A Comparative Study of the Risk Management Practices of Public and Private Commercial Banks in Ethiopia

[1]Abera Bayisasahu Nade, [2]Dr. Dhiraj Sharma

[1]PhD Candidate, Department of School of Management Studies, Punjabi University, Patiala, India
[2]Assistant Professor, Department of School of Management Studies, Punjabi University, Patiala, India.

Abstract: The purpose of this study is to compare the risk management practices of public and private commercial banks operating in Ethiopia in terms of understanding risk and risk management, risk monitoring, risk management practices, risk identification, risk assessment and analysis, and credit risk analysis practices. Data is collected by employing a standardized questionnaire with a 7 point Likert scale and a Mann-Whitney U test was used to analyse the data. The results of the Mann-Whitney U test indicated that public sector commercial banks are performing better in Understanding risk and risk management (URRM), Risk Monitoring (RMO) and Risk management practices (RMP) when compared with the private sector banks. However, statistically, the level of risk identification (RI), risk assessment and analysis (RAA) and credit risk analysis (CRA) practice existed between public and private sector banks is found almost in a similar situation.

Key words - **Risk, Risk management practices, Commercial banks, Ethiopia, Public & Private Commercial banks.**

1) INTRODUCTION

From the viewpoint of banking, a risk is defined as the situation that raises the chance of losses or gains and the uncertain potential events that could manipulate the success of the bank by impacting its profitability and performance resulting either a direct loss of earnings or capital which could threaten the sustainability and profitability of the bank (Khalid & Amjad, 2012; Muhammad et al., 2018; Subedi, 2018). Risk can be influenced by both internal and external factors and exposure to risk can lead to serious consequences on the achievement of an objective. The banking business is highly risk-related because banks are subject to significant uncertainty (Muhammad et al., 2018; Nade & Sharma, 2019; Aneja et al., 2015). In particular, banking is a risk-taking industry and risk-taking is an intrinsic aspect of banking where income is seen as a reward for good risk management (Al-Tamimi & Al-Mazrooei, 2007; Subedi, 2018.

In today's volatile business environment, indeed all banks are facing several risks such as credit risk, foreign exchange risk, market risk, liquidity risk, and interest rate risk (Al-Tamimi & Al-Mazrooei, 2007; Aneja et al., 2015). Due to this reality, Carey (2001) stressed that risk management throughout the banking industry is more critical than those in other parts of the economy. The loss occurred in the financial sector caused the crisis in the whole economy as it was witnessed during the financial crisis of 2007 and 2008. In modern economies, banking business is entirely about risk management because the failure in the banking sector could have a catastrophic effect on the entire financial system (Thiagarajan et al., 2011).

There are two major risk classifications known as systemic and unsystematic risk. The systemic risk is aligned with the overall market and economy as a whole, whereas the unsystematic risk is a threat unique with property or businesses. Risks that can be managed or mitigated are the systematic ones (Al-Tamimi & Al-Mazrooei, 2007). By using risk mitigation and transfer strategies such as avoidance, embrace, elimination, and transition techniques, some of the systemic risks can be diminished. Risk management is characterized as the mechanism undertaken by banks to control their risk and financial losses (Buttimer et al., 2008). In other words, risk management is the process of anticipating risk, the practise of identifying, imagining and analyzing risks and then taking a defensive stride to curb the risk and prepare for future (Muhammad et al., 2018; Subedi, 2018).

Risk management is a continuous process that depends directly on changes in the internal and external environment of banks where effective risk management is accepted as a major cornerstone of bank management by academics, practitioners, and regulators (Hussain and Al-Ajmi, 2012 Nade & Sharma, 2019). The common risk management processes agreed by most are risk identification; risk analysis and assessment; risk evaluation; risk treatment; and risk monitoring and review. Risk management is recognized as a pillar of prudent banking practice (Al-Tamimi & Al-Mazrooei, 2007). Besides, returns of banks' stocks are affected by the bank's risk management practices (Sensarma & Jayadev, 2009). Likewise, effective risk management would result in a balanced trade-off between rewards and risk (Fatemi & Fooladi, 2006). As a result, efficient risk management is a necessity for the banking sector (Hussain and Al-Ajmi, 2012; Carey, 2001; Muhammad et al., 2018). The Basel Committee on Bank Supervision (BCBS), a committee of the world's top bank regulators meeting regularly in Basel, Switzerland, was formed in 1988 to help banks manage their risk effectively. In the same year, the BCBS published the first standard named as The Bank for International Settlement Accord or simply 'The Accord'.

