selected commercial banks have generated benchmark information for the study as a comprising tool and enhanced it towards a holistic point of view. I have also received important instructions from my project supervisor.

- **Sources of the Data:**

Source of Data of this Study can be divided into two categories:

Primary sources

- Face-to-Face conversation with the respective officers.
- Relevant file Study provided by the officers Concerned.

Secondary Sources

- Standard journal
- Articles
- Books
- Periodic and electronic sources

- **Research Design:**

A thesis study was conducted aiming to illustrate the risk management practices from some selected commercial banks in Bangladesh. Quantitative data were collected through questionnaires. Individual interviews and focus group interviews were conducted to obtain qualitative data.

- **Sample selection:**

At present a total number of 47 Banks has been operating in Bangladesh out of which 4 are in the public sector and the remaining is in the private sector. Of the private commercial banks, 5 were selected for the study purpose all of which have been local banks. The foreign private banks and the public sector banks have been kept beyond the study sample because of different environment, rules & regulations of these banks than those of local private banks. The study is based on a total number of 5 Private Commercial Banks (PCBs) operating in Bangladesh. These banks were selected on the basis of purposive sampling because of easy access to the requisite data. The names of the selected banks are: Dutch Bangla Bank Ltd. (DBBL), Prime Bank Ltd. (PBL), The City Bank Ltd. (CBL), One Bank Ltd. (OBL), and Dhaka Bank Ltd. (DBL).

- **Data Collection:**

Data were collected within a certain time. Qualitative data were collected through focus group and in-depth interviews. Since workplace violence is a sensitive issue, the privacy, confidentiality, and safety of the subjects were protected throughout the processes of qualitative data collection. Most of the individual interviews were conducted at the participant's workplaces. For the quantitative data I contacted the relevant authorities for permission to collect data. The purpose of the research project as well as the techniques and procedures for questionnaire survey were explained.

- **Test of Hypotheses:**

The hypotheses of this study formulated in terms of Null Hypothesis and Alternative Hypothesis.

Hypothesis 1 (H1): There are positive and significant relationship between risk and factors that creates risk.

Hypothesis 2 (H2): There are positive relationship between risk and risk management indicators.

Limitation of the study:

From beginning to end, the study has been conducted with the intention of making it as complete and resourceful one. However, many problems aroused in the way of conducting the study. During the study, it was not possible to visit all the branches of bank although the data collect and other information regarding the study have been painstaking. This study faced the following problems-

- The study has been conducted across five banks restraining the accuracy of data analysis.
- Due to the bank’s policy of maintaining secrecy and also because I did not get the opportunity in broadly study on risk management practices.
- As the collected primary data only from some selected commercial banks therefore, I could not collect sufficient data on this topic.
- Limitation of time was a major constraint in making a complete study. It was too limited to cover all the banking area. Many aspects could not be discussed in the present study.
- Data are collected on some selected banks. As a result, this study does not cover all the circumstances on risk management practices.
- The area of data collection was limited which contains only the Sylhet City.

IV. Literature Review

A good number of studies have been published about risk management all over the world. However, the number of the empirical studies on risk management practices in the context of Bangladesh found to be relatively small. The following is an endeavor to summarize the main conclusions of some selected studies. The thesis have extensively gone through the available literature relating to risk management of private commercial banks in Bangladesh This is done aiming at making theoretical framework for the study as well as finding the rationale of the study. The study reviews the existing literature on risk management of commercial Banks which are cited bellow:

Risk measurement and evaluation remain critical aspects of investment analysis. Extensive literature exists on single factor as well as multi-factor models of risk management estimation for traditional and alternative investments [Elton and Gruber, 1995; Daglioglu and Gupta, 2003].

Anthony M. Santomero reveal that the banking industry has long viewed the problem of risk management as the need to control four of the above risks which make up most, if not all, of their risk exposure, viz., credit, interest rate, foreign exchange and liquidity risk. While they recognize counterparty and legal risks, they view them as less central to their concerns. Where counterparty risk is significant, it is evaluated using standard credit risk procedures, and often within the credit department itself. Likewise, most bankers would view legal risks as arising from their credit decisions or, more likely, proper process not employed in financial contracting.

Accordingly, the study of bank risk management processes is essentially an investigation of how they manage these four risks. In each case, the procedure outlined above is adapted to the risk considered so as to standardize, measure, constrain and manage each of these risks. To illustrate how this is achieved, this review of firm-level risk management begins with a discussion of risk management controls in each area. The more difficult issue of summing over these risks and adding still other, more amorphous, ones such as legal, regulatory or reputational risk, will be left to the end.

