

# Determinants of Credit Fraud Detection: The Role of Human Resource Performance, Credit Supervision, and Internal Control in Islamic Microfinance Institutions

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## ABSTRACT

This study was conducted to determine and analyze the effect of fraud detection on loan performance at BMT An-Najjah in Central Java because many banks and cooperatives have committed fraud such as fictitious loans, the testing in this study is with three variables tested: human resource performance, credit supervision, and SPI, which can affect the level of fraud detection on loan performance. This research method uses the correlation method, namely the relationship of influence, The sample in this study consisted of 36 respondents who were employees of BMT An-Najjah, selected using the purposive sampling method. The data analysis technique used in this study is quantitative analysis using the Smart PLS version 3 statistical data processing application. The results of this study indicate that there is a positive effect of human resource performance with a p-value of 0.000 on fraud detection of loan performance at BMT An-Najjah in Central Java, while the credit supervision variable p-value of 0.861 and SPI p-value of 0.281 have no impact on fraud detection of loan performance.

**Keywords** : Fraud Detection, Loan Performance, Human Resource Performance, Credit Supervision, Internal Control System.

## INTRODUCTION

Banks in the United States provided credit to customers with high-interest rates that sometimes drove borrowers to despair, so the concept of credit did not become popular until the economic boom in the United States in 1885 when banks had excess liquidity and wanted to lend excess cash (Ditcher, 2003) (F. M. Sari, 2022). In Africa, the concept of credit was highly valued in the 1950s when most banks began opening credit sections and departments to provide loans to white settlers. In Kenya, credit was initially given to the wealthy and large companies and was not popular among the poor (Moti et al, 2013)

The increasingly complex global financial system demands increased transparency and accountability in all financial institution activities. Amidst this economic dynamic, fraudulent practices pose a serious threat to the stability of both conventional and Islamic financial institutions. In the context of Islamic microfinance institutions, such as Baitul Maal wat Tamwil (BMT), the risk of credit fraud is a major challenge that can undermine public trust and undermine the institution's operational sustainability. BMTs play a crucial role in providing Islamic-based financing to low-income communities, but limited human resources (HR), weak credit monitoring systems, and suboptimal implementation of Internal Control Systems (SPI) often create opportunities for fraud, particularly credit fraud.

To understand the factors influencing the effectiveness of fraud detection in Islamic microfinance institutions, this study highlights the role of HR performance, credit monitoring, and internal controls as key determinants of the credit fraud detection process. These three factors interact to shape an effective fraud detection system, as explained by various audit and risk management theories.

Based on data from the Financial Services Authority, the number of borrower accounts as of January 2019 grew by 18 percent compared to the previous period, reaching 5.16 million accounts. Fintech peer-to-peer lending, commonly known as online loans, has grown quite rapidly in recent years. The proliferation of illegal online lending practices (pinjol), according to economic observers, is caused by weak regulations, both in terms of oversight systems and law enforcement against fraudulent companies. So far, the police have uncovered 15 cases of illegal online loans, with 45 suspects in several regions in recent times. The number of lenders and borrowers has also grown by 18.32 percent and 134.59 percent year on year.

From the arising issues, it is necessary to conduct research and evaluation in financing or loans to improve performance in the field of financing or loans, which must test several factors, namely the need for selectivity in credit requirements to meet credit requirements. Credit requirements will determine the credit period and interest rate. The credit term refers to the period during which credit is granted. The duration of the credit period is influenced by the value of collateral, credit risk, account size, and market competition (Ross et al, 2003). Credit or loan requirements are adjusted according to the needs or the amount of the customer's loan, fulfilling the loan amount requirements, and must balance the payment level with the customer's effort level or financial capability, as well as the customer's commitment to the smoothness and continuity of loan repayment.