Risk management failure was mentioned as the main cause for the occurrence of the global financial crisis of 2007-2008 (KPMG International, 2009; Sabato, 2009; Holland, 2010). The financial crisis which first erupted in the USA and later spread worldwide has raised a question on the effectiveness of risk management practices employed by the banks, including those applied by well-established banks. After the crisis has erupted, the significance of risk management is increased over time and go along with the issuance of Basel II and III accords (Nazir et al., 2012; Al-Tamimi & Al-Mazrooei, 2007). Since then risk management became a popular research subject ()Al-Tamimi & Al-Mazrooei, 2007).

Although several research studies have been conducted by different research scholars on the area of risk management (such as Nazir et al., 2012; Hussain and Al-Ajmi, 2012; Fernando & Sriyalatha, 2015; Khali and Ali, 2015; Al-Tamimi & Al-Mazrooei, 2007; Khalid and Amjad, 2012; Subedi, 2018; Anwarul et al., 2013; Hassan, 2009; Shafiq and Nasr, 2010; Rehman et al., 2018; Muhammad et al., 2018; 2009;) none of the studies has been conducted on the risk management practices of public and private commercial banks

in Ethiopia. Thus, the objective of this study is to assess and compare the degree to which the public and private commercial banks operating in Ethiopia use effective risk management practices.

2) OBJECTIVE OF THE STUDY

The major objective of this study is to contribute to the debate about risk management by investigating the risk management practices of commercial banks operating in Ethiopia and also to compare the risk management practices of public and private commercial banks.

3) REVIEW OF RELATED LITERATURE

This section of the paper is an attempt to summarize the main findings and conclusions of some selected studies in the area of bank risk management.

Hussain and Al-Ajmi (2012) studied the risk management practices of conventional and Islamic banks operating in Bahrain. The study concluded that the most important risks facing Bahraini banks are liquidity risk, credit risk, and operational risk. The findings of the study further revealed that Islamic banks in Bahrain are found to be significantly different from their conventional counterparts in understanding risk and risk management. The levels of risks faced by these Islamic banks are found to be significantly higher than those faced by conventional banks.

Al-Tamimi & Al-Mazrooei (2007) examined the degree to which the UAE banks use risk management practices and techniques in dealing with different types of risk. The findings of the study indicated that the three most important types of risk facing the UAE commercial banks are foreign exchange risk, followed by credit risk, then operating risk. It is also found that UAE banks are somewhat effective in managing risk. In addition, risk identification and risk assessment and analysis are the most influential variables in risk management practices found in UAE banks. Lastly, the study reported that there is a significant difference between the UAE national and foreign banks in the practice of risk assessment and analysis, and risk monitoring and controlling.

Nazir et al., (2012) studied the risk management practices of both conventional and Islamic banks operating in Pakistan. The results of the study revealed that banks in Pakistan are efficient in credit risk analysis, risk monitoring and understanding the risk. The method of risk monitoring is found to be different in conventional banks than Islamic banks. The study also reported the existence of a significant difference between Islamic and conventional banks of Pakistan in terms of risk management practices.

Khali and Ali (2015) studied the risk management practices of conventional banks in Peshawar region, Pakistan. The study takes risk management as dependent variable and risk assessment, risk identification, risk monitoring, risk analysis and risk management practices as independent variables. The regression output revealed that risk analysis, risk management practices and risk assessment and analysis are found to be significant variables in affecting risk management. Whereas, risk monitoring and risk identification are found to be insignificant variables. This finding clearly indicates that banks can improve their risk management by improving their risk assessment and analysis and risk management practices.