Jahan R. and O'Neill, H. (2003), in their study on „Banking and Industrial Development: A case study of Bangladesh‟ examined the difficulties hampering efficient functioning of the banking system in promoting economic and industrial development in Bangladesh. The findings include: a) legal environment in which banks function is relatively poor. b) Despite financial sector reform programmed of the government there is a lack of credit discipline. c) Loan sanctioning is dictated by political decisions and d) loan taking entrepreneurs are not genuinely serious in utilizing the loan for purposes for which these are granted. Banking system in Bangladesh is not properly equipped with trained manpower to perform its job.

Linbo (2004) worked with risk and efficiency in big banks of United States. He provides two important information on the bank efficiency in terms of profit creation related to risk of those banks. His finding suggests that profitability of a bank is sensitive to credit and solvency risk but not to liquidity risk or to the investment/ portfolio mix. A similar empirical work was conducted by Ho Hahm (2004) on interest rate and exchange rate exposures in Korea. His work depicts that Korean commercial banks had been very much involved with both interest rate and exchange rate risks. The result also says that the efficiency of Korean banks significantly associated with the degree of interest rate and credit policy.

Niinima¨ki (2004) mentioned that the attitude of risk loving of the investors depends on the structure of Banks’ risk management. In addition, if banks do work in monopoly market seems take higher risk that of a competitive market operator. In contrast, banks which have deposit insurance seem taking higher risk, if it is found that banks are competing for deposits. As a result, the rate of interest for deposit account became higher than normal which, in result, increases banks’ risk taking attitude to be profitable in competition.

The relationship between liquidity risk and loan-to-deposit ratio was examined by Wetmore (2004). From his study it was found that loan-to-deposit ratio has been increased during the period which facilitated a change in asset/liability management practices. A positive relation between market risk and loan-to-deposit risk has also been found from that study.

Wang and Sheng-Yung (2004) examined foreign exchange risk and world diversification. Empirical results suggested foreign exchange risk is priced high. Moreover, world diversification was shown to help portfolios globally. These findings suggest that Taiwanese exchange risks involves valid investment to seek international diversifications.

Khambata and Bagdi (2003) worked with off-balance-sheet (OBS) credit risk in top 20 Japanese banks. The main results of this study suggested that financial derivatives are heavily used by the top four banks and a wide difference across the banks in the use of derivative leverage. As compared to USA and European banks, Japanese banks use fewer OBS instruments as a percentage of their assets.

Al-Tamimi investigated UAE commercial banks and their risks management techniques. The study revealed that the credit risk was their high concern. The significant findings of the study are inspection by managers and financial analysis was the main risk identification method. Establishing standards, credit score, credit worthiness analysis, risk rating and collateral seems popular risk measurement techniques; the study also highlighted the willingness to use the most sophisticated risk management techniques in those banks.

Salas and Saurina (2002) contributed by providing policy guideline from their study which examined credit risk in Spanish banks; the study compared the determinants of problem loans during 1985-1997. Their suggestions are related to raise important bank supervisory policy issues: the use of bank-level variables as early warning indicators and the role of banking competition and ownership in determining credit risk.

Various risk management practices in financial organizations became the need of the time just after the financial distress faced by the whole world in last decade. In particular, United States required long time to restore their economy with serious regulatory changes. Many post crisis analysts found dissimilarities in terms of risk identification and management in different banks and financial organization before and during the crisis which was a self-destructive thought that brought such loss to the world economy.

Risk management defines the need of identification of core risks, method to develop consistent and accurate risk measurement, give the importance of risk reduction, avoidance and transfer through proper risk return calculation and best monitoring procedures of risk position for the organization. For banks, meeting the regulation not necessarily can avoid bankruptcy or financial harassment. Bank personnel require reliable risk identification, measurement and management culture to follow and monitor best risk-reward ratio.

Risk sharing is the prime concern of any financial system which deals not only with risk sharing but also economic development through value creation. However, risk taking is based on educated analysis and understanding of the risk that is necessarily present, whereas gambling creates a risk that would otherwise be non-existent.

