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The Impact of Internal Control Systems on Credit Approval Decisions: A Case Study at PT. Bank Sumut Sidikalang Branch

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ABSTRACT: This study evaluates how elements of the internal control system—namely the control environment, communication and information, risk assessment, control activities, and monitoring—impact credit approval decisions at PT. Bank Sumut, Sidikalang Branch. Using a census method, data were gathered from 30 willing employees through questionnaires, interviews, and document analysis. Responses were measured using a Likert scale and analyzed with SMART-PLS 4 through path analysis. The results revealed that the control environment, risk assessment, control activities, and monitoring all had a significant positive influence on credit decision-making. However, information and communication showed a positive but statistically insignificant effect. These findings suggest that robust internal controls play a key role in promoting careful, informed, and responsible credit decisions.

KEYWORDS: Internal Control, Control Environment, Communication & Information, Risk Assessment, Control Activities, Monitoring and Credit Approval Decisions

I. INTRODUCTION

One of the key functions of a bank is providing credit. Credit plays a crucial role in capital formation by financial institutions, particularly banks, to support the public in enhancing business performance. It serves as a tool to boost productivity in the real sector, whether carried out individually or collectively. However, extending credit carries inherent risks, most notably the risk of non-performing loans. The danger of non-performing credit lies in the borrower's inability to repay part or all of the loan. Such defaults often occur due to inadequate or insufficiently rigorous credit approval analysis.

Non-performing loans negatively impact the country, society, and the Indonesian banking sector. A bank's liquidity, solvency, and profitability are heavily influenced by its ability to manage the credit it extends. Therefore, a strong internal control system is essential to ensure sound and secure banking operations. According to Mulyadi (2012), an internal control system includes an organizational structure, methods, and coordinated measures designed to safeguard organizational assets, verify the accuracy and reliability of accounting data, promote operational efficiency, and ensure compliance with management policies.

The banking sector plays a strategic role in supporting economic growth, particularly through the distribution of credit to individuals and businesses. Credit serves as a primary source of income for banks and acts as a vital instrument in stimulating economic activity, especially in the real sector. However, the credit disbursement process must be accompanied by thorough analysis to prevent the risk of non-performing loans (NPLs), which could undermine a bank's financial stability. Bank Sumut, a regional development bank operating in North Sumatra Province, plays a significant role in financing micro, small, and medium enterprises (MSMEs) and other productive sectors. One of its active branches in credit distribution is the Sidikalang Branch, which serves communities in Dairi Regency and surrounding areas. To maintain asset quality and minimize default risk, Bank Sumut applies a credit analysis method based on the prudential banking principle, particularly using the 5C approach: Character, Capacity, Capital, Collateral, and Condition.

The ease of credit approval at Bank Sumut Sidikalang Branch sometimes gives rise to certain issues and risks, particularly concerning whether the bank has implemented prudential principles in accordance with Bank Indonesia's credit policy. To assess whether the credit Approval process for prospective borrowers aligns with the bank's internal control system as outlined in its Manual and adheres to the components of the Committee of Sponsoring Organizations of the Treadway Commission (COSO) framework, an evaluation of the credit approval process is necessary. To better understand the credit distribution trend at Bank Sumut, please refer to the following table:

Table 1. Composition of Loans Disbursed Based on Collectibility at PT. Bank Sumut Sidikalang Branch (In Thousands of Rupiah) Period: 2021 – 2024

Credit Collectibility	2021	2022	2023	2024	2022	2023	2024
Current Loans	1024370.09	1064972.86	111797.22	1229368.05	3.96%	-89.50%	999.64%
DPK	6511.49	6205.07	3810.74	5007.55	-4.71%	-38.59%	31.41%
Substandard Loans	938.89	483.5	1219.32	745.08	-48.50%	152.19%	-38.89%
Doubtful Loans	1025.2	1244.54	870.17	756.19	21.39%	-30.08%	-13.10%
Non-Performing Loans	6863.4	3945.22	3759.47	5745.05	-42.52%	-4.71%	52.82%