The credit from customers has other factors that can affect loan performance, namely the factor of the need for credit supervision. Control Credit risk is the risk of loss to an investor arising from a borrower who does not make payments as promised. Such an event is called default. Credit risk can be mitigated by using risk-based pricing, agreements, credit insurance, tightening, and diversification (Ross et al, 2003). Credit risk control or credit supervision from the banking side, both internal and external, involves internal supervision by staff within the office to check BI checking or Bank Indonesia checking to see the history or background of prospective customers in the smoothness of loan payments and to check if there are still loans with other banks, as well as to see and analyze the percentage level of loan repayment ability of prospective customers to improve the performance of credit loan provision.

(Ahmed & Malik, 2015) conducted credit requirements research in Pakistani financial institutions, with the findings indicating that credit requirements improve loan performance. Another study on loan performance using credit requirements as an independent variable, done in Kenyan financial sector institutions, found that credit requirements had a significant positive impact on loan performance. Microfinance organizations' credit requirements do, in fact, have an impact on loan performance.

Research on credit control over loan performance has a significantly positive impact, as studied by (Wachira, 2017) with the research location in Nyeri, Kenya, which states that the influence of credit risk control is also important but still pays attention to acquiring customers. Another study revealed that there is a significant positive effect on loan performance, stating that there is a strong relationship between credit risk control and loan performance (Ross et al, 2003).

High competence, honesty, and work ethics are all essential components of good HR performance. Employees with sufficient knowledge and abilities in risk analysis and financial control may be more effective in detecting symptoms of fraud ( fangela myas Sari, 2022). Furthermore, a business culture that values transparency and responsibility improves HR's capacity to detect fraud. Employees who feel supported and respected by their business are more likely to disclose fraud (Yandi et al., 2025).

On the other hand, SPI functions as a framework that regulates and supervises operational processes within financial institutions. An effective SPI can help reduce the likelihood of fraud by establishing clear procedures, conducting strict monitoring, and providing necessary training for employees (Nasution et al., 2021). With a good SPI in place, financial institutions can ensure that

every loan transaction is conducted in accordance with established policies and procedures, thereby minimizing the risk of fraud.

However, despite the adoption of different control mechanisms, fraud persists. This suggests that there are still gaps in HR performance and SPI that must be addressed. Research demonstrates that combining high HR performance with effective SPI can improve financial institutions' ability to detect and prevent fraud (Wibowo, 2022). As a result, it is critical to conduct a thorough examination of the factors that influence HR performance and SPI in the context of fraud detection, as well as how these two elements work together to produce a safe and transparent loan disbursement environment. With that background, this research aims to explore the relationship between HR performance and SPI in detecting loan performance fraud, as well as to provide recommendations for enhancing the effectiveness of both elements in preventing fraud in financial institutions. This research is expected to contribute to the development of best practices in fraud risk management in the financial sector.

Theoretically, the relationship between these variables can be explained through several conceptual frameworks. The COSO (Committee of Sponsoring Organizations of the Treadway Commission) theory emphasizes the importance of internal control components—including the control environment, risk assessment, control activities, information and communication, and monitoring—in preventing and detecting fraud. The Fraud Triangle Theory (Cressey, 1953) explains that fraud occurs due to pressure, opportunity, and rationalization. Weak internal supervision and control can increase the opportunity for fraud to occur. The Fraud Diamond Theory (Wolfe & Hermanson, 2004) adds the element of individual capability as a fourth factor, which highlights the importance of the quality and integrity of human resources in the fraud detection process.

The purpose of this study is to analyze the influence of human resource performance, credit supervision, and internal control systems on the detection of financing fraud in Islamic microfinance institutions. Practically, the results of this study are expected to contribute to BMT management in strengthening early fraud detection systems, increasing the effectiveness of credit supervision, and improving internal control mechanisms based on sharia principles. Academically, this study is expected to enrich empirical studies on the determinants of fraud detection in Islamic microfinance institutions by using the COSO theory, Fraud Triangle, and Fraud Diamond approaches as the main conceptual foundation.

This research examines the role of HR performance and the assessment of credit risk control, as well as the level and implementation of SPI in improving loan or financing performance in banks and cooperatives. This research has very limited literature, so it is appropriate for researchers to be tested on the performance of HR, credit risk control or supervision, and SPI in improving the detection of loan (credit) performance fraud.

