



Effect of Cashless Payments on Performance of Manufacturing Companies in Rwanda. A Case of Muhanga Food Processing Industries Limited (2021-2024)

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Abstract: The general objective of this research was to assess the effect of cashless payments on performance of manufacturing companies. This study had the following specific objectives: assess the effect of internet banking payment on performance of Muhanga Food Processing Industries Limited, Rwanda, examine the effect of mobile banking payment on performance of Muhanga Food Processing Industries Limited, Rwanda, and analyze the effect of point-of-sale payment on performance of Muhanga Food Processing Industries Limited, Rwanda. This study used theories like Technology Acceptance Model, Diffusion of Innovations Theory and Resource-Based View. The study details the coefficients for each predictor. The unstandardized coefficient for internet banking payment is 0.374, with a standardized coefficient (Beta) of 0.339, and a p value of 0.000. Mobile banking payment has an unstandardized coefficient of 0.169, and a p value of 0.000. Point-of-sale payment shows an unstandardized coefficient of 0.455, and a p value of 0.000. All p values are less than 0.05, indicating that each predictor significantly affects performance. The study confirms that the adoption and implementation of cashless payment methods including internet banking, mobile banking, and point-of-sale systems significantly enhance the operational, financial, and competitive performance of Muhanga Food Processing Industries Limited, Rwanda. The company management should consider expanding point-of-sale terminals across various sales points to further enhance transaction efficiency, customer satisfaction, and inventory management accuracy.

Keywords: Cashless Payments, Internet Banking Payment, Mobile Banking Payment, Point-of-Sale Payment, Performance of Manufacturing Companies

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1. Introduction

Cashless payments in Rwanda have transformed financial transactions, driven by digital innovations and government initiatives to promote financial inclusion. Mobile payment platforms like Mobile Money and point-of-sale systems are widely adopted, enhancing efficiency and reducing reliance on cash. These systems support Rwanda's vision for a cashless economy, boosting business operations and economic growth (Digital Frontiers Institute, 2024).

Through platforms such as internet banking, mobile cards, mobile wallets, and mobile money, institutions like MTN Rwanda and Bank of Kigali have facilitated seamless transactions. Despite challenges like limited privacy and technological dependency, the adoption of cashless financial services supports economic growth. With a focus on inclusivity, these services have empowered businesses and individuals while aligning with national goals for a cashless economy. Efforts to address barriers, including inequality and security concerns, continue to enhance Rwanda's digital payment ecosystem, fostering sustained economic progress (Mupenzi, 2024).

The expansion of the internet and mobile phone usage, coupled with technological advancements, has significantly transformed the payments landscape in Rwanda. Electronic payment systems, recognized for their efficiency and affordability, have enabled both public and private sectors to develop sophisticated digital services. Card-based stored-value payment systems in Rwanda and the existing identity management infrastructure play a crucial role in establishing a comprehensive national electronic payment framework. Electronic transfer funds have been vital in enhancing the country's economic growth, simplifying monetary transactions, and facilitating everyday purchases through systems like credit cards, benefiting both individuals and businesses (Nshunguye *et al.*, 2021).

Despite the progress made in promoting cashless payments, Rwanda's cashless economy faces significant challenges, including limited IT infrastructure coverage in rural areas, low smartphone penetration restricting innovative channels, and high transaction costs, with card-based POS fees ranging from 2.5% to 3.4%. Fraud cases, linked to low financial literacy, continue to rise, involving phishing, PIN exposure, and ID theft. High costs for managing payment channels and core banking systems further strain adoption. These challenges magnify economic inequality, exacerbate technological dependency, and hinder broader adoption of cashless systems (Mupenzi, 2024).

Counterfeit currency poses a significant challenge that can harm Rwanda's economy if not addressed early. Between January and April 2023, 65 cases involving Rwf 1.6 million and US\$700 in counterfeit money were reported, while the same period in 2024 saw 111 cases involving Rwf 5.2 million and US\$36,000. Despite being minimal, these crimes can lead to inflation, reduced trust in paper money, and losses for businesses. Limited ICT infrastructure, poor information security, and data privacy concerns further complicate the fight against economic crimes, requiring improved measures to curb counterfeiting effectively (Nshunguye *et al.*, 2021).

While various studies have explored cashless payments in Rwanda, none have specifically addressed Muhanga Food Processing Industries Limited. This study filled the gap by examining how cashless payment systems impact the operations and financial processes of Muhanga Food Processing Industries.

The general objective of this research was to assess the effect of cashless payments on the performance of manufacturing companies.

This study had the following specific objectives:

1. To assess the effect of internet banking payment on performance of Muhanga Food Processing Industries Limited, Rwanda.
2. To examine the effect of mobile banking payment on performance of Muhanga Food Processing Industries Limited, Rwanda.

3. To analyze the effect of point-of-sale payment on performance of Muhanga Food Processing Industries Limited, Rwanda.

The following hypotheses guided this study:

H₀₁: There is no significant effect of internet banking payment on performance of Muhanga Food Processing Industries Limited, Rwanda.

H₀₂: There is no significant effect of mobile banking payment on performance of Muhanga Food Processing Industries Limited, Rwanda.

H₀₃: There is no significant effect of point-of-sale payment on performance of Muhanga Food Processing Industries Limited, Rwanda.

2. Literature Review

2.1 Theoretical Review

This study used theories like Technology Acceptance Model, Diffusion of Innovations Theory and Resource-Based View.