Source: PT. Bank Sumut Sidikalang Branch 2025

Based on the data, the non-performing loan category increased in 2024 by 52.82%, primarily due to borrowers' inability to fulfill their repayment obligations. Performing loans also saw a decline in 2023 by 38.59%. Similarly, substandard loans rose significantly by 152.19% in 2023. These issues stem from weaknesses in the internal control procedures, particularly in risk assessment and monitoring. The risk assessment process related to credit activities failed to properly identify and manage potential risks, resulting in loan defaults. Additionally, the monitoring component of interna

l control was not functioning effectively, as credit analysts had not fully implemented direct monitoring during the credit evaluation process. This led to a lack of thoroughness in assessing borrowers' creditworthiness. According to Arens and Loebbecke (2002), the COSO internal control framework emphasizes five key components: Control Environment, Risk Assessment, Control Activities, Information and Communication, and MonitoringThis phenomenon contradicts the internal control theory proposed by Arens and Loebbecke (2002), which states that the components of an internal control system (ICS) are essential to minimize failures. The company has not fully implemented these ICS components in its credit Approval process, leading to borrowers' inability to meet their repayment obligations. This issue poses a significant challenge for the company, which must identify the root causes of the problem. Therefore, the researcher aims to further investigate the factors contributing to the bank's inability to recover the distributed credit, including an analysis of the elements of the internal control system related to credit Approval. Based on the research background, the main problem of this study is:

1.1. Does the control environment affect credit Approval decisions at PT. Bank Sumut Sidikalang Branch?
1.2. Does communication and information influence credit Approval decisions at PT. Bank Sumut Sidikalang Branch?
1.3. Does risk assessment impact credit Approval decisions at PT. Bank Sumut Sidikalang Branch?
1.4. Do control activities affect credit Approval decisions at PT. Bank Sumut Sidikalang Branch?
1.5. Does monitoring influence credit Approval decisions at PT. Bank Sumut Sidikalang Branch?

II. LITERATURE REVIEW

2.1. Credit Scoring Models Theory

The concept of Credit Scoring Models Theory, pioneered by Eisenbeis (1978), is based on philosophical and sociological foundations but serves as an applied theoretical framework derived from statistics, econometrics, and machine learning to assess credit risk. This theory underpins how financial institutions evaluate the creditworthiness of prospective borrowers based on historical data and specific characteristics. The Credit Scoring Models Theory is a credit evaluation model that assesses various factors, including payment history, credit utilization, length of credit history, types of credit accounts, and recent credit inquiries (Xu, Zhang & Feng, 2019). This theory explains that lenders must solve an inference problem to accurately assess the type of borrower. Based on this assessment, lenders set debt pricing to break even in expectation considering the risk of default. In equilibrium, the assessed default risk must align with the borrowers' actual choices (Chatterjee, Corbae & Ríos, 2011).

2.2. Credit Approval Decision

Credit Approval decisions refer to the process carried out by financial institutions (such as banks, financing companies, or other lending entities) to determine whether to approve a loan or credit facility for an individual or organization (Fajriah, Melyana & Triyono, 2024). This process involves several stages, starting from the submission of a credit application by the prospective borrower, assessing creditworthiness based on the factors mentioned above, to the approval or rejection of the credit by the financial institution. The purpose of the credit Approval decision is to minimize the risk of non-performing loans and ensure the financial stability of the institution (Mariena, Susanti & Hidayah, 2023). Simply put, a credit Approval decision is the outcome of an analysis conducted by financial institutions to assess whether a prospective borrower has the capacity and eligibility to receive credit facilities. This decision is based on the consideration of various risk factors to ensure that the loan granted can be repaid without causing losses to the lending institution (Lasena & Ahmad, 2023).

The factors influencing credit decisions are closely related to the 5C principles. The 5Cs stand for Character, Capacity, Capital, Conditions of Economy, and Collateral (Maulana et al., 2024; Oktapiani, 2022; Pratiwi, Hanifah & Ramlan, 2024).

a) *Character*
   One of the elements that banks must consider before Approval credit is an assessment of the prospective borrower's personality/character. A poor character will lead to poor behavior.
b) *Capacity*
   A prospective borrower's business capabilities must also be known to predict their ability to repay their debt. This element should always be present in every loan grant.
c) *Capital*
   A borrower's capital is also an important factor for prospective borrowers to understand. A borrower's capital and financial capacity are directly correlated with their ability to repay the loan. Therefore, the liquidity and solvency of a business entity are crucial.
d) *Condition of the Economy*
   Micro and macro economic conditions are also important factors to analyze before Approval credit, especially those directly related to the borrower's business.
e) *Collateral*
   There is no doubt about the importance of collateral in every loan grant.