In this paper, the effect risk management practices are analyzed. In brief, results are presented on the level of risk management used in various fund and strategies. Results are also provided on the degree to which risk management techniques as well as risk mitigation techniques. The study also reveals that private commercial banks use advanced methods of risk identification techniques, risk management techniques as well as risk mitigation techniques to a great extent along with traditional techniques. It is important not only for fulfilling regulatory requirements but also to improve financial and operational performance of the banks. Strong and integrated risk management is essential for the long-term sustainability of the bank's business. The comprehensive risk management policies and sophisticated risk management processes are required for systematic identification, measurement, monitoring and controlling of all business risks. Bank's overall financial soundness can be measured only by adopting a strong risk management process communicating concise risk management standards to all concerned officials through adequate policies, directives, operating procedures and training programs. So, these banks give due importance to the Advanced techniques of risk management as a whole. In Chapter 4, the major findings as they relate to the potential impact of risk management practices performance are presented.

Descriptive analysis (DA):

Descriptive analysis is used in this thesis paper to convert the data collected into an easy and simple form to understand and interpret. To get the result and take the decision from the analysis I have calculated Mean and Standard Deviation. In descriptive analysis of my thesis paper I divided into two parts, information regarding bank risk and information regarding bank management. DA provides necessary information is given below:

Information Regarding Bank Risk										
	operational Risk	credit Risk	Human Resources Risk	Information Technology Risk	Equity Risk	Foreign Exchange Risk	Interest Rate Risk	Liquidity Risk	Money Laundering Risak	Marketing Risk
Mean	3.64	3.8	3.54	3.5	3.58	3.52	3.72	3.8	3.74	3.76
Standard Deviation	0.63	0.6	0.73	0.64	0.64	0.54	0.57	0.6	0.63	0.65

Operational Risk:

It has been seen from the given table and graph, that the mean of operational risk is high (3.64), which indicates a high level of operational risk. On the other hand, the standard deviation is very low (0.63), which means the responses are relatively similar. As we know, if a factor has greater mean than standard deviation, this factor is more important in descriptive analysis. As a result, operational risk is monitored & controlled within the bank through an operational risk management framework.

Credit Risk:

It has been understood from the given table and graph, that the mean of credit risk is high (3.8), which indicates a low level of operational risk. On the other hand, the standard deviation is very low (0.6), which means the responses are comparatively similar. Thereby, this feature is very important for regarding bank risk and bank should not avoid it. Bank complies with the regulatory requirements and appropriate training is arranged for the employees for becoming aware of the regulations.

Human Resource Risk:

It has been implicit from the given table and graph, that the mean of human resource risk is low (3.54), which indicates a high level of human resource risk. On the other hand, the standard deviation is very high (0.73), which means the responses are virtually different. It depicts that measures regarding human resource risk management, bank complies with an effective human resource policy. Bank also gives emphasis on pay and benefits for the employees; bank focuses on training & development and bank emphasizes on disciplinary & grievances.

Information Technology Risk:

It has been contained from the given table and graph, that the mean of information technology risk is low (3.5), which point out a low level of information technology risk. On the other hand, the standard deviation is very low (0.64), which means the responses are usually different. For that, most of the banks have much improvement on information technology sector.

Equity Risk:

It has been embedded from the given table and graph, that the mean of equity risk is low (3.58), which identifies a low level of operational risk. On the other hand, the standard deviation is very low (0.64), which means the responses are relatively different from each other. It reveals bank follows Market–to-Market valuations of the share investment portfolio in measuring and identifying risk occupies. Bank diversifies investment to minimize equity risk and margin accounts are monitored very closely.

Foreign Exchange Risk:

It has been enclosed from the given table and graph, that the mean of foreign exchange risk is low (3.52), which designates a low level of foreign exchange risk. On the other hand, the standard deviation is very low (0.54), which means the responses are coherently similar. In addition, almost all of the banks are good at on foreign exchange performance because of the increased flow of remittances in our country.

Interest Rate Risk:

It has been attached from the given table and graph, that the mean of interest rate risk is high (3.72), which authorizes a high level of interest rate risk. On the other hand, the standard deviation is very low (0.57), which means the responses are stick together. It follows that, differences between the timing of rate changes and the timing of cash flows, changing rate relationships among different yield curves effecting bank activities.

Liquidity Risk:

It has been included from the given table and graph, that the mean of liquidity risk is high (3.76), which signifies a high level of liquidity risk. On the other hand, the standard deviation is very low (0.59), which means the responses are relatively uniform. In that case, liquidity risk is high for difference between compositions of assets and liabilities and banks also could not able to collect liquidity in a timely manner. So, banks should keep an effective risk management process include an efficient MIS, monitor and control existing as well as future liquidity risks and reporting to senior management.

