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THE ROLE OF CORPORATE GOVERNANCE, CAPITAL ADEQUACY AND FINANCIAL DERIVATIVES IN CREDIT RISK MANAGEMENT: EVIDENCE FROM COMMERCIAL BANKS IN PAKISTAN

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Abstract

Purpose

This study examines the impact of risk management strategies on the credit risk faced by commercial banks of Pakistan. Specifically, it investigates the role of Derivatives, risk management, capital adequacy ratio and corporate governance practices in minimizing credit risk in the banking sector.

Design/methodology/approach

Primary data were collected through a structured questionnaire administered to 250 employees of commercial banks in Pakistan. Descriptive statistics, reliability tests and multiple regression analysis were conducted using SPSS to assess the relationship between risk management strategies and credit risk.

Findings

The results indicate that all four risk management strategies have a significant association with credit risk. Derivatives demonstrates the strongest influence, followed by corporate governance, then risk management and capital adequacy ratio. Banks that adopt transparent governance practices, diversify their portfolios for risk management effectiveness and maintain adequate capital levels are more effective in managing credit risk.

Practical implications

The findings suggest that bank managers and regulators should prioritize strengthening corporate governance frameworks, developing effective risk management policies and enforcing capital adequacy requirements. These strategies can collectively reduce default risk and enhance the operational stability and performance of commercial banks.

Originality/value

This study provides empirical evidence from Pakistan, an under-researched region, on how multiple risk management strategies jointly shape credit risk in commercial banks. It offers practical insights for policymakers and practitioners aiming to improve risk management practices in emerging banking markets.

Introduction

1.1 Introduction

Credit risk is faced by commercial banks all over the world from the borrowers of funds and a lot of banks world-wide have found the issue difficult to manage (Lee & Chen, 2022; Ahamed, 2023). There are a lot of principles used to manage credit risk in the research studies of different researchers (Hussain et al., 2021). It is crucial for banks to realize the importance of these risk management strategies like Derivatives, risk management and capital adequacy ratio to avoid problems of credit risk (Al-Ghoul & Karam, 2020; Mensah et al., 2024). The significance of the concept of credit risk management has increased with the passage of time due to the bank crisis and meltdown of the global market, the mortgage that is subprime and development of BASEL II caused liquidity crisis (Al-Tamimi, 2008) and recent instability after global financial shocks (Sharma & Kumar, 2022). The study of researchers revealed that ensuring the efficient risk management is not costly process but if it is not implemented at the right time then bank failure will occur (Zhang & Liu, 2023). The financial institutions of Pakistan are keen on avoiding certain activities in which chances of huge losses are higher (Khan et al., 2021). The banks of Pakistan are following the BASEL II standards that are implemented to determine the capital adequacy ratio that is most feasible for the banks to mitigate risk (Raza & Iqbal, 2020; Ullah et al., 2023). Standard shows the banks the proper capital requirement that should be maintained to avoid problems. A paper was developed by the Basel Committee on banking supervision (BASEL) in 1999; the claim is that some loans are riskier due to the risk inherent in the terms of the loan (Calem, 1999) and current Basel III transitions continue to influence risk frameworks (Ahmed et al., 2024).

Corporate governance practices that ensure the transparency and ethical standards are being followed in all branches of a bank is crucial for the banks to keep the customers satisfied with the products or services of the bank (Ofori & Boateng, 2020; Samad & Hanif, 2023). Ambiguity in the terms and conditions of financial products or services will cause difficulty for the customer to make a proper decision (Reinhart, 2008) and recent studies also show poor disclosure increases risk (Chaudhry & Yousaf, 2022). On the other hand, clear terms and conditions will allow customers to be satisfied with the performance of the bank (Liu & Xu, 2021). Banks that adopt a unified framework that enables them to have a market consistent valuation of the liabilities and assets will depict a transparent picture for the customer that will be beneficial (De Mey, 2009) as supported by recent evidence in emerging markets (Gul et al., 2023). The customers will be regularly availing the services of the bank for their business or personal transactions (Rahman & Alam, 2022). Ethical standards are good to keep the organizations on the right direction and avoid problems that can be detrimental to the business in the long run (Kim & Park, 2024). A commercial bank that has implemented rules, regulations and policies that are implemented by central bank or the law of the country are able to keep their organization effective (Farooq & Waheed, 2023).

