



How to cite this article:

Bashir, R., & Azeez, A. A. (2022). Risk management practices of Islamic and conventional banks of Pakistan: A comparative study. *International Journal of Banking and Finance*, 17(2), 57-90. <https://doi.org/10.32890/ijbf2022.17.2.3>

RISK MANAGEMENT PRACTICES OF ISLAMIC AND CONVENTIONAL BANKS OF PAKISTAN: A COMPARATIVE STUDY

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Received: 21/2/2021 Revised: 23/6/2021 Accepted: 9/7/2021 Published: 27/6/2022

ABSTRACT

This paper is the report of a study that has investigated the impact of the risk management process, including liquidity and operational risk, on the risk management practices of Islamic banks and conventional banks in Pakistan. The study compared the risk management practices of both types of banks. Data was collected through the 200 self-administered questionnaires distributed to senior managers and risk officials of both types of banks. The data was analyzed using basic descriptive statistics, One-way ANOVA and Multiple regression analysis. The empirical results showed that risk assessment and analysis, risk monitoring and liquidity risk analysis were the most influential determinants of the risk management practices of conventional banks, whereas risk identification, risk assessment and

analysis, credit risk analysis, liquidity risk analysis and operational risk analysis had influenced the risk management practices of Islamic banks. Overall, Islamic banks were better in terms of understanding risk management, risk identification, risk assessment and analysis, risk monitoring and operational risk analysis, while conventional banks were ahead of Islamic banks in credit risk analysis, liquidity risk analysis, and risk management practices. In the context of the emerging economy of Pakistan, the study outcomes can be helpful for investors, potential and existing customers to make prudent investment decisions. Findings are also helpful for strategy managers and regulators in policy formulation, elevation, and implementation of risk management regulations.

Keywords: Islamic banks, conventional banks, risk management process, risk management practices, liquidity risk analysis, operational risk analysis, Pakistan.

JEL Classification: G32, G21.

INTRODUCTION

Risk has always been an important concern for all business enterprises, especially for financial institutions. Banking is more sensitive to risk because banks operate on the funds of depositors and each transaction creates a risk (Bessis, 2011). At the same time, cut-throat competition in the industry calls for effective implementation of risk management practices (Bulbul et al., 2019). Therefore, risk management is a vital component of a bank's success (De Angelo & Stulz, 2015). Increased market volatility, development of new products and derivatives, increased cost of risk management, sophisticated information technology systems and global financial crisis are the challenges faced by modern-day banks. To address these issues, an elaborated and specialized risk management framework is required because these variations call for the constant upgrading of the risk management framework (Abu Hussain & Al Ajmi, 2012). The five-step risk management process empirically tested by Al Tamimi and Al- Mazrooei (2007) and Hassan (2009) has not been sufficient to dictate effective risk management practices for the globalized banking system because it included only credit risk analysis along with the understanding of risk, risk identification, risk assessment and

analysis, and risk monitoring. Basel I focused on credit risk analysis and management because at that time it was considered that the key risk for banks is the credit risk, but in the modern age liquidity risk and operational risk are more or equally significant risks for banks (Abu Hussain & Al-Ajmi, 2012; Raza Bilal et al., 2013). Basel II and Basel III have also endorsed these findings by highlighting the operational and liquidity risk as key risks for banks and formulating the regulations to manage them effectively.

Mismanagement of liquidity is the key reason which worsen the situation during a financial crisis. Liquidity risk management must be an integral part of the overall risk management framework and the governance of banks (Basel Committee on Banking Supervision, 2008). Operational risk is in the limelight because operational risk events are increasing with the development of financial institutions (Chernobai et al., 2018) and had resulted in huge losses (Neifar & Jarboui, 2018). Risk management has become even more important for lower middle-income countries like Pakistan, where the empirical literature on risk management practices of banks is limited (Shafiq & Nasr, 2010). Pakistan is an emerging economy, and banks are the major players in the financial sector of the country (Aurangzeb, 2012). The banking system of Pakistan, like in other parts of the world, is dual. The Islamic banks and conventional banks are functioning side by side, whereby Islamic banks hold an asset base share of 15 percent and a 17 percent share of deposits (State Bank of Pakistan, 2019). The world portfolio share of the deposit was 1.75 percent (Islamic Financial Services Board [IFSB], 2015), which was relatively low compared to Malaysia and the Middle East. Still, being an Islamic country with 98 percent of the population being Muslim, Islamic banks have a great potential for growth. The Islamic banks of Pakistan are in their evolutionary phase and facing various challenges and problems, i.e., the same liquidity policy is being implemented on both Islamic banks and conventional banks, which is not fair, and a separate policy is required to serve the unique liquidity issues of Islamic banks.

Though both types of banks perform two basic functions, i.e., fund mobilization and utility services, still both are quite different from each other (Nasser & Muhammad, 2013) in terms of the execution and operationalization of various products and services. Unlike conventional banks, all transactions of Islamic banks are Riba-free

(based upon profit and loss sharing) and developed according to Shariah laws. Being conceptually different from each other, both banking systems face risks while executing various transactions and dealing with different types of products and services. However, the risk exposure of Islamic banks is two-fold because they are bound to follow both the general regulations of conventional banks and Shariah laws. These facts make it worth to study and compare the risk management process and practices of these two unique, but correlated banking systems operating in Pakistan in order to understand their strengths and weaknesses and unfold the competitive edge they have over each other. Moreover, there are three main reasons to compare the Islamic banks and conventional banks of Pakistan, and these are: 1) the banking industry is showing good growth; 2) Islamic banks performed well during the financial crisis (Ouerghi, 2014) and have gained more acceptance among Muslims; and 3) Islamic banks follow the same accounting standards and basic banking regulations used by conventional banks (Khan et al., 2017).

Though the current study is an extension of empirical researches on risk management practices of Pakistani banks (Shafiq & Nasr, 2010; Khalid & Amjad, 2012; Nazir et al., 2012; Shafique et al., 2013, Raza Bilal et al., 2013 and Rehman et al., 2017), it nevertheless adds to the literature by looking into two new dimensions in the risk management process of banks i.e., Liquidity Risk Analysis (LRA) and Operational Risk Analysis (ORA), in addition to the existing five-step (understanding of risk, risk identification, risk assessment and analysis, risk monitoring and credit risk analysis) risk management process. Thus so far, there has been no research which has included the liquidity and operational risk in the risk management process, despite the availability of solid evidence that these two risks are more, or equally important as credit risk.