Khalid and Amjad (2012) evaluated the risk management practices of Islamic banks operating in Pakistan. They studied the degree to which Pakistan Islamic banks use risk management practices. Using a standardized questionnaire of 47 questions covering six aspects, the study founded three significant variables that affect risk management practices of Islamic banks. The three significant variables are understanding risk and risk management (URM), risk management (RM) and credit risk management (CRM). The study further found that there is more or less efficient risk management practices in Islamic banks of Pakistan.

Fernando and Sriyalatha (2015) studied the degree to which Sri Lankan banks use risk management techniques and practices. The study also compared the risk management practices of local and foreign banks operating in Sri Lanka. The study found a significant relationship between risk management practices and risk management and understanding risk. The study also found a significant difference in risk management practices between local and foreign banks. Further, the found SWOT analysis, financial analysis, and inspection as the most important risk identification methods followed by local banks. On the other hand, process analysis, audit and financial statement analysis are found as the most important risk identification methods for foreign banks. Due to the existence of efficient risk management practices in foreign banks the study found that foreign banks faced less risk than local banks.

Hassan (2009) evaluated the degree to which Islamic banks use risk management techniques and practices in Brunei Darussalam in dealing with different types of risks. Hassan collected data by using questionnaire covering six aspects; RAA, URM, RI, RM, CRA and RMPs and also methods of risk identification and types of risk facing sample banks. The study founded that foreign exchange risk, credit risk and operating risk as the top most important risks challenged Islamic banks. The study also found Islamic banks as reasonably efficient in managing risk. The study further concluded that risk identification, risk assessment & analysis as the most influencing risk variables.

Rahman, et al., (2016) examined and compared the level of risk management practices between the Islamic banks in Malaysia, and the Islamic banks of Indonesia. The study results revealed the existence of a significant difference in risk management practices (RMP), risk identification and analysis (RAA), and risk control and monitoring (RCM) of Malaysian and Indonesian Islamic banks. The results of regression analysis, further, revealed that in Malaysia the two significant predictors found significant at 5 percent level are risk identification (RI), and risk assessment and analysis (RAA) whereas in Indonesia, risk identification (RI), risk assessment (RAA) and understanding risk management (URM) are found significant predictors of risk management practices. In both countries, URRM, RI and RAA are found overall significant.

Al-Tamimi (2002) investigated the degree to which the UAE conventional banks use effective risk management techniques in dealing with the different types of risk. The study concluded that credit risk is the main risk that UAE conventional banks faced. The main methods used in risk identification were an inspection by branch managers and financial statement analysis, whereas the main techniques used in risk management were credit score, establishing standards, periodical risk reporting, creditworthiness analysis, adoption of a conservative credit policy, and collateral.

Rahman et al., (2015) examined the risk management practices of Islamic and conventional banks in Bangladesh and the study results revealed that regarding awareness among the bank personnel, a significant variation is founded between the Islamic and conventional banks in Bangladesh. Also, conventional banks are founded better than the Islamic ones in risk identification and understanding risk.

Muhammad et al., (2018) examined the determinants of risk management practices by taking understanding risk management, risk assessment & analysis, risk identification, risk monitoring and credit risk analysis as explanatory factors in the commercial banks

of Pakistan. The study results revealed that understanding risk and risk management (URM), risk assessment and analysis (RAA), risk identification (RI), risk monitoring (RM) and credit risk analysis (CRA) are founded having a positive significant impact on the risk management practices (RMP) of commercial banks in Pakistan.

Adam (2012) in his master's thesis entitled "A comparative analysis of the risk in Islamic and conventional banks in Kenya", studied whether Islamic banks in Kenya are riskier than the conventional banks. The results of the study indicated that Islamic banks are riskier than conventional ones in terms of return on asset and operational risk. On the other hand, conventional banks are found riskier than Islamic banks in terms of credit risk and liquidity risk. The findings of the study overall indicated that in Kenya Islamic banks are founded riskier than the conventional banks.