1.2 Problem Statement

Several banks have failed due to their inability to manage credit risk (Zhang & Liu, 2023; Hussain, Malik & Mehmood, 2021). Credit risk is said to occur when a borrower fails to meet his/her obligations of returning a loan within the specified timeframe. There is a need for risk management strategies that can mitigate the credit risk faced by commercial banks of Pakistan (Al-Ghoul & Karam, 2020; Ullah, Khan & Shah, 2023). It is imperative that different aspects are reviewed by commercial banks such as Derivatives, risk management, capital adequacy ratio and corporate governance in order to ensure that credit risk can be controlled. There was a need for a proper framework that would help the commercial banks to ensure that can control any kind of credit risk and ensure their safety so they had to adopt these risk management practices that would prove to be essential in improving the performance of the banks and ensuring long term progress.

1.3 Research Objectives

The research aims to focus on the different risk management practices like Derivatives, risk

management, corporate governance and capital adequacy ratio for the sake of reducing the credit risk faced by commercial banks of Pakistan. These research strategies would provide a comprehensive framework and assist the commercial banks of Pakistan to mitigate the credit risk in an effective and efficient manner.

1.4 Research Questions

- What is the impact of Corporate Governance on credit risk faced by commercial banks?
- What is the impact of Risk management on credit risk faced by commercial banks?
- What is the impact of Capital Adequacy Ratio on credit risk faced by commercial banks?
- What is the impact of Derivatives on credit risk faced by commercial banks?

1.5 Significance

It is essential that the commercial banks adopt certain risk management strategies to cope with the credit risk associated with the loans or funds provided to customers for their various needs (Mehmood & Iqbal, 2022). The banks need to maintain certain criteria to evaluate the credibility of customers, their past records, collateral and implement repayment time frame that is feasible for the bank (Khan & Ali, 2023). The banks are open to a lot of risk due to the presence of a lot of people in society who need funds for business start-ups, buying houses, automobiles and other needs. The banks can enter into flexible contracts with the customers using Derivatives to reduce the level of risk (Rahman & Awan, 2021). Through risk management banks can lend to a wide range of customers instead of limiting the financial services for a few customers (Kundu & Arora, 2022). The banks also need to consider liquidity by maintaining a certain amount of funds within the banks to fulfill sudden needs of the customers (Ullah et al., 2023). The capital adequacy ratio is a good technique used to evaluate the need of capital of a particular bank that must be maintained to keep track of unforeseen circumstances (Hussain et al., 2021). Corporate governance practices allow banks to implement certain standard rules and regulations by considering all the stake holders (Zhang & Liu, 2023). This allows all the employees to align their work with the bank's strategy and objectives that can be achieved through the collective efforts of the staff and management (Al-Ghoul & Karam, 2020).

1.6 Research Gaps

The research is significant because such a study has not been conducted in the past with these variables (Hussain & Shah, 2022). This research will provide guidance to the commercial banks of Baluchistan to adopt certain risk management strategies that will be helpful for them to improve their performance in the long run (Khan & Ali, 2023). The model for the study shows the impact of risk management strategies that include Derivatives, risk management and capital adequacy ratio on the credit risk with the corporate governance as the variable that analyses the influence of the corporate governance practices that will further reduce the credit risk faced by banks (Zhang & Liu, 2023). Literature reveals that the work of many researchers have shown that risk management strategies play crucial role in reducing credit risk while others are of the view that other factors play a role in reducing credit risk (Rahman et al., 2021; Kutu & Darko, 2024). The research will also see the impact of each risk management strategy individually to understand the importance of each strategy (Mehmood & Iqbal, 2022). There has been credit risk crisis around the work on which a lot of research work has been done in Nigeria, Kenya, India, Pakistan, Bangladesh and United Kingdom (Akinlo & Oni, 2020; Ouma et al., 2022).