The prime purpose of the present research is to make a significant contribution to the existing model of risk management framework of banks by studying the risk management process (RMP) of Islamic banks and conventional banks of Pakistan using the following seven aspects of the risk management process: understanding of risk, risk identification, risk assessment and analysis, risk monitoring, credit risk analysis, liquidity risk analysis, and operational risk analysis. More specifically, this study aims to investigate the impact of the risk management process, including liquidity and operational

risk on the risk management practices of Islamic banks, as well as conventional banks, and to compare the risk management practices of Islamic banks and conventional banks of Pakistan.

The remainder of the paper is organized as follows. Section 2 reviews the related literature on risk management practices and presents the hypotheses. Section 3 describes the data and method of analysis. Section 4 comprises results and discussions on the preliminary and inferential analyses of the study. Section 5 concludes the paper.

REVIEW OF LITERATURE AND HYPOTHESIS DEVELOPMENT

Agency theory highlights the existence of risk in an organization (Jensen & Meckling, 1976), while institutional theory emphasizes the formulation and implementation of the risk management process and practices to mitigate these risks (Hudin & Hamid, 2014). An agency problem arises due to a conflict of interest between agents (managers) and principals (stakeholders), which in turn exposes the organizations to various types of risks because managers tend to misuse their authority for their personal interest (Jensen & Meckling, 1976). To this end, institutional theory suggests that a standard set of rules are mandatory to formulate an efficient risk management structure which according to Tolbert and Zucker (1983) can be achieved through institutionalization, as “the process through which components of formal structure become widely accepted, as both appropriate and necessary, and serve to legitimate organizations” (pp. 5). It has been pointed out that the implementation of risk management practices depends upon the firm size, technology and environment (Collier & Wood, 2011). The environment includes government policies which will provide the key motivation for the enactment of the risk management practices. Meanwhile, the execution of risk management is linked to innovation (new products and services), communication, time, and the social system (Hudin & Hamid, 2014).

Hence, the formulation and implementation of an effective risk management framework are equally necessary for Islamic banks and conventional banks (Van Greuning & Iqbal, 2008; Hassan, 2009) to address the agency problem and to protect the interest of all stakeholders of the firm including the creditors, employees,

customers, etc. The customers are the most important stakeholders, especially those in the in-service sector (banking). They should have trust and confidence in the firm, but financial distress and bankruptcy can shake this trust. Risk management helps to overcome these issues and increase the customer's confidence, leading to enhanced business value (Klimczak, 2007).

Risk management is a stepwise process. According to Bessis (2011), "It operates through three lines of defense, i.e., 1) lines of business. 2) Function of the enterprise including risk management, compliance, finance, human resource and legal. 3) Corporate audit" (pp 9). Initially, the risk management process was empirically tested by Hassan (2009) and Al- Tamimi and Al-Mazrooei (2007) for the Islamic banks and conventional banks of Brunei Darussalam and the UAE, respectively. They reported that risk management practices (RMPS) are the function of the Risk Management process (RMP), whereby the RMP has five steps, i.e., Understanding Risk and Risk Management (URRM), Risk Identification (RI), Risk Analysis and Assessment (RAA), Risk Monitoring (RM) and Credit Risk Analysis (CRA). Results revealed that the RI and the RAA could influence the RMPS more, compared to the other aspects of the RMP in both conventional banks and Islamic banks. In addition, Hassan (2009) further reported that Islamic banking was a little bit better at risk management than conventional banks. Since then, a significant number of researches have been conducted to study risk management practices in Islamic and conventional banks operating in various parts of the world, including Pakistan.

A comprehensive comparative study by Abu Hussain and Al-Ajmi (2012) on the RMPS of Islamic banks and conventional banks of Bahrain concluded that all aspects of the RMP were significantly related to the RMPs of Islamic banks and commercial banks. While Islamic banks and conventional banks were somewhat efficient in the RAA, the RMPs, the RM and the RI, determinants of the quality of the RMPS are the RAA, the RI, the RAA, and the CRA. Although Islamic banks and conventional banks were similar in the RI, the RM, the RAA, and the CRA, they were substantially variant in terms of the URRM. Mohad Arrifin and Kassim (2011) have suggested that the Islamic banks of Malaysia are efficient in the RMPs, but room for improvement is still there. Hassan (2011) pointed out that the Islamic banks and conventional banks of five Middle Eastern countries were well aware of the importance of risk and its management. Moreover,

the banks which were part of the sample of the present study dealt effectively with the RI, the RAA and the RM, and the management of the different types of risks. Sleimi (2020) suggested that all the five aspects of the risk management process had a significant relationship with the risk management practices of Jordanian banks and this led to their better performance.

Raza Bilal et al. (2013) studied Basel III's risk management practices and their implementation in the banks of Pakistan, Bahrain, and the UAE. Their findings showed that the RMU, the RAA, the RI and the CRA had a significant relationship with the RMPs of Islamic banks and conventional banks of Bahrain. They also found that the RMU, the IOR and the RAA had a significant influence on the risk management practices of banks in the UAE, and in the banks of Pakistan all features of the risk management process had a significant association with the RMPs. Similarly, Muhammad et al. (2018) suggested that the URM, the RI, the RAA, the RM and the CRA were determinants of the risk management practices of the commercial banks of Pakistan. As a matter of fact, the RAA and the RM were the most influential components. While, the study by Khalid and Amjad (2012) concluded that all aspects of the risk management process were positively related to the RMPs in the Islamic banks of Pakistan. However, the RM and the URM were found to have influenced the RMPS the most. Nazir et al. (2012) have commented that credit risk analysis, risk monitoring and understanding of risk were the most important aspects of the RMP and have had a significant effect on the RMPS of Islamic banks of Pakistan. They also argued that there is a substantial difference between RMPS of Islamic banks and conventional banks. Meanwhile, Shafique et al. (2013) concluded that there is no variance among the risk management practices of Islamic banks and conventional banks of Pakistan. This difference shows that compliance levels at various points of time and local regulatory frameworks play a significant role in the RMPs of banks.