## LITERATURE REVIEW

### Performance

Performance is the achievement of specific job requirements that can ultimately be directly reflected in the output produced, both in quantity and quality (Simamora, 2002).

Balanced Scorecard is a powerful management tool to boost organizational performance. Balanced Scorecard is considered suitable for organizations because Balanced Scorecard not only emphasizes quantitative financial aspects but also qualitative and non-financial aspects (Inapty et al., 2017).

### Fraud

Association of Certified Fraud Examiners (ACFE, 2016) defines fraud as "the misrepresentation of truth or the concealment of material facts to induce another to act to his or her detriment." ACFE categorizes fraud into three groups: (1) Financial Statement Fraud, (2) Asset Misappropriation, (3) Corruption.

### Human Resources



According to Adhi and Suhardjo (2013) in (fangela myas Sari, 2022), human resources or the quality of government apparatus are a crucial resource needed by public sector organizations that function to manage operations in regional government organizations to realize the government's vision and mission.

### **Internal Control System**

According to (Moeller 2012), an internal control system is a process influenced by the board of directors, management, and other personnel, designed to provide reasonable assurance regarding the achievement of objectives in the categories of operational effectiveness and efficiency, financial reporting reliability, and compliance with laws and regulations.

### **Credit Risk Supervision**

Credit risk is the risk that an investor will lose money if a borrower fails to make payments on time. Such an event is referred to as default. Credit risk can also be referred to as default risk. Losses to investors include principle and interest, reduced cash flow, and higher collection costs. Credit risk can be reduced by risk-based pricing, contracts, credit insurance, tightness, and diversification (Ross et al, 2008). Microfinance institutions' credit risk management strategies have an impact on loan performance. A low customer default rate is influenced by strong credit risk management (Moti et al. 2013).

This research has been previously studied by earlier research, which according to the study conducted by (Annisya et al., 2018) has a direct influence of HR competency on the implementation of good governance, which is the influence of HR competency on fraud prevention.

Research on credit requirements has been conducted by Ahmed and Malik (2015) in banking institutions in Pakistan, with results indicating that credit requirements have a positive impact on loan performance. Another study on loan performance with the independent variable of credit requirements, conducted in financial sector institutions in Kenya, states that the results show a significant positive impact of credit requirements on loan performance. The credit requirements formulated by microfinance institutions indeed affect loan performance (Moti et al. 2013).

Research on credit control over loan performance has a significant positive impact, as studied by (Wachira 2017) in Nyeri, Kenya, which states that the influence of credit risk control is also important but still pays attention to acquiring customers. Another study revealed that there is a significant positive impact on loan performance, stating that there is a strong relationship between credit risk control and loan performance. (Ross et al 2003), research conducted by (F. M. Sari 2022) which reveals that credit supervision has a significant impact on loan performance, with high supervision of collateral and completeness of credit application documents being able to improve loan performance.

Research on the internal control system regarding the implementation of good governance is most significant in terms of the internal control system for fraud prevention. (Ardiyanti and Supriadi 2019), internal control has a positive and significant effect on fraud prevention at LPDs in Buleleng Regency, (Ni Komang Irma Puspita and Adiputra 2023)

### **Development of a Hypothesis**

#### **1. Hr Performance Significantly Affects Fraud Detection Loan Performance**

Loan performance can be measured using a balanced scorecard that can assess and measure both financial and non-financial aspects. In this study, performance measurement using a balanced scorecard identifies factors influencing loan performance, including credit requirements and credit control.

The credit requirements formulated by microfinance institutions do indeed affect loan performance (Moti et al. 2013).

Credit or loan requirements adjusted to the needs or the amount of the customer's loan, fulfilling the loan amount requirements, and must balance the payment level with the customer's effort level or financial capability, as well as the customer's commitment to the smoothness and continuity of loan payments.