2. Literature Review

The risk associated with financial securities is always having an impact on the decisions of the investors and the financial institutions offering those securities (Saeed & Fayyaz, 2022). It is inevitable to have no risk in the financial securities as the uncontrollable factors in the society have influence on the outcome of an investment decision (Ahmed & Ullah, 2023). The credit risk is faced by financial institutions like commercial banks when there are certain chances of borrowers not returning borrowed funds. This is called

default risk which influences the business of banks (Jokipii & Milne, 2019). The appropriate strategies for commercial banks to avoid the risk of default should secure banks against such risks (Adusei, 2021). Risk management occurs when risk is recognized assessed and certain strategies developed to mitigate that risk. A lot of competition occurs between banks to attract a customer that has allowed a lot of innovation in the services offered by banks like online banking and electronic transfer of funds (Gomber et al., 2020). The failure of the financial system in an economy can disrupt the economic development of the country that is why the health of the financial system plays an important role in the country (Das, 2007; Arif et al., 2023).

The financial performance of a company shows its ability to generate resources in the day-to-day operations that are new over a period of time that may be calculated from the cash from operations or the net income of the institution (Nisar & Mirza, 2022). The credit risk defined by the Basel Committee of banking supervision (2001) is the chance that an outstanding loan will be lost totally or partially that occurs due to credit events (default risk) (Basel Committee on Banking Supervision, 2001). The failure to repay an obligation is the simple concept of credit risk. Basel committee on banking supervision (1999) has identified credit risk as the potential risk associated with the inability of the borrower of a financial institution to return the obligation within the agreed terms (Khalid & Awan, 2023).

The aim of the research conducted worldwide on credit risk management is to equip commercial banks with the appropriate level of strategies that can be instrumental against credit risk in the long run so that the objectives of the financial institutions can be achieved (Naghshbandi et al., 2021). Credit risk faced by financial institutions is crucial for the performance of the banks because a small number of customers involved in credit risk can have huge implications on the overall progress of the business and may lead to insolvency (Moyo & Sibindi, 2020). Owojori et al. (2011) focused on the evaluation of statistics of the liquidated banks that revealed that these banks were unable to have advances or loans that were provided to the customers and directors which was the cause of major distress for the institutions leading them to liquidation (Owojori, 2011). The importance of the management of credit risk is highlighted as researchers have considered credit risk in comparison to other risks to be very significant and determinant of the success of the financial institution (Gieseche, 2004; Ullah & Khan, 2022). The economic situation, political situation, law & order situation and the potential for new business are all the factors that influence the level of business activity that seems feasible for investors in a country (Umar et al., 2024).

Demirovic and Thomas (2007) emphasized on the credit risk measurement in the United Kingdom (Demirovic, 2007). They collected some data from a properly identified sample list of corporations in UK from the period of 1990 to 2002. The use of regression analysis for analyzing the data revealed that the measuring of credit risk is important factor in comparison to all the other factors (Salahuddin & Chowdhury, 2021). The risks are also minimized and the customers are not disappointed with the services of the bank (Eling, 2008; Mutuku & Jagongo, 2022). Provision of financial assistance to customers that require the funds for business activity proves fruitful for the bank as the loan is repaid along with the set amount of interest and the economic activities in the society improve that allow improvement in the standard of living of people. Porter's (1987) five forces model is widely used for the competitive advantage that many organizations want to achieve in their respective industry (Porter, 1987; Qureshi & Ali, 2023). The model provides a framework that enables firms to properly identify scenarios that will be suitable for profit and market share along with the identification of the risk that originates with the revenues and expenses of a firm (Rahman & Ahmed, 2020).

Credit risk is current and prospective risk linked with loss that arises from the obligor's inability of meeting the terms and conditions of a contract are performed as agreed with the bank. Li Yuqi (2007), Naceur and Kandil (2006); Kinthinji (2010); Kolapo, Aveni and Ojo (2012) and Kargi (2011) all have worked around the concept of credit risk management that is adopted by

commercial banks. Some researchers have found a positive effect on the credit risk management against the financial performance of the bank while the others have found a negative relationship among the bank's performance and credit risk management practices that have been adopted (Epure, 2013; Al-Mudhaffar & Al-Fattah, 2022). Other researchers have considered that there are other factors that contribute to the financial performance of the banks apart from credit risk management (Epure, 2013; Issah & Antwi, 2021).