Rehman et al., (2018) compared the risk management practices of Islamic and conventional banks in Pakistan. The study founded, in their liquidity risk analysis and risk governance, a significant difference between the Islamic and conventional banks. The study results also revealed that understanding risk management, credit risk analysis and risk governance are founded as the most significant and contributing variables in the risk management practices of conventional banks. On the other hand, risk identification, risk assessment and analysis, credit risk analysis and risk governance are founded as the most efficient and influential variables in explaining the risk management practices of Islamic banks.

Subedi (2018) studied commercial banks ' risk management practices in Nepal and explored the level of understanding of risk and its management as well as the various aspects of the risk management system. The results of the study revealed that in Nepalese banks credit risk, operational risk and interest rate risk are the most common risks. Besides, the study found that inspection by risk manager, financial statement analysis, audit or physical survey and risk survey are the main risk identification methods. The study further concluded that the most significant variables that affect the risk management practice are: board and senior management's oversight; credit risk management practices; risk identification; risk assessment and measurement; risk monitoring and ownership structure.

Hegde and Subramanian (2016) studied the Risk Management Practices of Indian Banks and their adherence to Basel norms and concluded that Indian banks are affected by several risks and the principal ones are credit risk, interest rate risk, liquidity risk, and operational risk and exchange risk. The study further indicated that Basel II is already enforced in Indian banks and Basel III is also under the adoption stage which is been undertaken phase by phase.

Aneja, Kapoor, and Pahuja (2015) examined how effective are the Indian banks in achieving their objectives in minimizing the effects of risk on the financial results and capital. The findings of the study revealed that insolvency risk of the public sector banks is less as compared to private and foreign banks. In terms of maintaining sound financial health the average performance of state banks is showing an improvement as compared to the nationalized banks. As measured by the Z risk, the overall financial health of all Indian banks group seems to be strong except the year 2013/14.

4) RESEARCH METHODOLOGY

This study used primary data collected through a questionnaire through a survey design. To compare the risk management practices of public and private commercial banks, descriptive statistics and a non-parametric Mann-Whitney U test have been applied to analyse the primary data.

STUDY POPULATION

Ethiopia has 17 commercial banks in total and of these 16 are private commercial banks and one is a public commercial bank. All of these banks are local because the Ethiopian banking system is not open to foreign banks. The study took all of the commercial banks as a target population. All the risk managers, risk officers, risk experts and credit analysts that work at the headquarters of all commercial banks were taken as a population for this study.

STUDY SAMPLE AND SAMPLE SELECTION

The study selected a sample of 14 commercial banks that were established before the year 2010 because commercial banks that are established before the year 2010 have a structured risk management department and lots of experienced staff numbers. Out of the total risk officers, experts and credit analysts exist in all commercial banks, the study collected data from 112 of them. This size is calculated by using Yamane (1973) formula with a 95% confidence level. The Sample size for the study is calculated by using Yamane (1973) formula with a 95% confidence level.

$$n = \frac{N}{1 + N(e)^2}$$

Where
n = sample size,
N = population size,
e = sampling error

SAMPLING TECHNIQUE

As the study was conducted at the institutional level, the non-probability purposive sampling technique was used to select the banks and the respondents. In purposive sampling, the researcher uses his or her own judgment when picking members from the given population, which participate in the study (Black, 2010).

DATA COLLECTION INSTRUMENT

The author adopted a standard modified questionnaire from Al-Tamimi and Al-Mazrooei (2007); Hassan (2009); Shafiq and Nasr (2010); Nazir et al. (2012); Hussain and Al-Ajmi (2012); Khalid and Amjad (2012); Bilal et al. (2013); Rahman et al. (2016); Muhammad et al. (2018); Subedi (2018); etc. The questionnaires contains six aspects of risk management. These are;

Understanding risk and risk management (URRM); ⎤ (Dependent Variable)
Risk identification (RI); ⎦
Risk assessment and analysis (RAA);

Risk monitoring (RMO);
Risk management practices (RMP); and　　　　　(Independent Variables)
Credit risk analysis (CRA).

The six risk management aspects mentioned above constitute 51 structured close-ended questions with a seven scale interval scale. All of the 51 questions are designed based on a seven scale likert scale. Where; 1 = Strongly Disagree; 2 = Disagree; 3 = Disagree Somewhat; 4 = Undecided; 5 = Agree Somewhat; 6 = Agree; and 7 = Strongly Agree.