The above literature suggests that the risk management process has been studied based on five steps. Hence, review of literature in the field shows that, there has been no significant extension or modification of these steps, except in the research work of Rehman et al. (2017), which included the liquidity risk analysis in addition to the basic five step risk management process. They concluded that the RI, the RAA, and the CRA have a significant relation with the RMPS of Islamic banks while, the URM, the LRA and the CRA are the significant

determinants of the RMPS of conventional banks in Pakistan. It is true that there is a significant variance in Islamic banks and conventional banks in terms of the RI, the RMPS and the liquidity risk analysis. Moreover, conventional banks are efficient in liquidity analysis and Islamic banks are efficient in the RI and the RMPS.

Yet another stream of studies has suggested that liquidity risk and operational risk are the most significant risks confronted by banks, in addition to credit risk (Hassan, 2009; Abu Hussain & Al-Ajmi, 2012; Raza Bilal et al., 2013; Shafiqet al., 2013; Al-Ali & Naysary, 2014). On the one hand, Islamic banks face credit risk, liquidity risk, foreign exchange risk, operational risk and Shariah risk (Ariffin et al., 2009; Rehman et al., 2017) and conventional banks on the other, face credit risk, liquidity risk, interest rate risk, foreign exchange risk, and operational risk (Shafique & Nsar, 2010; Alam & Maskujama, 2011; Wood & Kellman, 2013). Basel II (2004), Basel III (2010) and IFSB (2005) also suggest that banks should manage four major risks, i.e., credit, liquidity, operational, and market risk.

The importance of liquidity risk was further underscored after the financial crisis which occurred from 2007 until 2009. Even banks with high capital faced liquidity issues during the crisis (Jenkinson, 2008). That is why the main focus of Basel III (2010) is liquidity management (Giordana & Schumacher, 2013). In Basel III, the liquidity issue has been addressed with the introduction of the liquidity coverage ratio (LCR) and high-quality liquid assets (HQLA). Liquidity is vital for Islamic banks, just as it is for the other types of banks (Bello et al., 2017). Islamic banks do not suffer liquidity issues due to liquidity coverage; these banks face this issue because there are only a few options/ instruments available as per Shariah laws to improve liquidity (Archer & Karim, 2013). The comparative studies of the performance of the Islamic banks and conventional banks conducted by Jaffar and Manarvi (2011) and Kassim and Abdulle (2012) have suggested that Islamic banks are more liquid than conventional banks due to a limited number of Islamic investment instruments. Similarly, Akhter et al. (2011) and Rehman et al. (2017) concluded that the conventional banks of Pakistan managed their liquidity in a more effective manner than the Islamic banks.

Operational risk identification and management have gained crucial importance during the last decade because of the immense losses suffered by financial institutions due to excessive operational risk. For example, Bernard L. Madoff Investment securities (USD 17 billion),

General Society (Euro 6.3 billion), Rabobank (USD 1 billion) and Fondiaria-SAI (252 million euros) had suffered losses during the year 2013 as a result of fraudulent business activities. These losses are a warning for financial institutions and it has become essential for banks to identify, monitor, and manage operational risks effectively (Neifar & Jarboui, 2018). Operational risk management is crucial for banks because of the following reasons: 1) operational risks result in big losses; 2) operational risks arise through internal sources, which are due to poor internal control; 3) the poor management of operational risk is a reflection of the fact that the other areas of risk management system are also weak (Chernobai et al., 2018). Furthermore, Raza Bilal et al. (2013) has concluded that the most important risk confronting banks is the operational risk. In Pakistan, both types of banks have experienced a severe cybersecurity breach in October 2017 and suffered a loss of almost 6 million USD. This incident shows that the information systems of banks need to be improved, which comes under operational risk. In addition, a unique operational risk face by Islamic banks, is the Shariah non-compliance risk, i.e., the probability of non-compliance to shariah rules and principles in the bank's operations; or risk related to Islamic Banks fiduciary obligations as in *Mudarib* (entrepreneur) toward fund providers in a two-tier *Mudarabah* contract. In the case of carelessness and unethical conduct of *Mudarib*, the bank becomes liable to return funds to the original fund provider. So, operational risk management is even more crucial for Islamic banks.

Based on the foregoing discussions, it can be argued that the agency issue calls for the implementation of standardized risk management practices in banks. While the risk management process is not limited to credit risk only, it should also include liquidity and operational risks, which are the most significant risks for Islamic banks and conventional banks. To this end, the risk management process and the practices of both types of banks are different from each other in some parts of the world while, in some countries, they are the same in light of this, it can be hypothesized that:

- H₁ : The risk management practices of Islamic banks and conventional banks are determined by the risk management process.
- H₂ : The risk management process and the risk management practices of Islamic banks and conventional banks are significantly different from each other.

RESEARCH METHODOLOGY

Data

The primary data was collected through a self-administered survey questionnaire because information required on the various aspects of the risk management process and practices is generally not published in the annual reports of banks, or any other reports published by central banks (Abu Hussain & Al-Ajmi, 2012). In addition, researchers can explain the research and motivate the respondents, and the respondents can fill in the questionnaire at their convenience (Sekaran & Bougie, 2016). The questionnaire used in the current study was adopted from the ones used in the studies by Al- Tamimi and Mazrooei (2007) and Hassan (2009) to measure the risk management process and practices. The constructs used in the questionnaire have been adopted because they have already been piloted and validated (Bryman & Bell, 2012). These pre-validated and well-reputed constructs make reliable measures that lead to good results (Sekaran & Bougie, 2016). The constructs have already been used by Raza Bilal et al. (2013) and Khalid and Amjad (2012) in their researches to study the risk management process and practices in Pakistani banks. The existing model of risk management process has been extended by adding two new dimensions, i.e., operational risk analysis and liquidity risk analysis. Constructs of these variables were adopted from Rehman et al. (2017), the principles of liquidity risk management (BSBS, 2008) and the principles of operational risk developed by the BCBC (2011) and the SBP (2003), respectively. Construct contents were further validated through consultation with practitioners and academicians, as suggested by Devellis (1991) and practiced by Al –Tamimi and Al- Mazrooei (2007). The first draft of the questionnaire was sent to three academics in the field and five Chief Risk officers of various banks to assess the sufficiency and validity of the construct. A final draft was developed accordingly by deleting and rearranging some questions.

The study questionnaire was divided into two main sections. The first section included information about respondents (bank employees) and banks. The second section measured the risk management process and practices of banks. The risk management process was measured in terms of seven aspects, i.e., understanding and risk management, risk identification, risk assessment and analysis, risk monitoring, credit risk analysis, liquidity risk analysis, and operational risk analysis. These variables were measured through 55 close-ended questions.