2.3. Internal Control System

The Internal Control System is an integral process of actions and activities carried out continuously by management and all employees to provide adequate assurance of achieving organizational goals through effective and efficient activities, reliable financial reporting, safeguarding state assets, and compliance with laws and regulations (SPIP, 2008). Control is any action taken by management, the board, and others to manage risk and increase the likelihood of achieving established goals and objectives (Hendaris & Romli, 2021). Internal control ensures that a company complies with federal and state laws and regulations in managing financial information and sensitive data. Furthermore, a robust internal control program can improve operational efficiency and provide accurate financial reporting during internal or external audits (Kule, Kamukama & Kijjambu, 2022).

According to Saputra & Novita (2023), the COSO internal control components emphasize five elements of internal control, namely:

a) *Control Environment*
   First, the control environment is the environmental conditions of the organization that determine the organizational style that influences awareness of control.
b) *Risk Valuation*
   Risk assessment is a process that includes the identification, analysis, and management of risks faced by management, which may hinder the achievement of organizational goals.
c) *Activity Control*
   Control activities are tools – both manual and automated – that help identify, prevent, or mitigate risks that could hinder the achievement of organizational objectives.
d) *Information & Communication*
   Communication is the exchange of useful information between and among people and organizations to support decisions and coordinate activities.
e) *Monitoring*

Monitoring is the review of an organization's activities and transactions to assess the quality of performance over time and to determine whether controls are effective. Management should focus monitoring efforts on internal control and the achievement of the organization's mission.

Based on the theoretical basis and review of previous research as explained above, the framework of thought in this research is presented as follows:

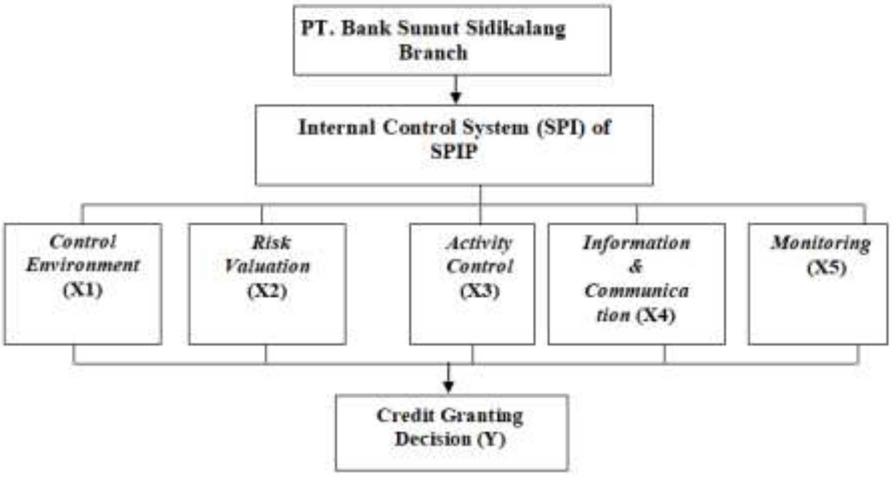

Fig.1. Concepual Framework

The control environment consists of actions, policies, and procedures that reflect the overall attitude of company management, directors, consumers, and business owners toward control over the business unit (Xu & Feng, 2019; Saputra & Novita, 2023). The control environment, in the context of risk and financial management, plays a crucial role in influencing credit decisions made by financial institutions or banks.

Risk assessment by management is part of the implementation and operation of internal controls to minimize risk by identifying relevant risks. Risk assessment is a crucial process in credit decision-making, which serves to evaluate the potential risks that may arise from Approval credit to prospective borrowers (Oktapiani et al., 2022; Maulana, 2024). This risk assessment significantly influences credit decisions because it provides a clearer picture of whether a loan is risky or not, as well as the likelihood of repayment or default. Based on the framework and literature review, the following hypothesis can be formulated:

H1 : The control environment influences the decision to grant credit at PT. Bank Sumut Sidikalang Branch

Credit decisions depend heavily on accurate and timely information about potential borrowers. If information obtained about potential borrowers—such as financial statements, credit history, employment status, or market conditions—is incomplete or delayed, credit decisions can be inaccurate or even incorrect (Mutiara & Masnila, 2022). Conversely, complete and up-to-date information allows financial institutions to accurately analyze a borrower's ability to meet their credit obligations. With accurate information, financial institutions can more accurately assess creditworthiness and minimize the risk of default. Based on the framework and literature review, the following hypothesis can be formulated:

H2 : Communication and Information influence credit Approval decisions at PT. Bank Sumut Sidikalang Branch