DATA ANALYSIS PROCEDURES

In this study, the risk management practices of public and private commercial banks were compared with the help of t-test, a non-parametric Mann-Whitney U test. The Mann-Whitney U test is used to compare differences between two independent groups when the dependent variable is either ordinal or continuous, but not normally distributed. The Mann–Whitney test works by looking at differences in the ranked positions of scores in different groups (Field, 2009; Smalheiser, 2017).

RELIABILITY OF THE INSTRUMENTS

The overall Cronbach's alpha for the six dimensions of risk management practice in public banks is 90.6%. On the other hand, the overall Cronbach's alpha for the six aspects of the risk management process in private commercial banks is 91.2%.

RESEARCH HYPOTHESIS

The objective of this study is to compare the risk management practices public & private commercial banks in Ethiopia. To understand the nature of risk management practices between public and private commercial banks, the following hypothesis statements were stated. These hypothesis have been statistically tested with a non-parametric Mann-Whitney U test.

- **Hypothesis 1:** There exists a difference between public and private commercial banks in understanding risk and risk management (URRM).
- **Hypothesis 2:** There exists a difference between public and private commercial banks in risk identification (RI).
- **Hypothesis 3:** There exists a difference between public and private commercial banks in risk assessment and analysis (RAA).
- **Hypothesis 4:** There exists a difference between public and private commercial banks in risk monitoring practice (RMO).
- **Hypothesis 5:** There exists a difference between public and private commercial banks in risk management practices (RMP).
- **Hypothesis 6:** There exists a difference between public and private commercial banks in the practices of credit risk analysis (CRA).

5) DATA ANALYSIS, RESULTS AND DISCUSSION

A non-parametric Mann-Whitney U test was used to check if there exists a statistically significant difference in the risk management practices of public and private commercial banks in Ethiopia.

Table 1 below shows the details of the test results of Mann-Whitney test that compared the risk management practices of public and private commercial banks. The table further indicates that in the case of understanding risk and risk management (URRM) practice, there exists a statistically significant difference between the Public and Private sector commercial banks operating in Ethiopia. The mean rank of understanding risk and risk management shows a significant difference between public (75.67) and private banks (48.83), which is further tested with significance level at 1% (U= 666.50, p-value= 0.000). This indicates that the public sector commercial banks are better in understanding risk and risk management than that of the private sector banks. A Mann-Whitney U test indicated that there is a statistical insignificance difference in risk identification (RI) practice between the mean scores of public sector banks (61.28) and private sector banks (54.59), where U = 1127.00, P = .327.

Table 1: Mann-Whitney U test results of public and private commercial banks

Mann-Whitney U Test Mean Ranks and Test Statistics					
	Types of bank	**N**	**Mean Rank**	**Sum of Ranks**	**Test Statistics**
URRM	Public	32	75.67	2421.50	Man Whitney U = 666.50
	Private	80	48.83	3906.50	Sig. = .00008*
	Total	112			z-score is = -3.94813
RI	Public	32	61.28	1961.00	Man Whitney U = 1127.00
	Private	80	54.59	4367.00	Sig. = .32708
	Total	112			z-score = -0.9822
RAA	Public	32	60.02	1920.50	Man Whitney U = 1167.50
	Private	80	55.09	4407.50	Sig. = .47152
	Total	112			z-score = -0.72136
RMO	Public	32	70.06	2242.00	Man Whitney U = 846.00

	Private	80	51.08	4086.00	Sig. = .00528*
	Total	112			z-score = -2.79203
RMP	Public	32	69.11	2211.50	Man Whitney U = 876.50
	Private	80	51.46	4116.50	Sig. = .00932*
	Total	112			Z-Score = -2.59559
CRA	Public	32	52.33	1674.50	Man Whitney U = 1146.50
	Private	80	58.17	4653.50	Sig. = .38978
	Total	112			z-score = 0.85661
Where: **URRM**: Understanding risk and risk management; **RI**: Risk Identification; **RAA**: Risk Assessment and analysis; **RMO**: Risk Monitoring; **RMP**: Risk management practices; and **CRA**: Credit Risk Analysis. Grouping Variable: Type of Bank: Public and Private commercial bank ** Significant at 5%, * Significant at 1%					

