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Identifying customer credit risk factors in public and private banks

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Abstract
The aim of this study is to identify customer credit risk factors in public and private banks. The research method is applicable in terms of purpose, and mixed implementation method (qualitative-quantitative). The statistical population includes 5 experts in the field of banking, selected through purposeful and accessible sampling. The data collection tool is a semi-structured interview and a matrix questionnaire for ranking and evaluating indicators. Using structural analysis and systematic modeling methods, data related to bank customers' credit risk was collected and analyzed. First, the dimensions and indicators affecting credit risk were identified and then pairwise comparisons were performed using the Delphi method and expert opinions. In the next stage, the effectiveness and impact of the variables were determined using the MICMAC method and the variables were categorized into one of four groups based on influence and dependence: autonomous, dependent, linked, and key. The results showed that variables such as employment and stable income, adequate housing, and fair distribution of infrastructure facilities and services were identified as key and effective variables in reducing credit risk. Also, variables such as external conditions and type of activity were included in the group of dependent and independent variables. This research can help bank managers and policymakers in improving credit risk assessment methods and making appropriate decisions.

Keywords:
Risk,
Credit Risk,
Volume of Activity,
Working Capital,
Capital Changes

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Extended Abstract

Introduction

In recent years, the discussion of risk and its management has always been considered in financial and banking terms. Risk can be raised in any field. One of the most important of these fields is banks, because banks, on one hand, collect people's deposits and, on the other hand, use these resources to perform banking operations. Therefore, due to the continuous changes in environmental factors and economic systems, different risks always affect the financial structure of banks every day. In the meantime, the Islamic banking and finance system, given its specific characteristics, is also faced with risks whose identification and management are very important, so that any idea and innovation to deal with the issue of risk in the bank requires understanding the basics of risk in banking (Akbarian et al., 2021). Credit risk, which is the probability of non-repayment of customer loans, is considered a very vital issue in the banking industry. This risk occurs when credit recipients are unwilling or unable to repay their debt, which is referred to as default risk and is synonymous with credit risk (Rajabzade et al., 2017). The importance of credit risk management in the Iranian banking industry is becoming more and more apparent, given the worrying statistics of non-performing loans. Studies show that the average percentage of non-performing loans in Iranian banks is significantly higher than international standards. This indicates the weakness of the banking system in credit risk management and the urgent need for improvement in this area (Bashardost et al., 2021). In this regard, customer rating and credit assessment are considered as a fundamental tool in credit risk management. Using this tool, banks can categorize their customers based on credit risk and make more informed decisions about granting facilities. The Ball Committee, as a specialized authority in the field of banking supervision, has developed guidelines and standards for credit risk management. Accordingly, the present study seeks to answer the following question: How to identify customer credit risk factors in public and private banks?

Theoretical Framework

Credit Risk

Credit risk is defined as the risk that the borrower will be unable to pay the principal and interest on his loan or debt according to the terms of the contract. In other words, according to this risk, repayments are either made late or not collected at all. This causes problems in the bank's cash flow. Banks and financial institutions face this risk when the borrower is unable or unwilling to fulfill his obligations to the bank or financial institutions when they fall due. The higher the expected credit risk, the higher the interest rate that lenders (banks and financial institutions) will ask for their capital. Hence, there are numerous models for calculating credit risk such as linear, logistic, artificial neural networks, etc., as well as various solutions and approaches to reduce this risk (Ahmadnejad & Dehghani, 2022). Rudin & Shaposhnik (2023) in a study addressed general rules and explanations for machine learning models for use in credit risk assessment. In this study, a method has been developed to understand specific predictions made by predictive models by building appropriate local models. The focus is on rule-based models that are interpretable and widely used in practice. Several algorithms have been designed to extract such rules from discrete and continuous data sets and their theoretical properties have been studied. Mushafiq et al., (2023) in a study addressed financial performance affected by credit risk in non-financial companies in Pakistan. The main objective of this study is to investigate the relationship between credit risk and financial performance in non-financial companies. Least square dummy variable regression analysis was used to test the relationship between Altman's Z-score model as a proxy for credit risk and return on assets and equity as an indicator of financial performance with control variables of leverage, liquidity and firm size. The findings show that Altman's Z-score, leverage and firm size significantly affect the financial performance of non-financial firms. However, liquidity is insignificant in this study. Altman's Z-score and firm size have shown a positive relationship with financial performance, while leverage has an inverse relationship.

Research Methodology

The research method is applicable in terms of purpose, with mixed implementation method (qualitative-quantitative). The statistical population consists of 5 experts in the field of banking, selected through purposive and accessible sampling. The data collection tool is a semi-structured interview and a matrix questionnaire for ranking and evaluating the indicators.

Research findings

Using structural analysis and systematic modeling methods, data related to bank customers' credit risk were collected and analyzed. First, the dimensions and indicators affecting credit risk were identified, and then pairwise comparisons were made using the Delphi method and expert opinions. In the next stage, using the MICMAC method, the effectiveness and impact of variables were determined, and the variables were categorized into one of four groups based on influence and dependence: autonomous, dependent, linked, and key. The results showed that variables such as employment and stable income, suitable housing, and fair distribution of infrastructure facilities and services were identified as key and effective variables in reducing credit risk. Also, variables such as external conditions and type of activity were placed in the dependent and autonomous variable groups. This research can help bank managers and policymakers improve credit risk assessment methods and make appropriate decisions.

Conclusion

The present research aimed to identify customer credit risk factors in public and private banks. The results of this study are consistent with the results of Piri & Pardeli, Saeed (2022), Fazeli Chahar Mahali & Jalil Tahmasebi (2022), Mohammadi (2022), Rezaei Aghmashadi et al. (2022), Hamidian & Rezaeizad (2022), Rezapour (2022), Xie et al. (2023), Yang et al. (2023), Rudin & Shaposhnik (2023), Okpukpara et al. (2023), Jibrin & Tonbarapa (2023), Mushafiq et al. (2023), and Krivorotov (2023). Okpukpara et al. (2023) showed that credit risk management is affected by various factors and dimensions before and during the COVID-19 period. Loan recovery and ICT management indicators were highly influential during the pandemic. In addition, low agricultural productivity during the pandemic due to various COVID-19 containment measures has created an additional challenge in loan default rates. Furthermore, there has been a lack of ICT management and governance capacity to guide credit and manage portfolio risk during the pandemic. Based on the research results, the following recommendations were made: Each facility should be measured based on risk-adjusted returns. This means that facilities with higher risk should generate higher profits (interest rates) for the bank to be economically justified. Private banks are usually more serious in implementing risk-adjusted capital allocation policies, but state-owned banks should also consider this criterion to measure the performance of their managers.

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Conflicts of Interest

The authors declare that they have no financial or non-financial, personal, professional, or institutional conflicts of interest relevant to this work.

Conflicts of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

AI Use Statement

The authors declare that no generative artificial intelligence (AI) or AI-assisted technologies were used in the preparation, writing, or editing of this manuscript.

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Ethics Approval

All procedures performed in this study were conducted in accordance with the ethical standards of the responsible institutional and national research committee.