Risk assessment allows financial institutions to assess a prospective borrower's creditworthiness based on their ability to repay the loan. This assessment includes an analysis of credit risk, including the prospective borrower's financial capacity, credit history, and income stability (Ridzal et al., 2022). If the assessment results indicate that the credit risk is too high, the financial institution may decide to reject the loan or grant it with stricter terms, such as higher interest rates or additional collateral. Risk assessment helps financial institutions identify the likelihood of a borrower defaulting. Based on the framework and literature review, the following hypothesis can be formulated:

H3 : Risk assessment influences credit Approval decisions at PT. Bank Sumut Sidikalang Branch

Control activities are the policies and controls established by management to achieve its objectives. Information is used to identify, combine, classify, analyze, record, and report transactions (Arfiansyah, 2022). Control activities are actions taken by financial institutions to ensure that established policies and procedures are implemented effectively. Based on the framework and literature review, the following hypothesis can be formulated:

H4 : Control activities influence credit Approval decisions at PT. Bank Sumut Sidikalang Branch

Monitoring conducted after credit is granted allows financial institutions to continuously monitor debtor performance, including their ability to meet their obligations (installment payments). If there are signs of late payments or other financial problems, monitoring allows financial institutions to immediately take preventative or corrective action, such as credit restructuring or adjusting payment terms. This monitoring allows for more informed credit decisions, including decisions to extend credit, increase credit limits, or even terminate credit relationships (Salazar & Figueroa, 2025). The results of monitoring the performance of loans that have been disbursed provide important feedback for future credit Approval policies. Based on the framework and literature review, the following hypothesis can be formulated:

H5 : Monitoring influences credit Approval decisions at PT. Bank Sumut Sidikalang Branch

III. RESEARCH METHODOLOGY

This study uses an associative approach, a type of research that aims to examine the relationship or connection between two or more variables without directly manipulating them. In this study, the population was 30 employees of PT. Bank Sumut Sidikalang Branch. In accordance with the research conducted regarding the Influence of Internal Control System Principles on the Approval of credit, there are five independent variables and one dependent variable, namely the dependent variable in this research, namely the decision to grant credit which will be analyzed.

Table 1. Variables and Indicators

No	Variabel	Dimention	Indikator	Skala
1	**Internal Control System (X)**	**Control environment (X1)**	a. organizational structure of the business unit b. functioning of the board of commissioners and audit committee c. methods of assigning authority and responsibility d. management control methods e. employee practices and policies	Likert
		Information and Communication (X2)	a. identify b. combine c. analyzing d. grouping e. recording and reporting transactions	Likert
		Assessing and Managing Risk (X3)	a. identifying risks b. assessing risks c. managing risks d. controlling risks	Likert
		Control Activities (X4)	a. adequate segregation of duties b. proper authorization of transactions and activities. c. adequate documents and records. d. physical control over assets and records. e. independent checks on the implementation of	Liker t

Monitoring (X5)	a. timely determination of control design and operation b. corrective actions taken c. separate evaluation	Likert
Credit Approval Decision (Y)	a. Character b. Capacity c. Capital d. Condition of Economy e. Collateral	Likert

Source: Literature Review, 2025

Data analysis using the Multivariate Structural Equation Model PLS (SEM-PLS) technique with stages of inner model, outer model and hypothesis testing.

IV. RESULT AND DISCUSION

The results of the validity test after elimination showed that all indicators in this model were declared valid because they had a loading factor value > 0.7 as shown in table 4.15 below:

Tabel 2: Outer Loading

	Environtment Control	Information & Communication	Credit Approval Decision	Activity Control	Risk Valuation	Monitoring
AP2	0.977					
AP3	0.982					
IK1		0.945				
IK3		0.716				
IK4		0.861				
KPK1			0.796			
KPK2			0.891			
KPK5			0.708			
LP1				0.908		
LP4				0.762		
MR1					0.986	
MR2					0.956	

Source : Anaysis by Smart PLS-4 (2025)

The loading factor results show that all indicators in this model are declared valid because they have a loading factor value > 0.7. The variables in this study already have an AVE value > 0.4. The AVE values in the model can be seen in Table 3 below:

A. **Tabel 3 : Nilai Average Variance Extracted (AVE)**

Variabale	Average variance extracted (AVE)
Environtment Control	0.959
Information & Communication	0.716
Credit Approval Decision	0.643
Activity Control	0.702
Risk Valuation	0.950
Monitoring	0.680

Source : Anaysis by Smart PLS-4 (2025)

Thus, it can be concluded that based on the outer loading and AVE values, the research data has fulfilled the convergent validity requirements because it has a value > 0.5. Next, reliability testing was conducted based on Cronbach's alpha value. Composite reliability tests the reliability of indicators within a variable. A variable is said to meet composite reliability if its composite reliability value is >0.7. The composite reliability values for each variable can be seen in Table 4.17 below.