## **H<sup>1</sup>: HR Performance Significantly Affects Fraud Detection Loan Performance**

### **2. Credit Supervision Significantly Affects Fraud Detection Loan Performance**

Besides credit requirements, there are other factors that can affect loan performance, namely credit control factors that can tighten the control system to improve loan performance.

The research on credit control on loan performance has a significant positive impact, as studied by (Wachira 2017) in Nyeri, Kenya, which states that the influence of credit risk control is also important but still pays attention to acquiring customers.

Internal control needs to be implemented for all cooperatives that are experiencing improvement and growth; good internal control is very much needed as the activities within the cooperative increase. (Overview 2020) Wahyuni Ade

## **H<sup>2</sup>: Credit Supervision Significantly Affects Fraud Detection Loan Performance**

### **2. SPI Significantly Affects Fraud Detection Loan Performance**

Internal control needs to be implemented for all cooperatives that are experiencing improvement and growth; good internal control is very much needed as the activities within the cooperative increase. (Overview 2020) Wahyuni Ade

High loan risk control will influence a low customer default rate (Moti et al. 2013). Research on loan control and its impact on loan performance has a significantly positive effect, as studied by (Wachira 2017) in Nyeri, Kenya, which states that the influence of loan risk control is also important while still paying attention to acquiring customers. while the internal control system for the implementation of good governance is greatest in the internal control system for fraud prevention. (Ardiyanti and Supriadi 2019)

Internal control has a positive and significant impact on fraud prevention at LPDs throughout Buleleng Regency, (Ni Komang Irma Puspita and Adiputra 2023)

## **H<sup>3</sup>: SPI Significantly Affects Fraud Detection Loan Performance**

## **METODE**

### **Type of Research**

The use of this type of research, namely correlational research, is a study that will examine the influence of the relationship between variables, both in terms of connection and impact. (Nurhayati, 2012)

### **Population and Sample**

Population refers to the entire group of people, events, or interesting things that researchers wish to investigate. while the Sample is a part of the population (Sekaran and Bougie 2016). In this study, the population used by the researchers is the employees of the An-Najah Cooperative or BMT in Central Java. The sampling method or sampling technique used in this study is Purposive Sampling, which is sampling based on specific criteria of individuals who can provide the desired or researched information (Sekaran and Bougie 2016).

The criteria for respondents established in this study are as follows:

- a. The employees who perform accounting or financial administration functions
- b. The respondents in this study are the heads or staff of the accounting sub-section or financial administration.
- c. The respondents in this study are heads or staff of the accounting sub-section or financial administration who have a minimum work experience of 3 years.

### **Types and Methods of Data Collection**

Primary data is data collected directly to be analyzed in order to find solutions to the researched problem (Sekaran and Bougie 2016).

## **Analysis Techniques**

The analysis in this study uses statistical data measured with the Warp PLS version 8.0 software. According to Ratmono and Solihin (2013), SEM PLS is a causal modeling approach aimed at maximizing the variance of the criterion latent variable model that can be explained by the predictor latent variable. The steps for testing using Warp PLS version 7.0 in this study are as follows:

### **1. Convergent Validity Test**

This test is conducted to determine that each statement indicator is valid. To determine the validity of the statement indicators, the combine loading value must be observed, which should reach a value between 0.5 and 0.6 for the statement to be accepted and valid (Yamin and Kurniawan 2011). However, if the value is less than 0.5, it must be removed from the research model.