More specifically, risk management practices were measured through six close-ended questions. These questions were gauged through a seven-point interval scale (1, being strongly disagree to 7, being strongly agree). Past literature has shown that many significant studies, i.e., Hussain and Al-Ajmi (2012), Rehman et al. (2017), Al Tamimi and Mazrooei (2007) and Khalid and Amjad, (2012) have used the seven-point Likert scale. Respondents were asked to gauge the application of each item according to the risk management procedures and existing practices of their banks.

Population and Sample

The population of this study consisted of all commercial banks operating in Pakistan, which included the two major categories of banks: Islamic banks and conventional banks. Both types of banks have various products and services which are different from each other, yet they own a large market share and face some common and some specialized types of risk. That is why these two types of banks have been defined as the population of research to draw a comparison of the risk management framework. At the time of the study there were 21 Islamic banks operating in Pakistan, of which four were full-fledged Islamic banks and another 17 conventional banks were running Islamic banking windows. There were 21 conventional banks operating in Pakistan. Therefore, in total, 41 Islamic banks and conventional banks were identified as the population of this study. A stratified random sampling technique was used for sample selection. Out of which eight Islamic banks (four full-fledged Islamic banks and four Islamic banking standalone branches of conventional banks) and seven conventional banks were selected as the study sample based on market share, branch network, portfolio diversification and time, cost, and resource limitation.

In modern banking, a risk management framework operates through three lines of defense. Therefore, risk management is not limited to the risk management department only (KPMG, 2009). Hence, data was collected from the top and middle management of all departments and units of the banks, i.e., risk management departments, trade units, credit departments, treasuries, regional offices, head offices, main branches, and corporate branches. Two hundred and fifty questionnaires were self-administered, of which 220 were returned, but 20 of these, being incomplete were not included in analysis. The response rate was 80 percent.

Method of Data Analysis

Data reliability and multicollinearity among explanatory variables were evaluated through Cronbach's Alpha and the VIF (variance inflation factor) and correlation matrix. Descriptive statistics were used to understand and compare the usefulness of the risk management framework of Islamic banks and conventional banks. Finally, hypotheses were tested through multiple regression analysis and one-way ANOVA.

EMPIRICAL RESULTS AND DISCUSSION

First of all, data reliability and internal consistency of variables were established through the Cronbach Alpha. The coefficient equal to or above 0.70 means that the construct is reliable (Nunnally, 1978). The coefficient for most of the variables was more than 0.70, and these included the understanding and management of risk, risk assessment and analysis, risk management practices, liquidity risk analysis and operational risk analysis. However, the alpha for risk identification was 0.52, but the overall alpha for all the seven dimensions (URM, RI, RAA, RM, CRA, ORA, LRA) of the risk management process was 0.885. Therefore, a lower value for risk identification was acceptable. These results showed that responses among the various items of all the variables were consistent with each other at an acceptable range.

Table 1

Reliability Measures of Study Variables

Variables	Cronbach Alpha	Items
URM	0.767	8
RI	0.520	5
RAA	0.730	7
RM	0.801	6
RMPS	0.851	6
CRA	0.703	7
LRA	0.834	9
ORA	0.891	13

Note. URM= Understanding of risk management, RI= Risk Identification, RAA, Risk assessment and analysis, RM= Risk Monitoring, RMPS= Risk management practices, CRA= Credit risk analysis, LRA= Liquidity risk analysis, and ORA= Operational risk analysis.

Descriptive Analysis

Understanding of Risk Management

Table 2 presents the results of understanding risk, which reveals that the average mean for all eight questions was 5.62 and 5.87 for conventional and Islamic banks, respectively. It indicates that Islamic banks can manage their risk more efficiently and have a better understanding of risk than conventional banks. Khalid and Amjad (2012), Hassan and Al-Ajmi (2012) and Hassan (2009) also concluded the same.

Table 2

Responses to Questions about the URM

No.	Questions	Conventional Banks		Islamic Banks	
		Mean	SD	Mean	SD
1	There is mutual understanding of risk management throughout the bank.	5.13	1.55	5.82	0.64
2	Obligation for management of risk is undoubtedly formulated and understood across the bank.	5.26	1.45	5.80	0.75
3	Accountability for management of risk is clearly designed and understood.	5.34	1.14	5.92	0.61
4	Risk management is important for the success and performance of the bank.	6.20	1.21	6.07	0.69
6	Your bank aims to enlarge the application of innovative risk management techniques.	5.69	1.18	5.78	0.86
7	Your bank emphasizes the constant examination of assessment of risk management procedures.	5.96	1.00	5.92	0.69
8	Use of risk management practices decrease the expenses or anticipated losses.	5.90	1.18	5.85	0.87
	Average	5.62		5.87	

Moreover, the staff of conventional banks were fully cognizant of the importance of the management of risk, but uniformity in the management of risk and its understanding was still lacking. While, the employees of Islamic banks were not convinced that the implementation of sophisticated risk management techniques was the only important objective to improve the management of risk. Conventional banks need to develop a better understanding of risk and risk management throughout all their management levels while, Islamic banks are required to formulate more sophisticated and state of the art risk management technique to keep pace with the competitive financial markets.

Risk Identification

It is the initial stage of risk management and all the other phases of the RMP follows from risk identification. Accurate risk identification leads to efficient risk management. Responses to statements of risk identification (see Table 3) show that the lowest mean value for both Islamic banks and conventional banks was from statement 2, i.e., 3.99 (conventional banks) and 4.04 (Islamic banks).

Table 3

Responses to Questions about the RI

No.	Questions	Conventional Banks		Islamic Banks	
		Mean	SD	Mean	SD
1	Your bank carries out thorough and methodical documentation of its risks.	5.65	1.18	5.91	0.66
2	It is tough for the bank to rank its major risks.	3.99	1.76	4.04	1.40
3	Variations in risk are predicted and recognized along with the bank's role and responsibilities.	5.38	1.27	5.81	0.72
4	Your bank is cognizant of the strengths and weaknesses of the risk management framework of their competitors.	5.67	0.96	5.73	0.92
5	Investment prospects are recognized through the systematic implementation of procedures.	5.43	1.53	5.82	0.70
	Average	5.22		5.58	

It suggests that both types of banks could prioritize their important risks easily; the same was reported by Hassan and Al- Ajmi (2012). Whereas, the highest mean value (5.82) was from statement number 5 about Islamic banks. This indicates that they have efficient procedures for risk identification. In conventional banks the highest means is from statement 4 (5.67), showing that conventional banks were well aware of the strengths and weaknesses of their competitors. Overall, the average means of all the six statements for Islamic banks (5.58) and conventional banks (5.22) indicated that Islamic banks were slightly ahead of conventional banks in the identification of risks. Hence, Islamic banks have been able to recognize the latent risk to attain future objectives. This observation is consistent with the findings in Khalid and Amjad (2012). It also becomes obvious that a better understanding of risk leads to better risk identification.