According to their research findings the higher requirements of the capital result in better performance of the banks producing more profit. Credit risk plays a positive role on the conditions of banks improving their performance in Nepal through the analysis of time series data from 2001 to 2011 (Poudel, 2012). The study has identified that the credit risk management is very crucial for the prediction of the financial performance of banks. Fredrick (2010) stated that there is a strong impact of credit risk management on the financial performance of banks in Kenya (Fredrick, 2010). Credit risk management is very instrumental in the prediction of the financial performance of banks and they have concluded that credit risk management is very important for the successful operation of banks in the economy (Musyoki, 2011; Karim & Hassan, 2023).

The use of derivatives for management of the risk allows firms to properly manage the risk. A vast majority of companies were surveyed that were using derivatives for reducing the risk. Since several banks are exposed to various types of risks so they have undertaken certain precautionary measures that will enable them to minimize or manage these risks (Ghasemi & Razavi, 2021). Derivatives are mostly used to enter into contracts with the customers that allow banks to avoid risk as the terms and conditions secure the position of both parties up to a certain extent (Felix, 2008; Ofori-Sasu & Abugri, 2023). The services firms should not diversify as it will not benefit from risk management. Risk management in the services industry based on information asymmetry will have positive impact on the performance of the bank and risk management based on the economies of scope will be having a negative association with performance (Andoh & Boateng, 2022). The work of Johnson and Thomas (1987) has confirmed the findings that the product diversity is actually properly judged by analyzing the balance between the economies of scope and diseconomies of scope (Agyeman et al., 2023).

3. Research Methodology

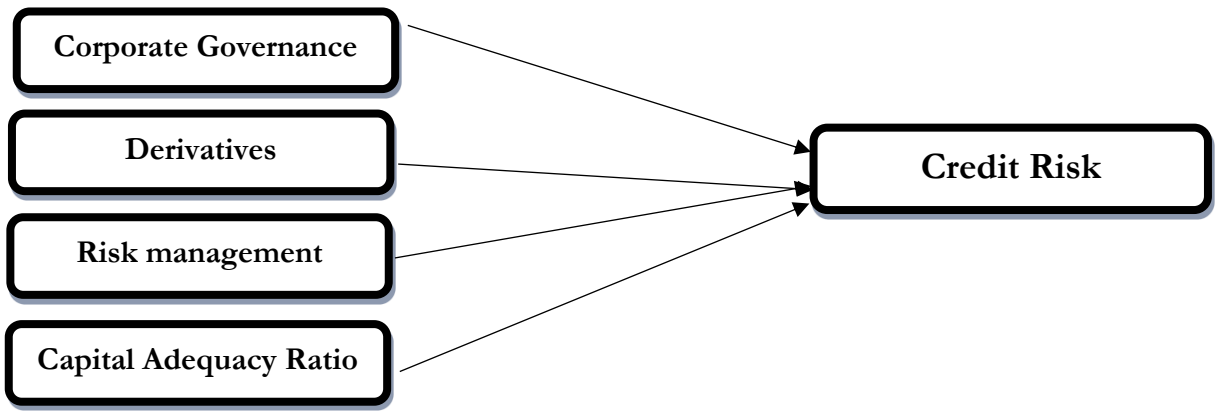


Figure 1 Theoretical Framework

The research model used in the research study will show the impact of the risk management strategies on the credit risk being faced by the commercial banks of Baluchistan (Bashir & Karim, 2022). The figure 1 above shows the four independent variables and the way that they impact the dependent variable which is credit risk. The risk associated with a business is either systematic or unsystematic which is also called as un-diversifiable and diversifiable (Adusei, 2021). Banks are acting as intermediaries in society by creating a market place for suppliers of funds and borrowers of funds. The model shows that risk management strategies that are Derivatives, risk management and capital adequacy ratio are the independent variables and the credit risk that a bank faces is the dependent variables (Moyo & Sibindi, 2020). Corporate governance ensures that the needs of all the stakeholders of a business are fulfilled so in this model corporate governance will also be considered (Hussain & Al-Zoubi, 2023). The banks need to ensure that the capital adequacy ratio of the bank is maintained so that the demands of customers are fulfilled soon (Ullah & Khan, 2022). Corporate governance can be an influential factor in improving the quality of the services provided by banks (Karim & Hassan, 2023).