### **2. Reliability Test**

This test is conducted to examine the reliability of a set of indicators. The measure of the reliability of the research instrument is by looking at the values of composite reliability and Cronbach's alpha, both of which must be greater than 0.70 as a condition for reliability. (Ratmono and Solihin 2013)

### **3. Discriminant Test**

This test is conducted to observe the correlation coefficients between latent variables and significance (p-value), and it is also used to evaluate the discriminant validity of the research instrument. The criterion used is the square root of the average variance extracted (AVE) seen in the diagonal column and marked with parentheses, which must be higher than the correlation between latent variables in the same column (above or below it). (Ratmono and Solihin 2013)

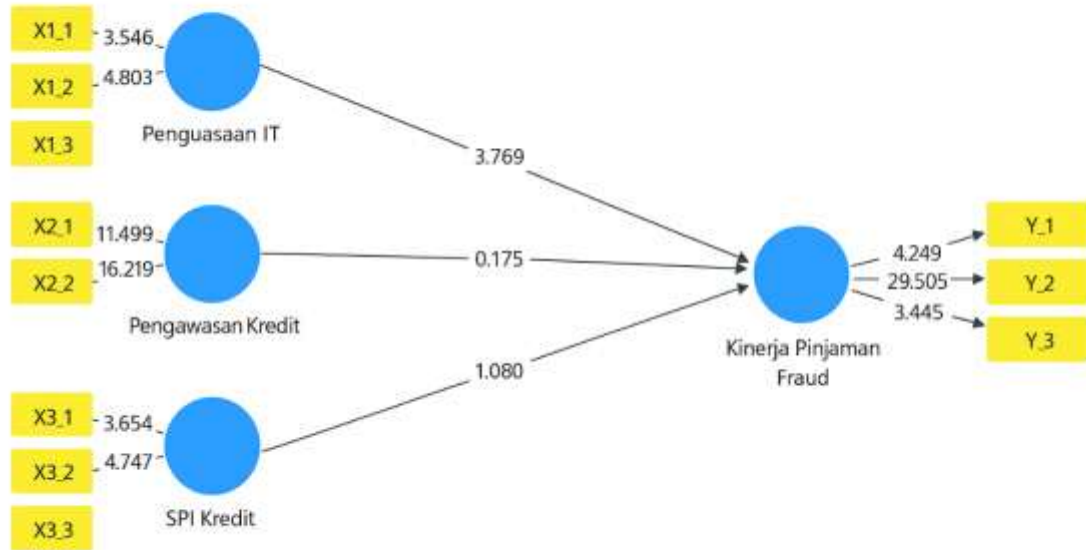
### **4. Structural Model Evaluation**

Evaluation of the Structural Model using the R-Squared determination coefficient, which is used to show what percentage of the variance of the endogenous construct or criterion can be explained by the construct hypothesized to influence it (exogenous or predictor). The higher the R-Squared, the better the model. (Ratmono and Solihin 2013)

### **5. Analysis of the Influence of Independent Variables on Dependent Variables**

The hypothesis is accepted if the t-statistic is higher than the t-table value or by comparing the p-value with the used alpha value. The hypothesis can also be accepted if the t-statistic value > t-table or p-value < 0.05. (Hair et al. 2014).

**RESULT**



**Picture 1 Structural Model Evaluation**

**Table 1. Convergent Validity Test Results**

VARIABLES	PEARSON CORRELATION	P VALUE	DESCRIPTION
<b>HR Performance</b>			
Item 1	0,780	0,000	Valid
Item 2	0,887	0,000	Valid
Item 3	0,902		
<b>Credit Supervision</b>			
Item 1	0,925	0,000	Valid
Item 2	0,950	0,000	Valid
Item 3	0,957	0,000	Valid
<b>Internal Control System Credit with Information Technology</b>			
Item 1	0,758	0,000	Valid
Item 2	0,820	0,000	Valid
Item 3	0,891	0,000	Valid
<b>Credit Fraud</b>			
Item 1	0,830	0,000	Valid
Item 2	0,904	0,000	Valid
Item 3	0,789	0,000	Valid

Source: primary data processed (2025)

The purpose of this test is to ascertain the validity of each statement indication. The total loading value can be used to determine the validity of the statement indicator; if it falls between 0.5 and 0.6, the statement is considered acceptable and legitimate (Yamin and Kurniawan, 2011). However, it must be eliminated or eliminated from the study model if the value is less than <0.5.

According to the results above, every question item is deemed acceptable since its value is greater than or equal to 0.5.