B. Tabel 4: Reliability Testing

Variabale	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)
Environtment Control	0.958	0.970	0.979
Information & Communication	0.817	1.038	0.882
Credit Approval Decision	0.720	0.737	0.842
Activity Control	0.791	0.764	0.824
Risk Valuation	0.982	0.984	0.987
Monitoring	0.730	0.732	0.810

Source : Anaysis by Smart PLS-4 (2025)

Table 4 shows that the composite reliability value has met the requirements, namely more than 0.7. The Cronbach's Alpha value above shows a value above 0.6, which proves that the measurements in this study are reliable. After the data meets the measurement requirements, it can be continued by using the bootstrapping method in SmartPLS 4. The bootstrapping method is a procedure for repeatedly taking new samples of N new samples from the original data of size n, where for a new sample, sample points are taken from the original data one by one up to n times with the taking (Efron & Tibshirani, 1998).

Tabel 5. Hypotesis Testing

Hipotesis	P values	Dicission
Control Activities -> Credit Approval Decisions	0.002	Supporting
Information & Communication -> Credit Approval Decisions	0.980	Reject
Information & Communication -> Credit Approval Decisions	0.007	Supporting
Managing Risk -> Credit Approval Decisions	0.004	Supporting
Monitoring -> Credit Approval Decisions	0.000	Supporting

Source : Anaysis by Smart PLS-4 (2025)

Based on the results in table 4.18, the following results were obtained:

1. The direct influence of the Control Environment on Lending Decisions has a significance value of 0.007 < 0.05, proving that the hypothesis is accepted, meaning the Control Environment has a significant influence on Lending Decisions at PT. Bank SUMUT Sidikalang Branch.
2. The direct influence of Information and Communication on Lending Decisions has a significance value of 0.980 > 0.05, proving that the hypothesis is rejected, meaning Information and Communication do not have a significant influence on Lending Decisions at PT. Bank SUMUT Sidikalang Branch.
3. The direct influence of Risk Management on Lending Decisions has a significance value of 0.004 < 0.05, proving that the hypothesis is accepted, meaning Risk Management has a significant influence on Lending Decisions at PT. Bank SUMUT Sidikalang Branch.
4. The direct influence of Control Activities on Lending Decisions has a significance value of 0.002 < 0.05, proving that the hypothesis is accepted, meaning Control Activities have a significant influence on Lending Decisions at PT. Bank SUMUT Sidikalang Branch.
5. The direct influence of Monitoring on the Decision to Grant Credit has a significance value of 0.000 < 0.05, proving that the hypothesis is accepted, meaning that Monitoring has a significant influence on the Decision to Grant Credit at PT. Bank SUMUT Sidikalang Branch.

The results of the SEM-PLS model prove that the Control Environment has a positive and significant effect on Credit Approval Decisions (H1 can be supported/accepted). These results support the Credit Scoring Models Theory, which can be linked to the control environment in credit Approval. In the context of the control environment, the implementation of credit scoring is part of a control activity that helps prevent subjective or non-data-based credit Approval. A strong control environment encourages banks to use formal instruments such as credit scoring as part of their procedural and internal control systems. The results of this study support several researchers, such as (Mattoasi et al., 2021; Phan et al., 2024; Salazar & Figueroa, 2025), who explain that the control environment is a fundamental element in the internal control system, reflecting organizational values, management integrity, and structures and processes that support good governance. In the banking context, specifically at PT. Bank Sumut Sidikalang Branch, the control environment has a significant influence on the quality and accuracy of credit Approval decisions. The control environment encompasses several important components, such as a clear organizational structure, adequate division of tasks and responsibilities, a leadership style that supports integrity, and standardized work policies and procedures. These components serve as a reference in credit decision-making that considers the principles of prudential banking and risk-based management.