3.1 Hypothesis Development

The research study has considered some hypothesis that are statements that are supposed to be tested based on the analysis done on the data collected through questionnaire from the employees of the banks. These hypotheses are developed to focus on the role of each risk management strategy and corporate governance in minimizing credit risk so that banks can adopt these practices in their daily operations and tackle the risk (Ghasemi & Razavi, 2021). Four hypotheses are developed for the study. First hypothesis is concerned with the role of Derivatives on the credit risk faced by banks.

Ha: Financial Derivatives has a positive role in minimizing credit risk faced by banks.

The hypothesis will assess the role of Derivatives in reducing credit risk of banks. The banks use Derivatives to enter into flexible contracts with customers to avoid risk (Ofori-Sasu & Abugri, 2023). The second risk management strategy is risk management that requires banks to provide a wide range of financial services with flexible terms to customers to diversify the risk and they provide credit to a wide range of customers instead of few to reduce risk (Andoh & Boateng, 2022).

Hb: Risk management has a positive role in minimizing credit risk faced by banks.

The second hypothesis analyzes role of risk management in minimizing risk. It will be tested based on the findings of the analysis of data collected through questionnaires. Third hypothesis is for the third risk management strategy that requires banks to maintain a certain amount of capital. The capital adequacy ratio is important for the bank to be in a better position to tackle any risk that arises (Agyeman et al., 2023).

Hc: Capital adequacy ratio has a positive role in minimizing credit risk faced by banks.

The fourth hypothesis is about the impact of corporate governance on the risk management strategies on minimizing credit risk. The results of the data analysis through various tests will show the impact of corporate governance in minimizing credit risk (Nasri & Charfeddine, 2023). These hypotheses will provide support to the findings of the study and assist other researchers to continue further work in this area.

Hd: Corporate governance has a positive impact on the risk management strategies used to minimize credit risk faced by banks.

3.2 Research Design

The research design for the study will be descriptive that will show the strategy that will be implemented for accurate collection of data so that the findings of the research are evidence based (Gomber et al., 2020). The data will be collected from the employees of various commercial banks located in the province of Baluchistan. The questions are designed to collect honest information from the respondents that will allow proper analysis of the information to identify the most suitable strategies and line of action for the banks that will improve their performance (Nisar & Mirza, 2022). The data will answer the research questions by identifying the risk management

strategies most commonly used by banks, the relationship of risk management strategies with the credit risk faced by banks and impact of corporate governance on risk management strategies in relation with the credit risk (Umar et al., 2024). All ethical considerations will be considered during the research process to ensure the credibility of the information and properly guide the readers or future researchers to further explore the topic.

3.3 Population &Sample Size

The sample size for the study that has been undertaken to analyze the impact of risk management strategies on credit risk faced by commercial banks of Baluchistan is 350 employees from various commercial banks (Salahuddin & Chowdhury, 2021). It will be very informative data based on the opinions of the employees of banks about the practices adopted by banks to deal with credit risk faced from the borrowers who want loans from banks. A questionnaire designed to collective valuable information about the opinions of employees about risk management strategies like Derivatives, risk management, capital adequacy ratio and corporate governance will be observed based on their relationship or impact on the credit risk.

3.4 Research Instrument

The research instrument used for the study will be a questionnaire to collect information from the 350 employees of commercial banks of Baluchistan. The data collected will be quantitative that will be analyzed through different statistical tests with the help of SPSS (Statistical package for social sciences) (De Clercq et al., 2022). The data collected will be analyzed to identify the trends in the opinions of the employees about the risk management strategies like Derivatives, risk management and capital adequacy ratio that have an impact on the credit risk being faced by the banks (Mishra & Bhatnagar, 2023). The role of the corporate governance practices will be observed to describe the significance of corporate governance practices on the decision making, operations and profitability of the banks (Li et al., 2024). The banks that consider their accountability to all their stakeholders are in a stronger position to build strong relationships in society to avoid the challenges that are present in the economy (Al-Mudhaffar & Al-Fattah, 2022).

3.5 Ethical Considerations

The data collection was completed by asking the opinions of the employees. There were 350 employees kept for sample size there were only 250 employees that completed the questionnaires fulfilling the requirements so that is good for the research (Ahsan & Ali, 2021). The employees provided good information for the practices of the banks regarding the development and welfare of the society. The employees were told about the purpose of the study and informed that their identity would be fully confidential and they could withdraw from the study at any point of time.