Money Laundering Risk:

It has been integrated from the given table and graph, that the mean of money laundering risk is high (3.74), which indicates a high level of money laundering risk. On the other hand, the standard deviation is very low (0.63), which means the responses are comparatively similar. Consequently, most of the time banks are not able to protect money laundering, for that, banks necessarily to do Chief Anti-money Laundering Compliance officer takes initiatives to implement and enforce anti-money laundering policies and procedures; Trainings & workshops on anti-money laundering are arranged for the employees and suspicious transactions reported to the appropriate authorities for their immediate actions

Marketing Risk:

It has been added from the given table and graph, that the mean of marketing risk is high (3.76), which indicates a high level of marketing risk. On the other hand, the standard deviation is very low (0.65), which means the responses are relatively different. In that case, marketing risk is high for banks may not adopt the appropriate promotional activities to preserve its image. Therefore, bank ensures appropriate but not excessive use of marketing entertainment and bank maintains proper procedures in awarding any external contract in bracket.

Findings of the information regarding bank risk:

information Regarding Bank Management										
	Division al level	Loan Diversifi	Branch level	Executiv e	Audit committ	Complia nce	Updated credit	Regulato ry	Anti money	Investme nt diversifi
Mean	4.0	4.	4.	3.	4	4.	3.	4	3.	4.1
Standard	0.63	0.5	0.6	0.6	0.6	0.6	0.7	0.6	0.6	0.73

The management at divisional level monitors risk:

The table and graph represents the mean of management divisional level is 4.08 that indicates most of the respondents believe that the management at division level monitors the risk. The standard deviation of this indicator is 0.63 that means the variation of responses is relatively similar.

Bank diversifies its loan exposure to different sector:

The table and chart reveals the mean of Bank diversifies its loan exposure to different sector is 4.12 that present much of the correspondents to thought bank diversification in terms of loan can positively enhance the organization. The standard deviation of this indicator is 0.59 that means the variation of responses is relatively similar.

Branch level official supervise risk:

The table and column graph delineates the mean of Branch level official supervise risk is 4.06 that reflects most of the respondents considered risk is supervise by branch level officials. The standard deviation of this indicator is 0.65 that means the variation of responses is comparatively similar.

The executive committee monitors risk:

The table and graph explains the mean of the executive committee monitors risk is 3.98 that imitate almost every respondents regarded as the executive committee monitors risk. The standard deviation of this indicator is 0.63 that means the variation of responses is proportionately parallel.

The audit committee overseas all the activities of banking operations:

The table and chart describes the mean of the audit committee overseas all the activities of banking operations is 4 that reflects the majority of respondents thought the audit committee overseas all the activities of banking operations. The standard deviation of this indicator is 0.63 that means the variation of responses is fractionate alike.

Internal control and Compliance division directly report to the board/ audit committee about the overall credit risk:

The table and graph mark out the mean of the internal control and Compliance division directly report to the board/ audit committee about the overall credit risk is 4.02 that expose the large number of respondents believed Internal control and Compliance division directly report to the board/ audit committee about the overall credit risk. The standard deviation of this indicator is 0.65 that means the variation of responses is relatively similar.

Bank uses the updated credit policy approved by the board of directors:

The table and chart outline the mean of the Bank uses the updated credit policy approved by the board of directors is 3.96 that interpreted the maximum number of respondents thought Bank uses the updated credit policy approved by the board of directors. The standard deviation of this indicator is 0.75 that means the variation of responses is fluctuates their opinion.

Bank complies with the regulatory requirements:

The table and column graph summarize the mean of the Bank complies with the regulatory requirements is 4 that expose the large number of respondents considered that the Bank complies with the regulatory requirements. The standard deviation of this indicator is 0.60 that means the variation of responses is fractionate alike.

Training and workshops on anti money laundering are arranged for employees:

The table and chart outline the mean of the training and workshops on anti money laundering are arranged for employees is 3.98 that rendering the most of respondents reflect on the training and workshops on anti money laundering are arranged for employees. The standard deviation of this indicator is 0.62 that means the variation of responses is relatively similar.