### Reliability and Validity Test

#### Composite Reliability

Composite reliability measures the reliability value between the indicator blocks of the constructs that constitute them. The results of the composite reliability output may be seen in table 2:

**Table 2. Results of Composite Reliability and Validity**

Variables	Composite Reliability	Cronbach's Alpha
HR Performance	0,893	0,822
Credit Supervision	0,961	0,939
Internal Control System with Information Technology	0,864	0,763
Fraud Tax Avoidance	0,880	0,795

Source: primary data processed (2025)

Demonstrates composite reliability that the SPI variable is 0.907, and the financial pressure variable has a composite reliability value of 0.870 and variable Fraud Tax Avoidance value of 0.917. According to these findings, the composite reliability value for each variable is greater than 0.70. Therefore, the study's model satisfies the composite reliability. The data indicates that the average variance extracted (AVE) value for every construct is more than 0.5. Therefore, it can be said that this study's model has strong discriminant validity

### Discriminant Validity

Discriminant validity testing is conducted by examining the average variance extracted (AVE) value for each construct.

**Table 3. Result of Average Variance Extracted (AVE)**

Variables	AVE
HR Performance	0.858
Credit Supervision	0.944
Internal Control System with Information Technology	0.825
Credit Fraud	0.842

Source: primary data processed (2025)

Shows that the values obtained for all variables have a variance Extract (AVE) value for each construct > 0.5. Thus, it can be concluded that the model in this research has good discriminant validity.

### Structural Model Evaluation

**Table 4 Result of R Squared**

Variables	R Square	Adj R Square
HR Performance	0.795	0.776
Credit Supervision		
Internal Control System with Information Technology		
Loan fraud prevention		

Source: Primary Data Processed (2025)

R-squared, the coefficient of determination, indicates the proportion of the endogenous/criterion construct's variation that can be accounted for by the exogenous/predictors that are thought to have an impact on it. A good model is indicated by a higher R-squared. Only endogenous constructs have R-squared. The volatility of the dependent variable can account for 29.00% of the variance of the independent variable, for instance, according to a construct R-squared of 0.290. Testing Hypotheses Using Path Coefficient.

**Table 5. Path Coefficient Results**

	Variable/Construct	P. Value	Path Coefficient	Results
H1	HR Performance → Loan Fraud Prevention	0.000	3,769	Accepted
H2	Credit Supervision → Prevention of loan fraud	0.861	0.175	Rejected
H3	Internal Control System with Information Technology -> Loan fraud prevention	0.281	1,080	Rejected

From the path coefficient above, the value of positive or negative influence can be seen, and the p-value used as a reference for making the decision whether to accept or reject the hypothesis. Hypothesis can be accepted if p value < 0.05.

**a. Hypothesis Testing 1**

H<sub>1</sub>: HR performance has a significant impact on Loan Performance Fraud Detection.

Based on the Path Coefficient Table, it is evident that HR Performance affects fraud detection. Loan Performance has a significant positive effect, as seen from the Human Resource Performance variable with a p-value of 0.000 or less than < 0.05, indicating that the relationship between Human Resource Performance and loan performance is significantly positive. Thus, the first hypothesis is accepted.

**b. Hypothesis Testing 2**

H<sub>2</sub>: Credit Supervision has a significant impact on Loan Performance Fraud Detection.

Path Coefficient Table, it appears that credit supervision does not affect fraud detection. Loan Performance has a significant positive effect, as seen from the credit supervision variable with a p-value of 0.861 or greater than 0.05, indicating that the relationship between credit supervision and loan performance fraud detection is not significant. Thus, the second hypothesis is rejected.

**c. Hypothesis Testing 3**

H<sub>3</sub>: The internal control system has a significant impact on the detection of loan performance fraud.

Result on the Path Coefficient Table, it appears that the Internal control system does not affect fraud detection. Loan Performance has a significant positive effect, as seen from the Internal Control System variable with a p-value of 0.281 or greater than 0.05, indicating that the relationship between the Internal Control System and the detection of loan performance fraud is not significant. Thus, the third hypothesis is rejected.