Risk Assessment and Analysis

The RAA refers to risk quantification and is an important step. It helps to plan strategies to mitigate the risks. Table 4 shows that the average mean of the seven statements is 5.60 and 5.84 for conventional banks and Islamic banks, respectively. It can be inferred that Islamic banks are better than conventional banks in terms of risk assessment and analysis. These results are consistent with the studies by Hussain and Al Ajmi (2012), Khalid and Amjad (2012) and Hasaan (2009). The highest means value for conventional banks (6.15) and Islamic banks (5.92) relates to statement 7, which shows that both types of banks use risk prioritizing treatment for risk analysis.

According to statement 3, conventional banks (mean =5.47) are less likely to use qualitative methods of risk analysis than Islamic banks (mean=5.76). Similarly, statement 2 indicates that Islamic banks are less likely to use quantitative methods to analyze risk because they face risks like legal risks and Shariah compliance risks which cannot be quantified. Moreover, Islamic banks are good at risk prioritizing and the active management of selected risks than conventional banks.

Risk Monitoring

Results of responses to the RM show (see Table 5) that the highest mean value for conventional banks was from statement 1 (5.97) while,

the mean value for this statement was lower (5.80) in Islamic banks. It indicates that risk monitoring has been better implemented in routine reporting systems in conventional banks compared to Islamic banks.

Table 4

Responses to Questions about the RAA

No.	Questions	Conventional Banks		Islamic Banks	
		Mean	SD	Mean	SD
1	Chances of occurrence of various risks are evaluated by your bank.	5.48	1.23	5.87	0.65
2	Bank uses quantitative methods for risk assessment.	5.50	1.10	5.73	0.66
3	Bank uses qualitative methods for risk assessment.	5.42	1.47	5.76	0.82
4	Bank investigates and assesses the opportunities available to attain its goals.	5.57	1.29	5.90	0.70
5	Your bank's stance on the analysis of risk comprises estimation of costs and benefits of dealing with risks.	5.56	1.10	5.79	0.80
6	Analysis of risk embraces the ranking of risks and choosing those which require vigorous management.	5.57	1.05	5.91	0.68
7	Analysis of risk includes the ranking of risk mitigation techniques to address scarce resources for implementation.	6.15	6.05	5.92	0.73
Average		5.60		5.84	

The highest mean value for Islamic banks was 5.91 for statement 3, showing that reporting and communication process plays a significant role in risk monitoring. The results indicate that the control level of risk faced by banks was better in Islamic banks than in conventional banks. Overall, the mean value of all the six statements of risk monitoring was 5.79 for conventional banks and 5.85 for Islamic banks. These results show that both types of banks were quite efficient in monitoring their risks, but the Islamic Banks were a little better than conventional banks in risk monitoring. Such findings appear to be consistent with those in Hussain and Al- Ajmi (2012).

Table 5

Responses to Questions about the RM

No.	Questions	Conventional Banks		Islamic Banks	
		Mean	SD	Mean	SD
1	Efficacy of risk management is monitored as a vital part of regular management reporting.	5.97	1.06	5.80	0.80
2	The control level of bank is suitable for the risk exposure.	5.76	1.00	5.83	0.70
3	Reporting and communication process of your bank is helpful for active risk mitigation.	5.79	0.99	5.91	0.77
4	Banks's response to risk includes an evaluation of the effectiveness of the existing controls and risk management responses.	5.79	1.01	5.88	0.59
5	Identified risks are addressed by the bank through the application of decided strategies.	5.79	1.04	5.79	0.66
6	The bank's stance to risk consists of an estimation of the expenses and paybacks of tackling the risks.	5.64	1.06	5.87	0.75
	Average	5.79		5.85	

Credit Risk Analysis

Credit risk is considered to be one of the most important risk. Table 6 shows that the average mean value for all the seven questions was 5.94 and 5.85 for conventional banks and Islamic banks, respectively. This indicates that conventional banks were slightly better than Islamic banks in credit risk management. These results are similar to the findings in Rehman et al. (2017), but contrary to those in Hussain and Al- Ajmi (2012) because the Islamic banks of Bahrain were much more established and advanced than the Islamic banks in Pakistan. The mean values for all the statements were higher for conventional banks except for statements number 5 and 6. These values show that Islamic banks were more concerned and conscious about a collateral taking policy and strictly follow the internal external rules. Such findings are consistent with the observations in Khalid and Amjad

(2012) because Islamic banks have unique credit products and a distinct set of rules which cannot be violated. However, conventional banks are quite particular about the classification of their borrowers and perform vigilant credit worthiness analysis, conduct better 7 Cs analysis, and are less prone to give loans to the defaulters.

Table 6

Responses to Questions about the CRA

No.	Questions	Conventional Banks		Islamic Banks	
		Mean	SD	Mean	SD
1	Credit worthiness analysis is conducted by the bank prior to the approval of loans.	6.19	0.97	5.86	0.85
2	The bank will commence explicit analysis like client's character, capacity, collateral, capital and condition prior to loan approval.	6.32	0.82	5.99	0.75
3	The bank classifies its debtors based upon risk factor.	6.75	1.10	5.92	0.61
4	It is indispensable to acquire adequate collateral from the small debtors.	5.78	1.29	5.84	0.66
5	It is the bank's strategy to take collaterals for the disbursement of all loans.	5.35	1.50	6.00	0.65
6	The bank prefers to take collaterals against some loans instead of all loans.	5.28	1.44	5.56	1.10
7	The level of loan given to default must be decreased.	5.94	1.13	5.76	0.97
	Average	5.94		5.85	

Liquidity Risk Analysis

Liquidity mismanagement is considered to be one of the major reasons for the financial crisis which occurred from 2007 until 2009. In this study, liquidity risk analysis has been included as an explanatory variable in the risk management process of banks. Results are as shown in Table 7. Overall, the liquidity management of conventional banks was better with an average mean of 5.95. Islamic banks

showed a lower average mean value of 5.89. This was because the Islamic banks had fewer options for liquidity management. Most of the liquidity management products and transactions available in the market were against Shariah law and therefore, Islamic banks could not use these products and transactions. Similarly, investment options were also limited for Islamic banks. As a result, Islamic banks faced liquidity surpluses which led to idle funds and reduced the profitability of the banks.