Bank diversifies investment to minimize equity risk:

The table and graph explains the mean of the Bank diversifies investment to minimize equity risk is 4.16 that delivered the most of the respondents believed the Bank diversifies investment to minimize equity risk. The standard deviation of this indicator is 0.73 that means the variation of responses is unsteadiness their opinion.

Findings of the analysis:

- The mean of management divisional level is 4.08 that indicate most of the respondents believe that the management at division level monitors the risk. However, the standard deviation of this indicator is 0.63 that means the variation of responses is relatively similar.
- The mean of Bank diversifies its loan exposure to different sector is 4.12 that present most of the correspondents thought bank diversification in terms of loan can positively enhance the organization. In contrast, the standard deviation of this indicator is 0.59 that means the variation of responses is relatively similar.
- The mean of Branch level official supervise risk is 4.06 that reflects most of the respondents considered risk is supervise by branch level officials. On the contrary, the standard deviation of this indicator is 0.65 that means the variation of responses is relatively similar.
- The mean of the executive committee monitors risk is 3.98 that imitate almost every respondent regarded as the executive committee monitors risk. Whereas, the standard deviation of this indicator is 0.63 that means the variation of responses is relatively similar.
- The mean of the audit committee overseas all the activities of banking operations is 4 that reflects the majority of respondents thought the audit committee overseas all the activities of banking operations. Rather, the standard deviation of this indicator is 0.63 that means the variation of responses is relatively similar.
- The mean of the internal control and Compliance division directly report to the board/ audit committee about the overall credit risk is 4.02 that expose the large number of respondents believed internal control

and Compliance division directly report to the board/ audit committee about the overall credit risk. In spite of, the standard deviation of this indicator is 0.65 that means the variation of responses is relatively similar.

- The mean of the Bank uses the updated credit policy approved by the board of directors is 3.96 that interpreted the maximum number of respondents thought Bank uses the updated credit policy approved by the board of directors. Though, the standard deviation of this indicator is 0.75 that means the variation of responses is fluctuates their opinion.
- The mean of the Bank complies with the regulatory requirements is 4 that expose the large number of respondents considered that the Bank complies with the regulatory requirements. Despite, the standard deviation of this indicator is 0.60 that means the variation of responses is fluctuates their opinion.
- The mean of the training and workshops on anti money laundering are arranged for employees are 3.98 that rendering the most of respondents reflect on the training and workshops on anti money laundering are arranged for employees. Even though, the standard deviation of this indicator is 0.62 that means the variation of responses is relatively similar.
- The mean of the Bank diversifies investment to minimize equity risk is 4.16 that delivered the most of the respondents believed the Bank diversifies investment to minimize equity risk. While, the standard deviation of this indicator is 0.73 that means the variation of responses is fluctuates their opinion.
- The mean of operational risk is high (3.64), which show a high level of operational risk. On the other hand, the standard deviation is very low (0.63), which means the responses are relatively similar.
- The mean of credit risk is high (3.8), which illustrate a low level of operational risk. On the other hand, the standard deviation is very high (0.6), which means the responses are comparatively resembling. .
- The mean of human resource risk is low (3.54), which exemplify a high level of human resource risk. On the other hand, the standard deviation is very low (0.73), which means the responses are virtually different.
- The mean of information technology risk is low (3.5), which demonstrate a low level of information technology risk. On the other hand, the standard deviation is very low (0.64), which means the responses are usually different.
- The mean of equity risk is low (3.58), which indicate a low level of operational risk. On the other hand, the standard deviation is very low (0.64), which means the responses are relatively different from each other.
- The mean of foreign exchange risk is low (3.52), which point up a low level of foreign exchange risk. On the other hand, the standard deviation is very low (0.54), which means the responses are coherently similar.
- The mean of interest rate risk is high (3.72), which highlight a high level of interest rate risk. On the other hand, the standard deviation is very low (0.57), which means the responses are stick together.
- The mean of liquidity risk is high (3.76), which show up a high level of liquidity risk. On the other hand, the standard deviation is very low (0.59), which means the responses are relatively uniform.
- The mean of money laundering risk is high (3.74), which humiliate a high level of money laundering risk. On the other hand, the standard deviation is very low (0.63), which means the responses are comparatively similar.
- The mean of marketing risk is high (3.76), which put in an appearance a high level of marketing risk. On the other hand, the standard deviation is very low (0.65), which means the responses usually varies with each other.