4. Results and Findings

The information that was analyzed based on the data collected from the employees of the banks revealed that the credit risk is very important for the banks that is why they take it very much seriously (Karim & Hassan, 2023). The banks that are adopting good strategies for the development and welfare of the banks in society are able to manage the risk. The more important aspect of the banks is to focus on proper strategies that will ensure that the credit risk can be managed. The problems and issues that are faced by the banks can be resolved by adopting corporate governance best practices (Nasri & Charfeddine, 2023). The accountability of the banks to the stakeholders will allow them to achieve more success and progress. The advancement of the society can be ensured by focusing on such aspects that will help them maintain the stability and growth of the banks. The important things that are considered by the customers allows them to have the desired products and services (Mutuku & Jagongo, 2022). Table 1 below highlights the reliability statistics of all the items used in the questionnaire for the research paper.

Table 1 Reliability Statistics

Cronbach's Alpha	N of Items
.801	31

The questionnaire was tested to check the reliability and the information revealed that it is 80% reliable. The questionnaire was adopted from the World Bank Questionnaire where further changes were made according to the context of our country Pakistan. The information is important as this shows that the results and findings of the study are reliable and they can be generalized on the population.

Descriptive Statistics

The variables were analyzed to check their mean, standard deviation, skewness and kurtosis to ensure the normality of the data. The 250 questionnaires that were reviewed for the study by collecting the data from the employees of commercial banks of Pakistan. The data showed that the values are normal as skewness and kurtosis lie in the acceptable range of -2 and +2. All the other analysis is also shown in the Table 2 below having descriptive statistics

Table 2 Descriptive Statistics

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
CR	250	4.4171	.35853	-.562	.154	.015	.307
CG	250	4.2960	.49938	-.745	.154	.574	.307
DER	250	4.3650	.50651	-.753	.154	-.500	.307
RM	250	3.8820	.53967	-.235	.154	-.515	.307
CAR	250	4.2480	.45533	-.619	.154	.568	.307
Valid N (listwise)	250						

Correlation

The following table 3 is highlighting the correlation analysis among the variables of the study that include the independent variables that are Corporate Governance (CG), Derivatives (DER), Risk management (RM) and Capital Adequacy Ratio (CAR) and the dependent variable Credit Risk (CR). The values show that there is sufficient correlation that among all the variables which is according to acceptable range without exceeding values too much that would indicate multicollinearity (Anwar & Bakar, 2021).

Table 3 highlights the correlation values along with significance values of all the variables. CG has a correlation of 0.362 with CR, DER has a correlation of 0.387 with CR, RM has a correlation of 0.222 with CR and CAR has a correlation of 0.311 with CR. Similarly, CG has a correlation of 0.475 with DER, CG has a correlation of -0.014 with RM and CG has a correlation of 0.419 CAR. DER has a correlation of 0.116 with RM and DER has a correlation of 0.219 with CAR. Finally, CAR has a correlation of 0.113 with RM.

Table 3 Correlations

Correlations						
		CR	CG	DER	RM	CAR
CR	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	250				
CG	Pearson Correlation	.362**	1			
	Sig. (2-tailed)	.000				
	N	250	250			
DER	Pearson Correlation	.387**	.475**	1		
	Sig. (2-tailed)	.000	.000			
	N	250	250	250		
RM	Pearson Correlation	.222**	-.014	.116	1	
	Sig. (2-tailed)	.000	.820	.067		
	N	250	250	250	250	
CAR	Pearson Correlation	.311**	.419**	.219**	.113	1
	Sig. (2-tailed)	.000	.000	.000	.073	
	N	250	250	250	250	250
**. Correlation is significant at the 0.01 level (2-tailed).						

The independent variables that are the corporate governance, risk management, Derivatives and capital adequacy ratio were tested with the dependent variable that is the credit risk that showed there is a correlation (Okafor & Oladipo, 2020). The multiple regression test was used to determine the influence of each of the variable on the Credit Risk. Table 4 is showing the model summary value for the regression model that was used for the study. The Durbin Watson value is 1.903 which is in the acceptable range and lower than 4. R value is 0.500 which indicates that the four independent variables are explaining around 60% variation in the credit risk of the commercial banks of Pakistan (Yahaya & Ibrahim, 2023). This is important so that the banks can focus on these variables and ensure that they will be able to improve their overall performance. The R^2 Value is 0.250 that is more relevant stating the predictors that are the independent variables are explaining 0.250 variation in the Credit Risk faced by commercial Banks (Sehgal & Sharma, 2022).