Table 7

Responses to Questions about the LRA

No.	Questions	Conventional Banks		Islamic Banks	
		Mean	SD	Mean	SD
1	Liquidity is the major predictor of the effectiveness of the banking sector.	6.25	0.89	5.78	0.81
2	Bank management pays special attention to external and internal features causing liquidity risk while developing a liquidity management strategy.	5.91	0.95	5.86	0.75
3	Procedures of the bank explain the overall plan about liquidity.	5.86	1.05	5.93	0.61
4	Strategy is adequately elastic to cope with routine liquidity pressures.	5.80	0.94	5.94	0.60
5	BOD and senior management review the liquidity policy regularly.	6.52	1.09	5.86	0.75
6	It is obligatory on the part of the ALMC to review and recommend a liquidity policy.	5.86	0.96	5.95	0.69
7	Banks have recognized the ways and means to fulfill their funding needs.	5.89	0.98	6.03	0.67
8	Stress testing and Scenario analysis play a central role in the liquidity risk management framework of the bank.	5.76	1.14	5.84	0.72
9	The bank implements stress test according to the Value at Risk (VaR) technique to manage market risk.	5.73	1.16	5.80	0.74
	Average	5.95		5.89	

Table 8

Responses to Questions about the ORA

No.	Questions	Conventional Banks		Islamic Banks	
		Mean	SD	Mean	SD
1	Bank follows the rule of tone at the top	5.64	1.20	5.76	0.73
2	Governance of operational risk is wholly cohesive with overall risk management of the bank.	5.96	0.82	5.84	0.75
3	The bank has a system to identify and manage the inherent risk associated with products, services and business unit level.	5.72	0.98	5.89	0.78
4	Operational risk management framework is chosen by the bank as per type, magnitude, intricacy and risk portfolio of the bank.	5.87	0.99	5.85	0.64
5	ORM policies, processes and procedures are reviewed and updated periodically.	5.87	0.88	5.89	0.65
7	The bank sets and reviews the operational risk limit and tolerance and communicate it to respective members of the bank.	5.69	0.96	5.89	0.79
8	The bank warrants that operational risk for every new product, activity, procedure and system is fully evaluated through an approval procedure.	5.71	1.28	5.92	0.73
9	Operational risk portfolio and substantial exposure to losses is regularly monitored by the bank.	6.00	0.84	6.47	0.73
10	The bank has a reporting mechanism at the board, senior management and business line level that aids the active management of risk.	5.90	1.11	5.92	0.71
11	The bank has robust settings to mitigate and transfer operational risk.	5.86	1.09	5.87	0.68
12	The bank has a contingency plan to function on a constant basis and bound losses on the occurrence of several business interruptions.	5.76	1.12	5.91	0.57
13	The bank strictly follows KYC and Anti-money laundering rules as an ongoing practice.	6.06	1.09	6.01	0.80
	Average	5.92		5.98	

Operational Risk Analysis

Table 8 represents responses to operational risk analysis. It is another significant risk for both Islamic banks and conventional banks. Overall results show that both types of banks were almost equally efficient in operational risk management, but Islamic banks (5.98) were slightly better than conventional banks (5.92). Abdullah et al. (2011), IFSB (2005) and Sundarajan (2007) also suggested that Islamic banks must be more vigilant in operational risk management because the operational risk exposure of Islamic banks is more than conventional banks. Furthermore, this is because the operational risk will also include Shariah non-compliance risk, legal and reputational risk (IFSB, 2005). The highest mean value (6.06) of statement 13 indicates that conventional banks strictly follow the 'know your policy' (KYC) and anti-money laundering rules in the course of routine business to avoid operational risks in the long run. Similarly, the highest mean value of statement 9 (6.47) in Islamic banks is the result of the monitoring the banks carry out on the operational risk profile on a regular basis. Islamic banks also materialize the losses incurred more effectively than conventional banks.

Risk Management Practices

The formulation of effective procedures and frameworks for risk management based upon a good understanding of risk ensures efficient risk management in a bank. It is the implementation of these policies and procedures by the staff at all levels which creates a difference, i.e., effective risk management practices. The results shown in Table 9 reveal that there was not a big difference between both banking systems in terms of their risk management practices. Conventional banks (5.88) were slightly better than Islamic banks (5.85) in the implementation of risk management practices. These results are similar to those in the studies by Khalid and Amjad (2012) and Raza Bilal et al. (2013). It can be postulated that Islamic banks pay more attention to the arrangement of training sessions for the employees, so as to improve the quality of risk management at all levels. Conventional banks in Pakistan need to pay more attention to on job training, by holding seminars and workshops to equip the employees with state-of-the-art knowledge and skills to deal with the various types of risk management tools. As for Islamic banks, they need to improve their organizational performance review and feedback for better management of the various types of risks.

Table 9

Responses to Questions about the RMPS

No.	Questions	Conventional Banks		Islamic Banks	
		Mean	SD	Mean	SD
1	Overall performance of the bank is evaluated by senior management on a regular basis to manage various risk.	5.98	0.86	5.87	0.76
2	The bank has an extremely efficient incessant evaluation/ response on risk practices.	6.35	1.06	5.71	0.87
3	Risk management dealings and policies are recorded by the bank, which is helpful for the staff in managing risk.	5.79	1.11	5.86	0.73
4	The bank's policy emphasizes training programs in the field of risk management.	5.64	1.06	5.80	0.70
5	The bank encourages the employment of extremely competent people in risk management.	5.60	1.13	5.94	0.74
6	Effective risk management is an important goal of the bank.	5.90	0.99	5.90	0.72
Average		5.88		5.85	

Hypothesis Testing

Table 10 presents the results of the regression analysis conducted for the conventional banks of Pakistan. Seven explanatory variables including, the URM, the RI, the RAA, the RM, the CRA, the LRA and the ORA have been used to study the variation in the RMPS. Results reveal that the tolerance coefficient of variables was between 0.389 to 0.574 and VIF value also ranged between 1.742 to 2.572 which indicates that there is no multicollinearity problem among the explanatory variables. The data was considered normal, as 57.9 percent of the variance in the risk management practices of the conventional banks of Pakistan could be explained by the independent variables. The $F (18.085)$ was significant ($p = 0.000$) at 1 percent. It means the overall model was a good fit. The estimated coefficient () for the