V. Hypothesis Testing:

Hypothesis is a falsification test it point out whether the statement is correct or not. Afterwards, hypotheses were formulated in terms of null hypothesis (Ho) and alternative hypothesis (H_1). To know the opinion of regarding bank the following hypotheses are formulated:

Hypothesis: 01

Null Hypothesis **(H_0^1)** = There are positive and significant relationship between risk and factors that creates risk.

Alternative Hypothesis **(H_1^1)** = There are negative relationship between risk and factors that creates risk.

Analysis of Variance (ANOVA): ANOVA is used to as a test of means for two or more populations and here we used to test the impact of the factors on the risk management practices of different private commercial banks of Bangladesh.

ANOVA for the factors of risk management practices: ANOVA is used to prove that the factors have impact on bank risk.

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	5.792	9	0.643556	1.633559	0.102868	1.898983
Within Groups	193.04	490	0.393959			
Total	198.832	499				

Comment: Here, we know that, if the calculated F value is greater than the F critical value or P-value at that researcher(s) must reject the Null Hypothesis and accept the Alternative Hypothesis.
From this analysis it is clear that, the calculated value of F is (1.633559) which is less than table value of F (1.898983). So the researchers keep null hypothesis (Ho): That is-“: There are positive and significant relationship between risk and factors that creates risk” and reject alternative hypothesis.

Hypothesis: 02
$\mathbf{H_0}^2$ = There are positive relationship between risk and risk management indicators.
$\mathbf{H_1}^2$ = There are negative relationship between risk and risk management indicators.

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	1.992	9	0.221333	0.513121	0.86536	1.898983
Within Groups	211.36	490	0.431347			
Total	213.352	499				

Here, from this analysis it is clear that, the calculated value of F is (0.513121) which is less than table value of F (1.898983). So the researchers accept null hypothesis (Ho): That is-“there are positive relationship between risk and risk management indicators

VI. Conclusion

From the analysis of the study, it can be concluded that risk management is one of the cores of all the strategic management of a bank. This is because of the fact that banking business itself is a business of risk whether Credit risk, Liquidity risk, Performance risk, Interest rate risk etc. Therefore, the management of the respective banks must give due emphasis on the management of various banks’ risks in order to run the banks successfully. The study reveals that commercial banks use advanced methods of risk identification techniques, risk management techniques as well as risk mitigation techniques to a great extent along with traditional techniques. So, these banks give due importance to the Advanced techniques of risk management as a whole.

On the basis of sample bankers’ opinions the following (statistically significant) results can be concluded: Of the various types of risks faced by the selected banks, credit risk, market risk and operational risk are the major risks to the bankers. Regarding risk management oversight, it is seen that the Board of Director performs the responsibility of the main risk oversight, the Executive Committee monitors risk and the Audit Committee oversees all the activities of banking operations. Regarding credit risk management, it is revealed that bank uses the updated credit policy approved by the Board of Director Credit risk management division and credit administration division perform their activities separately, law and recovery team monitors the performance of the loans. Internal control and compliance division directly reports to the Board/Audit Committee about the overall credit risk status. In terms of opinions as to operational risk management, it is found that operational risk is monitored and controlled within the bank through an operational risk management framework. Regarding money laundering risk management, it is noticed that the Central Compliance Unit looks after the overall compliance with money laundering regulations. Regarding equity risk management, bank follows market–to-market valuations of the share investment portfolio in measuring and identifying risk Regarding information technology risk management, it is reported that IT Audit Team audits the divisions and branches. Regarding managing the liquidity risk, it is found that bank maintains that customers’ confidence is maintained in ensuring liquidity. Regarding marketing risk management, it is revealed that bank adopts the appropriate promotional activities to preserve its image. In human resource risk management it is found that bank complies with an effective human resource policy. Regarding use of risk management techniques, it is found that internal rating system and risk adjusted rate of return on capital are important. In the use of Bangladesh Bank guidelines for managing risks, it is revealed that asset liability management, investment risk management and foreign exchange risk management are much significant to the bankers. In order to make the risk management effective in the selected commercial banks operating in Bangladesh, the major types of risks, e.g., credit risk, market risk, operational risk, interest rate risk, foreign exchange risk, equity risk, liquidity risk, money laundering risk, information technology risk, marketing risk and human resource risk need to be emphasized by the concerned bank authority. Moreover, the major techniques of risk management as mentioned and significant guidelines for managing risk given by Bangladesh Bank demand special care for the overall success of risk management.

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