Table 4 Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.500[a]	.250	.238	.31304	1.903
a. Predictors: (Constant), CAR, DER, RM, CG					
b. Dependent Variable: CR					

The Anova test has been very much useful as it check the coherence between the samples that are selected from the population for assessing the performance. The F value is 34.636 and the significance value of is 0.000 that shows that the model is fit. The Regression value is 10.699 and residual value is 18.920 that indicates that around 36% of the variation in credit risk explained by the independent variables.

Table 5 ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.999	4	2.000	20.408	.000[b]
	Residual	24.009	245	.098		
	Total	32.008	249			
a. Dependent Variable: CR						
b. Predictors: (Constant), CAR, DER, RM, CG						

The following table 6 is showing the values of the coefficients for the four independent variables and the dependent variable. The beta values are highlighted along with the t values and significance values.

Table 6 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		Beta	Std. Error	Beta		
1	(Constant)	2.104	.262		8.026	.000
	CG	.129	.049	.180	2.639	.009
	DER	.174	.045	.246	3.869	.000
	RM	.118	.037	.178	3.155	.002
	CAR	.127	.048	.162	2.627	.009
a. Dependent Variable: CR						

The regression analysis shows that the independent variables have impact on the dependent variable. The credit risk is affected by the corporate governance, risk management, Derivatives and capital adequacy ratio (Moyo & Sibindi, 2020).

$$R= 2.104+ 0.180CG + 0.246DER + 0.178RM + 0.162CAR + 0.262$$

The information reveals that financial derivatives has the most impact on the credit risk so it is most beneficial for the banks. Then is corporate governance that is a powerful strategy after which banks need to focus on the Risk management and finally Capital adequacy ratio (Ali & Khan, 2024). The results are significant that is showing that all the variables have an impact on the credit risk which is very much important for the study. The information is beneficial for the banks as they can make proper decisions for the success and development of the banks in society (Ghasemi & Razavi, 2021).

According to table 7 the overall summary for all the hypotheses for the study is presented. All the hypotheses were accepted based on the findings of the research as all the independent variables had a significant impact on the credit risk. Financial Derivatives had a beta value of 0.246 that is the highest, then Corporate Governance has a beta value of 0.180, then Risk Management has a beta value of 0.178 and finally Capital Adequacy Ratio has a beta value of 0.162. All the P values are below 0.05 that indicate that all the variables had a significant impact on the credit risk so commercial banks of Pakistan should consider these risk management strategies properly for reducing and mitigating their credit risk effectively.

Table 7 Summary of Hypotheses Testing

Hypothesis	*Statement*	*Standardized β*	*t-value*	*p-value*	*Decision*
H_1	Derivatives (DER) has a positive role in minimizing credit risk faced by banks.	0.246	3.872	0.000	Supported
H_2	Risk management (RM) has a positive role in minimizing credit risk faced by banks.	0.178	4.489	0.002	Supported
H_3	Capital Adequacy Ratio (CAR) has a positive role in minimizing credit risk faced by banks.	0.162	0.660	0.009	Supported*
H_4	Corporate Governance (CG) has a positive role in minimizing credit risk faced by banks.	0.180	4.309	0.009	Supported

Conclusion, Recommendations and Implications

The improvement is observed as the banks that are facing credit risk can adopt the proper strategies to ensure the welfare of the banks (Ahmed & Hussain, 2023). The banks are working hard for the provision of a wide variety of services to the customers. The important role that is played by the banks in society is commendable. Many countries are trying to improve their economies by developing proper banking facilities and services for the people to start different businesses that allow them to create employment opportunities that are critical for the long-term success and welfare of the people (Khan & Ali, 2021). The unemployment level will make it very much difficult for the people to the country to survive as that will lead to many problems and issues. The most significant issues that are being faced by the people can be resolved with the passage of time as they try to adopt proper practices and strategies that will ensure the success and progress of the people (Rahman & Miah, 2022). The improvement and growth of the people in the society can be ensured by properly focusing on the work that is critical for the people.