**DISCUSSION**

**The Influence of HR Performance on Loan Performance Fraud Detection**

The research testing with Path Coefficient, it is evident that HR Performance affects fraud detection. Loan Performance has a significant positive effect, as seen from the Human Resource Performance variable with a p-value of 0.000 or less than < 0.05, indicating that the relationship between Human Resource Performance and loan performance is significantly positive. Thus, the first hypothesis is accepted.

The path coefficient value of 3.769 indicates that the Human Resource Performance variable has a significantly positive effect on the loan performance fraud detection variable.

This result can be interpreted that the more numerous and higher quality human resources handling credit, the higher the detection of loan performance fraud will be, and conversely, if the performance provided is lower or fewer, the detection of loan performance fraud will be lower in Central Java.

If we look at the path coefficient table for the assessment of the HR performance variable, many of the respondents agreed with the statement that

Mastery of IT such as credit applications, banking applications The experience that employees have in handling credit cases in the community as a learning opportunity for the future.

The length of employee tenure will minimize financing risks such as fraud detection risk. Therefore, in this case, it can be concluded that a long tenure of employees has not yet been able to increase the fraud detection rate, where it can already address or minimize the occurrence of credit fraud before it happens.

For IT expertise at BMT An – Najah, there are many who are proficient, which significantly impacts the detection of fraud. Additionally, at BMT An – Najah, there are many employees with extensive experience in handling credit cases, which can minimize the occurrence of loan performance fraud.

The customer will prioritize the value of the collateral, which directly ensures the smooth running of the loan and the borrower's payment commitment can improve loan performance due to the presence of high-value collateral and payment commitment in the form of a loan contract. The duration of the loan period is influenced by the value of the collateral, loan risk, account size, and market competition. (Ross et al 2003), (Moti et al 2013).

This research is in line with previous studies, which according to the research conducted by (Ardiyanti and Supriadi 2019), have a direct influence of HR competence on the implementation of good governance, specifically the influence of HR competence on fraud prevention.

### **The Influence of Credit Supervision or Control on Loan Performance**

From the results of testing the credit supervision variable The Path Coefficient Table shows that credit supervision does not affect fraud detection. Loan Performance has a significant positive effect, as seen from the credit supervision variable with a p-value of 0.861 or greater than 0.05, indicating that the relationship between credit supervision and loan performance fraud detection is not significant. Thus, the second hypothesis is rejected.

The path coefficient value of 0.175 indicates that the credit supervision variable does not have a significant positive effect on the loan performance fraud detection variable. This result can be interpreted that the more extensive and stringent the credit supervision provided, the better the loan performance will be, and conversely, if the credit supervision provided is lower or less frequent, the loan performance in Central Java will be poor.

If we look at the path coefficient table, Credit supervision variable assessment: many respondents agreed with the statement that supervision is conducted to ensure that credit application documents meet the applicable regulations. Supervision is carried out to reduce the risk of loan performance, and Loan monitoring and oversight are conducted every one or three months.

Therefore, in this case, it can be concluded that the level of supervision for collateral and the completeness of credit application documents, as well as the presence or absence of monitoring every three months to follow up on loan data, may not necessarily reduce the risk of bad loans or improve loan performance. This is because complete customer documents and good monitoring within the office, and continuous and routine field surveys may not necessarily lead to better loan performance and increased detection of loan performance fraud.

This research is not in line with previous studies by (Moti et al. 2013) and (Wachira 2017) which revealed that credit supervision has a significant positive effect on loan performance. High loan risk control will influence a low customer default rate (Moti et al. 2013). Research on loan control and its impact on loan performance has a significantly positive effect, as studied by (Wachira 2017) in Nyeri, Kenya, which states that the influence of loan risk control is also important while still considering customer acquisition.

And this research does not align with the study conducted by (F. M. Sari 2022) which revealed that credit supervision has a significant impact on loan performance. the high level of supervision for collateral and the completeness of credit application documents can improve loan performance.