The Mann-Whitney U test result in table 1, moreover, indicated that there is no a statistically significant mean score difference in the risk assessment and analysis (RAA) practice between the public sector banks (60.02) and private sector banks (55.09), where U = 1167.50, P = .472. Furthermore, mean rank of risk monitoring (RMO) practice shows a statistically significant difference between the public sector banks (70.06) and private sector banks (51.08), where U = 846.00, P = .005. In this regard, the public sector banks have a better risk monitoring practice than private sector banks.

Likewise, the mean rank of risk management practice (RMP) shows a statistically significant difference between the public sector banks (69.11) and private sector banks (51.46), where U = 876.50, P = .009. This shows that public sector banks have a better risk management practice than private sector banks. However, the mean rank of credit risk analysis (CRA) practice shows an insignificance difference between the public sector (52.33) and private sector banks (58.17), where U = 1146.50, P = .390.

In summary, due to the existence of a statistically significant difference, it is possible to conclude that the public sector commercial banks are performing better in Understanding risk and risk management (URRM), Risk Monitoring (RMO) and Risk management practices (RMP) as compared to the private sector bank. However, statistically, the level of risk identification (RI), risk assessment and analysis (RAA) and credit risk analysis (CRA) practice existed between public and private sector banks is found almost in a similar situation.

RESULTS OF HYPOTHESIS TEST

Hypothesis 1: There exists a difference between public and private commercial banks in understanding risk and risk management (URRM). Hypothesis 1 is accepted which means that as table 1 shows there is a statistically significant difference between public and private commercial banks in understanding risk and risk management (URRM) practice.

Hypothesis 2: There exists a difference between public and private commercial banks in risk identification (RI). Hypothesis 2 is rejected as the Mann-Whitney U test result shown in table 1 shows there is no statistical significance difference between public and private banks in risk identification (RI) practices.

Hypothesis 3: There exists a difference between public and private commercial banks in risk assessment and analysis (RAA). Hypothesis 3 is rejected as the Mann-Whitney U test result shown in table 1 shows there is no statistical significance difference between public and private banks in risk assessment and analysis (RAA) practices.

Hypothesis 4: There exists a difference between public and private commercial banks in risk monitoring practice (RMO). Hypothesis 4 is accepted as table 1 shows there is a statistically significant difference between public and private commercial banks in risk monitoring practice (RMO) practice.

Hypothesis 5: There exists a difference between public and private commercial banks in risk management practices (RMP). Hypothesis 5 is accepted because as table 1 shows there is a statistically significant difference between public and private commercial banks in risk management practices (RMP) practices.

Hypothesis 6: There exists a difference between public and private commercial banks in the practices of credit risk analysis (CRA). Hypothesis 6 is rejected as the Mann-Whitney U test result shown in table 1 shows there is no statistical significance difference between public and private banks in credit risk analysis (CRA) practices.

6) CONCLUSION

The results of the Mann-Whitney U test conducted to statistically compare the risk management practices of public and private commercial banks indicated that the public sector commercial banks are performing better in Understanding risk and risk management (URRM), Risk Monitoring (RMO) and Risk management practices (RMP) as compared to the private sector bank. However, statistically, the level of risk identification (RI), risk assessment and analysis (RAA) and credit risk analysis (CRA) practice existed between public and private sector banks is found almost in a similar situation. More specifically,

- A statistically significant difference is found between public and private commercial banks in understanding risk and risk management (URRM) practice.
- A statistically significant difference is found between public and private commercial banks in risk monitoring practice (RMO) practice.
- There is a statistically significant difference found between public and private commercial banks in risk management practices (RMP) practices.

- There is no statistical significance difference resulted between public and private banks in risk identification (RI) practices.
- There is no statistical significance difference resulted between public and private banks in risk assessment and analysis (RAA) practices.
- There is no statistical significance difference resulted between public and private banks in credit risk analysis (CRA) practices.

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