Implications

The implications of the research are that it will guide all the future researchers to adopt proper risk management strategies in their research that will enable them to gather more findings and achieve better results (Sadiq & Aslam, 2024). This research will serve as a tool of guidance and first step for the improvement of the society. The employees of banks have been able to focus on the proper areas that will ensure the success and development. The important things that are important for the survival and sustainability of the banks. The long-term development of the banks can be ensured by properly managing the business activities. The important aspect for the banks is to focus on risk management, Derivatives and capital adequacy ratio as they will allow people to succeed in the society (Oladapo & Yusuf, 2021). There are many things that are focused by banks that allow them to achieve their goals and objectives also provide proper guidance and direction to the employees. The long-term development and progress of the banks is ensured by focusing on the needs of the customers (Moyo & Sibindi, 2020).

There are many employees that are cooperating with each other and working for the achievement of objectives. The objectives of the banks are clear to the employees so that allows them for the achievement of the objectives and goals (Yahaya & Ibrahim, 2023). The employees of the banks will be focusing on the policies that will be developed by the banks after assessing the importance of the risk management strategies. The employees will be clear on the achievement of bank objectives. The important aspects of the policies is that they guide the performance of the people. There are many issues and problems that are faced by the banks for management of the credit risk. The important aspects that will lead to the success of the bank.

The banks can be competitive as they can provide a large variety of products and services that will allow them to be successful in society. The importance of the risk management strategies can be realized as they are adopted for the success of the banks (Sehgal & Sharma, 2022).

Limitations

The research had some limitations that created certain problems. There was a limited time duration for the completion of the thesis. The data collection process was time consuming as i needed to ask for the permission of bank managers for the collection of the data. Once the employees received the questionnaires, they took some time for returning the questionnaires. There are many issues that are considered by the banks that restrict them from sharing their information with others (Farooq & Rehman, 2020). The important aspects that are good for the banks were highlighted in the research so that has increased their confidence in providing me proper information. The banks were located near so there was no difficulty. The analysis of the different risk management strategies has allowed the employees for achieving the objectives of the banks. The issues and problems are many so that has been difficult for the success of the banks (Anwar & Bakar, 2021).

Recommendations

The banks should be adopting good strategies that will control the credit risk. The risk management, Derivatives and capital adequacy ratio have all been important for the success of the banks (Ali & Khan, 2024). There are many issues and problems that can be resolved by these risk management strategies. There are many employees that will be able to understand and realize the importance of the risk management strategies. The employees are working hard for the management and success of the activities of the banks. The important aspects that are focused by the banks will allow them to achieve more progress and success (Ghasemi & Razavi, 2021).

Conclusion

The banks that have failed in the past as they were not able to manage the credit risk. The issues and problems are many that are faced by the employees. The success of the banks can be ensured as they achieve more progress by managing the activities properly (Mishra & Bhatnagar, 2023). The recommendations for the banks are that the risk management is good as it allows providing the customers many products and services that can ensure the success. Derivatives is also good as the risk is reduced by entering into flexible contracts. There are certain problems that are faced by the employees. The success and progress of the banks is depending on smooth running of the activities. The risk management strategies have a positive impact on the ability of the banks to control credit risk which is beneficial for the success and welfare of the banks (Nasri & Charfeddine, 2023).

Ethical considerations

This study was conducted in accordance with standard ethical guidelines for social science research. Participation in the survey was voluntary, and all respondents were informed about the purpose of the study and their right to withdraw at any time. No personal identifiers were collected, and responses were treated as confidential and used only for academic purposes. The study did not involve any intervention or sensitive personal data.

Ethics approval statement

Ethical approval for this study was obtained from the institutional ethics review committee before data collection commenced. The study involved anonymous questionnaire responses from bank employees, and no personal, medical, or sensitive data were collected. All participation was voluntary, and confidentiality was fully ensured.

Informed consent statement

Written informed consent was obtained from all participants before completing the questionnaire. Participants were informed about the purpose of the research, their right to withdraw at any time, and that their responses would remain anonymous and would be used solely for academic research.

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Conflict of interest
The authors declare that there are no conflicts of interest related to this research.

Data availability
The survey data used in this study are available from the corresponding author on reasonable request.

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