RAA (0.374), the RM (0.295) and the LRA (0.342) was significantly related to the RMPS at 10 percent and 1 percent, respectively. The URM (0.336), the RI (0.111) and the CRA (0.054) were positively related to the RMPS, but were insignificant. The ORA (-0.253) was also insignificant and negative. It is obvious from the results that risk assessment and analysis (RAA), risk monitoring (RM) and liquidity risk analysis (LRA) are the most important variables that can influence the risk management practices of conventional banks. These results are partially similar to the ones in Raza Bilal et al (2013) because these researchers suggested that the URM, the RI, the RAA, the RM and the CRA were determinants of the RMPs in Pakistani banks. This difference can be attributed to the introduction of new risk management policies and their implementation phases that vary from time to time.

Table 10

Regression Analysis of the RMP and the RMPS of Conventional Banks

	Estimates	SE	Stand	ANOVA Statistics		Collinearity Statistics	
				t- Stat.	Sig (p)	Tolerance	VIF
(Constant)	-1.170	1.438	β	-0.814	0.418		
URM	0.336	0.470	0.064	0.715	0.476	0.574	1.742
RI	0.111	0.194	0.054	0.572	0.569	0.509	1.965
RAA	0.372	0.204	0.196	1.822	0.072***	0.395	2.530
RM	0.295	0.101	0.296	2.922	0.004*	0.446	2.243
CRA	0.054	0.145	0.040	0.372	0.711	0.389	2.572
LRA	0.342	0.109	0.326	3.143	0.002*	0.426	2.345
ORA	-0.0253	0.566	-0.047	-0.447	0.656	0.414	2.415
R	.0761						
R ²	0.579						
Adj. R ²	0.547						
F- Statistics	18.085*						

Note. * indicates significance at 1percent, ***indicates significance at 10 percent, Dependent variable: RMPS = Risk management practices, Independent variables: URM = Understanding of risk management, RI = Risk Identification, RAA, Risk assessment and analysis, RM = Risk Monitoring, CRA = Credit risk analysis, LRA = Liquidity risk analysis, and ORA = Operational risk analysis.

Table 11 shows the regression results of Islamic banks. The statistical results show that D-W was 2.08, collinearity tolerance ranged between 0.311 to 0.680 and the VIF value of all variables was less than 3. These results show that the data was normal and free from autocorrelation and the multicollinearity problem. The regression results indicate that the 70.06 percent variation in the RMPS of Islamic banks is explained by the URM, the RI, the RAA, the RM, the CRA, the LRA and the ORA, where $F=31.523$ was significant at 1 percent ($p = 0.00$). Among the seven explanatory variables, the RI ($\beta = 0.257, p = 0.00$), the RAA ($\beta = 0.349, p = 0.00$), the CRA ($\beta = 0.252, p = 0.01$), the LRA ($\beta = 0.431, p = 0.00$) and the ORA ($\beta = 0.486, p = 0.00$) were significant and positively related to the RMPS. The URM was however, insignificantly related to the risk management practices of the Islamic banks of Pakistan.

Table 11

Regression Analysis of the RMP and the RMPS of Islamic Banks

	Estimates	SE	Stand. β	ANOVA Statistics		Collinearity Statistics	
				t- Stat.	Sig (p)	Tolerance	VIF
(Constant)	-1.058	0.500		-2.114	0.037		
URM	0.024	0.104	0.019	0.227	0.821	0.457	2.187
RI	0.254	0.070	0.249	3.636	0.000*	0.680	1.470
RAA	-0.355	0.096	-0.324	-3.695	0.000*	0.417	2.400
RM	0.111	0.095	0.100	1.162	0.248	0.431	2.321
CRA	0.247	0.096	0.216	2.571	0.012*	0.455	2.200
LRA	0.432	0.107	0.336	4.051	0.000*	0.464	2.154
ORA	0.478	0.129	0.378	3.716	0.000*	0.311	1.994
R	0.840						
R ²	0.706						
Adj. R ²	0.684						
F Statistics	-	31.546*					

Note. * indicates significance at 1percent, Dependent variable: RMPS = Risk management practices, Independent variables: URM= Understanding of risk management, RI= Risk Identification, RAA, Risk assessment and analysis, RM= Risk Monitoring, CRA= Credit risk analysis, LRA= Liquidity risk analysis, and ORA= Operational risk analysis.

These results are consistent with the findings of Khalid and Amjad (2012). Moreover, credit risk analysis and operational risk analysis are also important factors in addition to the RAA, the RM and the LRA which shows that Islamic banks must pay more attention to credit and operational risk analysis. Islamic Banks have to follow strict credit and operational risk management policies due to their double supervisory structure, i.e., SBP regulation and Shariah Supervision Board. Hence, H¹ of the study is accepted as the risk management practices of conventional banks and Islamic banks of Pakistan, as they were determined by the URM, the RI, the RAA, the RM, the CRA, the LRA and the ORA.

The second hypothesis of the study was tested by a One-way ANOVA. Table 12 shows the results of the ANOVA. Results of the risk identification, risk assessment and analysis, risk monitoring, credit analysis, liquidity risk analysis and operational risk analysis were found to be not significantly different in the Islamic banks and conventional banks of Pakistan. However, the understanding of risk management ($p= 0.007$) and risk identification ($p=0.006$) were significantly different in Islamic banks and conventional banks, a result which is partially consistent with the findings of Hussain and Al- Ajmi (2012) and Al Tamimi and Al- Mazrooei (2007). The RMPS of Islamic banks and conventional banks was also not different from each other. There was no difference in most aspects of the risk management framework of both types of banks because both follow the same banking regulations under similar circumstances, i.e., a “level playing field” (IMF, 2006).

However, the difference in the understanding of risk is because of the different types of products and services which have exposed the banks to various unique and common risks. That is why the risk identification of both types of banks was significantly different from each other. Nevertheless, the exposure of Islamic banks was higher because they faced unique risks like the Shariah compliance risk (comes under operational risk) which led to reputational and displaced commercial risk, i.e., profit sharing between bank and investment account holders where the bank shared the risk with the borrower (Ariffin et al., 2009). On the other hand, conventional banks are less exposed to the risk because their financing products are fully backed by collaterals, which transfer all the risk to the client.