The SEM-PLS model results demonstrate that Information and Communication have a positive but insignificant effect on Credit Approval Decisions (H2 cannot be supported/rejected). Theoretically, these results align with Credit Scoring Models Theory, which explains that information and communication within the internal control system play a crucial role in ensuring that relevant and accurate data is accessible to relevant parties to support informed decision-making. This component includes clarity of information flow, transparency of credit data, and effective communication channels between work units. These research findings contradict those of several researchers (e.g., Xu & Feng, 2019; Saputra & Novita, 2023; Pratiwi et al., 2024), who stated that information and communication are crucial control elements in decision-making. This discrepancy may be due to the ineffectiveness of information and communication within PT. Bank Sumut in establishing internal control. However, these results are consistent with the research of Mariena et al. (2023), who also found that information and communication are not always aligned with existing internal control processes. This is because information and communication are considered as unstructured and dynamic control elements.

The SEM-PLS model results demonstrate that risk management has a positive and significant effect on lending decisions (H3 is supported/accepted). These results support the Credit Scoring Models Theory, which posits that risk management is at the heart of modern banking practices, particularly in lending decision-making. Credit risk—the possibility of a borrower defaulting on a payment obligation—is a key risk that banks must systematically manage. One of the most effective approaches to credit risk management is the application of credit scoring models. These findings align with those of several researchers (Xu & Feng, 2019; Saputra & Novita, 2023; Pratiwi et al., 2024; Oktapiani et al., 2022), who found that risk management is crucial for companies in the control process and for making effective decisions. Companies that are able to mitigate and manage risk will have a positive impact on every decision they make. This aligns with the theory of Thomas, Crook, & Edelman (2002), who explain that credit scoring is a risk assessment technique that uses historical and statistical data to estimate the likelihood of default by potential borrowers. This model creates a numerical score based on several variables, such as payment history, income, age, employment status, and other relevant factors. The higher the credit score, the lower the debtor's risk of default. Risk management is a systematic approach to identifying, assessing, and controlling potential risks that could disrupt the achievement of organizational goals, particularly in lending activities.

The SEM-PLS model results demonstrate that control activities significantly influence credit Approval decisions (H4 is supported/accepted). These results support the Credit Scoring Models Theory, which posits that control activities are a key component of the internal control system, directly directing and overseeing organizational operations, including the credit Approval process. In the banking sector, particularly at institutions like PT. Bank Sumut Sidikalang Branch, control activities are a crucial element in ensuring that credit decisions are made appropriately, accurately, and in accordance with prudential banking principles. These results are consistent with previous research (Chatterjee et al., 2011; Arfiansyah, 2022; Abdat et al. (2024); Cai & Haque, 2024), which found that control activities are crucial for improving internal control, which impacts decision-making. The better the control activities are established, the better the decisions made. Control activities are a crucial part of the internal control system, consisting of policies and procedures designed to ensure that management directives are implemented effectively. In the banking context, particularly at PT. Bank Sumut Sidikalang Branch, control activities are very important in determining the quality of credit Approval decisions because they function to prevent and detect errors or deviations in the financing Approval process.

The SEM-PLS model results demonstrate that fairness significantly influences lending decisions (H5 is supported/accepted). These results support the Credit Scoring Models Theory's view that monitoring is a critical component of an internal control system, aiming to continuously assess the effectiveness and compliance with established organizational policies and procedures. In the context of financial institutions such as PT. Bank Sumut Sidikalang Branch, monitoring serves as an evaluative mechanism to ensure that the lending process complies with prudent principles and applicable regulations. These findings are consistent with previous research (e.g., Xu & Feng, 2019; Saputra & Novita, 2023; Pratiwi et al., 2024; Oktapiani et al., 2022; Maulana, 2024; Ridzal et al., 2022; Fajriah et al., 2024), which explains that monitoring, as a control element, plays a strategic role in the decision-making process. Monitoring is considered crucial because it has a strong impact on decisions made in accordance with existing policies. Monitoring is conducted through various forms, such as periodic internal audits, credit report evaluations, oversight of the credit analysis and execution process, and monitoring the performance of the existing credit portfolio. This function is crucial for identifying system weaknesses, preventing recurring errors, and improving future credit decision-making processes.

CONCLUSIONS

The results of this study indicate of hypothesis testing shows that the Control Environment, Risk Management, Control Activities, and Monitoring have a positive and significant influence on the Credit Approval Decision at PT. Bank SUMUT Sidikalang Branch. Meanwhile, Information and Communication have a positive but insignificant effect. The results of this study indicate that the application of internal control principles in making credit decisions is crucial. Some suggestions for internal control in credit Approval include segregation of duties, proper authorization, adequate documentation, independent checks, and ongoing monitoring. Implementing a robust internal control system will help minimize the risk of bad debts, improve efficiency, and ensure compliance with policies.

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