### **The Influence of the Internal Control System on Loan Performance Fraud Detection**

From the results of testing the Internal Control System variable in the Path Coefficient Table, it appears that the Internal Control System does not affect fraud detection. Loan Performance and does not have a significant effect, this can be seen from the Internal Control System variable with a p-value of 0.281 or greater than  $> 0.05$  which indicates that the direction of the relationship between credit supervision and loan performance fraud detection is not significant. Thus, the second hypothesis is rejected.

The path coefficient value of 1.080 indicates that the Internal Control System variable does not have a significant positive effect on the loan performance fraud detection variable. This result can be interpreted that the more Internal Control System credit is provided, the more the detection of loan performance fraud will increase, and conversely, if the Internal Control System credit provided is lower or fewer, the loan performance in Central Java will be low.

If we look at the path coefficient table for the credit supervision variable assessment many respondents agreed with the statement that supervision is conducted to reduce the detection of loan performance fraud and that loan monitoring is carried out every one or three months. Although the Internal Control System created is already very good, it may not necessarily affect the detection of loan performance fraud, because this could be influenced by several factors that have not been explained in this study, where there are still many gaps in the internal control system.

This research is not in line with previous studies. High loan risk control will influence a low customer default rate (Moti et al. 2013). Research on loan control and its impact on loan performance has a significantly positive effect, as studied by (Wachira 2017) in Nyeri, Kenya, which states that the influence of loan risk control is also important while still paying attention to acquiring customers. while the internal control system for the implementation of good governance is greatest in terms of the internal control system for fraud prevention. (Ardiyanti and Supriadi 2019). Internal control has a positive and significant impact on fraud prevention in LPDs throughout Buleleng Regency (Ni Komang Irma Puspita and Adiputra 2023).

## **CONCLUSION**

### **Main Finding**

Based on the results of hypothesis testing, this study concludes that Human Resource (HR) performance has a significant positive effect on the detection of loan performance fraud in Islamic Microfinance Institutions, specifically at BMT An Najah Central Java. Employees' IT proficiency, experience in handling credit cases, and long tenure contribute to their ability to detect and minimize potential fraud in financing activities. Experienced and skilled employees tend to recognize irregularities more effectively and prevent fraud before it occurs.

In contrast, Credit Supervision (CS) and Internal Control System (SPI) were found to have no significant effect on fraud detection. Although regular supervision and document verification are carried out, these practices do not necessarily translate into better fraud detection or improved loan performance. Routine checks and document completeness alone are insufficient to identify or prevent fraudulent behaviors if not supported by analytical capabilities and proactive control mechanisms.

### **Theoretical Implication**

The findings support the Fraud Triangle Theory, emphasizing that the opportunity and rationalization aspects of fraud can be mitigated by competent human resources capable of recognizing and addressing potential fraud indicators. Furthermore, the results highlight the importance of human competence and experience, as described in the Fraud Diamond Theory, as a key factor in enhancing fraud detection capabilities. This suggests that HR quality, particularly IT proficiency and field experience, is a crucial determinant in preventing and identifying fraud within Islamic microfinance contexts.

### Practical Implication

From a practical standpoint, Islamic Microfinance Institutions such as BMTs should prioritize developing analytical and technological competencies among their human resources through continuous training programs. Strengthening IT-based analytical skills will enhance employees' ability to detect anomalies in credit data. Additionally, risk-based internal audits should be implemented to ensure that the internal control system not only fulfills compliance requirements but also functions effectively in identifying potential fraud risks in financing operations.

### Limitation and Future Research

This study is limited to a single institution—BMT An Najah Central Java—which restricts the generalizability of the findings. Future research should expand the sample to include multiple BMTs across different regions to validate and compare results across institutional contexts. Furthermore, incorporating qualitative data, such as interviews or case studies, may provide deeper insights into behavioral and organizational factors influencing fraud detection effectiveness in Islamic microfinance institutions.

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