Table12

Analysis of Variance of the Risk Management Framework of Islamic Banks and Conventional Banks of Pakistan

		SS	DF	MS	F	Sig (p)
URM	Between Groups	3.063	1	3.063	7.371	0.007*
	Within Groups	82.270	198	0.416		
	Total	85.333	199			
RI	Between Groups	2.832	1	2.832	7.832	0.006*
	Within Groups	71.598	198	0.362		
	Total	74.430	199			
RAA	Between Groups	0.041	1	0.041	0.215	0.643
	Within Groups	37.509	198	0.189		
	Total	37.550	199			
RM	Between Groups	0.161	1	0.161	0.409	0.523
	Within Groups	77.794	198	0.393		
	Total	77.955	199			
RMPS	Between Groups	0.361	1	0.361	0.870	0.352
	Within Groups	82.219	198	0.415		
	Total	82.580	199			
CRA	Between Groups	0.605	1	0.605	2.341	0.128
	Within Groups	51.174	198	0.258		
	Total	51.779	199			
LRA	Between Groups	0.007	1	0.007	0.022	0.882
	Within Groups	66.636	198	0.337		
	Total	66.644	199			
ORA	Between Groups	0.204	1	0.204	0.595	0.442
	Within Groups	67.862	198	0.343		
	Total	68.066	199			

Note. * indicates significance at 1percent, URM = Understanding of risk management, RI= Risk Identification, RAA, Risk assessment and analysis, RM= Risk Monitoring, RMPS = Risk management practices, CRA= Credit risk analysis, LRA= Liquidity risk analysis, and ORA= Operational risk analysis

CONCLUSION AND IMPLICATIONS

This study has identified the impact of the risk management process, including the liquidity and operational risk on the risk management practices of Islamic banks, as well as conventional banks. It then compared the risk management practices of Islamic banks and conventional banks of Pakistan. For this purpose, data was collected through the 200 questionnaires distributed to the selected respondents from the Islamic banks and conventional banks. The data obtained was analyzed using basic descriptive statistics, One-way ANOVA and Multiple regression analysis.

The descriptive analysis has revealed that both Islamic banks and conventional banks understood that risk management is one of the most important and significant objectives of banks. Islamic banks were a little better than conventional banks in terms of the policies, procedures, monitoring and feedback related to operational risk management. The liquidity management of conventional banks was better than Islamic banks because Islamic banks had fewer options for liquidity management. Conventional banks were managing their liquidity risk in a slightly better way because all the loans were fully backed by the borrower's assets (primary security), which transferred the whole risk to the customer. Islamic banks however, had to share the risk of an asset with their clients because of shariah laws. For instance, the Mudaraba and Musharakah contracts. Islamic banks are better at risk monitoring and risk assessment than conventional banks. Islamic banking is an emerging sector in Pakistan and doing well to earn a reasonable market share and competitive edge over conventional banks. Overall, Islamic banks are better than conventional banks in terms of understanding risk and risk management, risk identification, risk assessment and analysis, risk monitoring and operational risk analysis. On the other hand, conventional banks are ahead of Islamic banks in credit risk analysis, liquidity risk analysis and risk management practices.

The empirical comparison of risk management practices of Islamic banks and conventional banks of Pakistan carried out in this study has revealed that risk assessment and analysis (RAA), risk monitoring (RM) and liquidity risk analysis (LRA) were the most influential determinants of risk management practices of conventional banks. On

the other hand, in Islamic banks the RI, the RAA, the CRA, the LRA and the ORA were found to have influenced their risk management practices. Outcomes of the current study showed that liquidity risk analysis was a significant determinant of risk management practices in both Islamic banks and conventional banks.

Moreover, operational risk analysis had a significant impact on the RMPS in Islamic banks only, suggesting that the operational risk was higher in Islamic banks as compared to conventional banks, which was due to the inclusion of Shariah non-compliance risk, in addition to other common categories of operational risk. Theoretically, the results of this study can be seen as an endorsement of the belief that the various types of risk faced by banks due to the agency problem are resolved through the implementation of the standard risk management process that helps to maintain “institutionalization” in the banking sector. This in turn, will support effective formulation, implementation and monitoring by the regulators.

The outcomes of this research have implications for strategy managers, potential and existing customers, investors and regulators. Investors can decide based on the fact that unsystematic risk is higher in the stocks of Islamic banks, while depositors must be aware that Islamic banks are exposed to more risks and which can reduce their returns. Similarly, debtors have to pay more profit (interest) due to the sharing of asset risk by the bank. Nevertheless, an Islamic bank cannot charge a higher profit (interest) to compete with their counterparts, as this action can reduce their profitability. Islamic banks use the market interest rate as a benchmark and apply them according to the relevant Shariah contract, which cannot be changed over the period of the contract. Simultaneously, Islamic Banks are under pressure to pay profit as per market rate even when banks are not earning enough. Banks do so because they want to retain their investment account holders to be competitive and liquid enough. When the actual profit is not enough to pay profit as per market rate, banks will reduce their profit share and pay more profit, which is more than the agreed ratio, to investment account holders. Hence, the profitability of banks is reduced. The study of liquidity and operational risk, as part of risk management process shows that liquidity risk analysis is one of the important determinants of the RMPS of Islamic banks and conventional

banks, while the operational risk significantly influences the RMPS of Islamic banks. It is an important finding for the top management of banks to formulate more specific and effective strategies to maximize the efficiency of the risk management framework. These results are also an endorsement of the importance of the implementation of Basel II and III, in true Spirit.

This study is also subject to some limitations. During the data collection period, the banking industry was going through some major changes in managerial structure and supervision policies initiated by the central bank. This was the result of the drastic changes occurring in the political scenario, which had led to the economic downfall in Pakistan. This could have affected the responses to the study questionnaire to a certain extent. Moreover, since this was a survey study where respondents were asked to share their own views and perceptions, these views could sometimes be contrary to their actions. Moreover, it is suggested that more researches should be conducted to understand the RMPS in other segments of the financial sector like in SMEs, the development financial institutions and insurance companies. The RMPs cannot be implemented effectively in the absence of good governance. Therefore, it needs to be tested empirically in future studies. The compliance level of banks with the internal and external policies is also a potential research area.

ACKNOWLEDGMENT

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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