2.1.1 The Technology Acceptance Model

The Technology Acceptance Model (TAM) was developed in 1986 by Fred Davis as an extension of the Theory of Reasoned Action. TAM focuses on the factors influencing the adoption and usage of technology within organizations or by individuals. The two fundamental constructs of this model are perceived usefulness, which describes the degree to which a user believes that using a system enhances performance, and perceived ease of use, which refers to how effortless the technology is to use. In 1989, Davis refined TAM to include measurement scales, making it one of the most widely cited models for understanding technology adoption. Over time, TAM has been expanded to include external variables such as system quality, user experience, and social influence, which further explain adoption behaviors (O'Dea, 2024).

TAM provides insights into how technological innovations such as cashless payments impact performance. For instance, the adoption of internet banking and mobile payment systems can be analyzed through TAM. Factors like the security of transactions and the speed of payment significantly influence the willingness of manufacturing firms to adopt these systems. Quick transaction approvals, safe logins, and secure payment methods align with perceived ease of use, while improved customer satisfaction and operational efficiency align with perceived usefulness (Moghavvemi *et al.*, 2021).

This study used Technology Acceptance Model to understand how perceived usefulness and ease of use influence the adoption of internet banking, mobile

banking, and point-of-sale systems, examining their impact on performance, including transaction efficiency, quality delivery, and customer satisfaction at Muhanga Food Processing Industries Limited, Rwanda.

2.1.2 Diffusion of Innovations Theory

The Diffusion of Innovations Theory was developed in 1962 by Everett Rogers to explain how new ideas, products, or practices spread within a society or organization over time. The theory identifies five key characteristics influencing the adoption of innovations: relative advantage, compatibility, complexity, trialability, and observability. Relative advantage refers to the perceived benefits of adopting an innovation, while compatibility assesses how well the innovation aligns with existing systems or values. Complexity refers to the difficulty of understanding and using the innovation, trialability considers the extent to which it can be tested, and observability relates to how visible its benefits are to others. The theory also categorizes adopters into five groups: innovators, early adopters, early majority, late majority, and laggards (Rogers & Rahim, 2021).

Diffusion of Innovations Theory has been applied extensively in agriculture, healthcare, and technology to analyze the factors influencing the adoption of new tools and practices. The relative advantage of faster and error-free transactions, compatibility with existing financial systems, and observability of benefits like increased efficiency and reduced costs significantly influence adoption rates. Trialability, such as testing POS systems before full implementation, also plays a critical role (Rauniyar *et al.*, 2024).

This study used Diffusion of Innovations Theory to evaluate how relative advantage, and compatibility affect the adoption of cashless payments, including internet banking, mobile banking, and point-of-sale systems, and how their implementation influences performance in terms of efficiency, customer satisfaction, and quality delivery at Muhanga Food Processing Industries Limited, Rwanda.

2.1.3 Resource-Based View

The Resource-Based View (RBV) was developed in 1984 by Birger Wernerfelt to highlight the role of internal organizational resources in achieving competitive advantage. RBV argues that resources that are Valuable, Rare, Inimitable, and Non-Substitutable (VRIN) are critical for sustained organizational success. These resources can be tangible, such as advanced technology, or intangible, such as employee expertise and brand reputation. The theory emphasizes that organizations should focus on leveraging and developing unique resources to gain a competitive edge (Sugiarno & Novita, 2022).

RBV has been widely applied across industries, including manufacturing, healthcare, and education, to

analyze how resource allocation impacts performance. RBV identifies these systems as strategic resources that enhance performance. For instance, internet banking provides secure payment methods and quick transaction approvals, which are valuable in reducing processing delays. Mobile banking contributes to improved cash flow and customer satisfaction, while point-of-sale systems enhance inventory accuracy tracking and reduce transaction errors. These capabilities align with the VRIN framework, as they are essential for improving efficiency, ensuring quality delivery, and meeting customer expectations (Fahim & Debnath, 2024).

This study used Resource-Based View to analyze how cashless payment systems serve as strategic organizational resources, focusing on their value, rarity, inimitability, and non-substitutability, and how their effective utilization impacts performance through enhanced efficiency, error minimization, and improved customer satisfaction at Muhanga Food Processing Industries Limited, Rwanda.

2.2 Internet Banking Payment and Performance

Mohammed *et al.* (2022) investigated the effect of payments system innovations on the financial performance of commercial banks in Nigeria. Using an ex post facto research design, the study analyzed quarterly time-series data from Q1 2007 to Q4 2020, sourced from the Central Bank of Nigeria's economic reports and statistical bulletins. The Auto-Regressive Distributed Lags (ARDL) bounds approach to co-integration was utilized to test causal relationships. Findings revealed that mobile payment, POS transactions, and internet payment significantly and positively impact return on assets, while RTGS negatively affects this metric. The research addresses knowledge gaps and offers actionable information for regulators and operators in crafting policies and identifying viable payment technologies. It emphasizes the need for commercial banks to implement mass media campaigns to enhance public awareness of payment innovations, thereby promoting safe, reliable, and effective payment systems across the banking industry in Nigeria.

Ndhine *et al.* (2022) analyzed the effect of internet banking on the financial performance of commercial banks listed on the Nairobi Securities Exchange. Guided by innovation diffusion and economic value-added theories, the study utilized an explanatory research design. The sample included 11 listed banks, with panel data collected from 2014 to 2020. Using SPSS, both descriptive and inferential statistics were applied. Findings revealed that internet banking significantly correlated with return on equity ($p = 0.016$). Simple linear regression analysis confirmed a statistically significant effect of internet banking on financial performance ($t = -3.561$; $p = 0.016$). These findings

highlight the critical role of internet banking in enhancing financial outcomes. The study recommends that listed commercial banks improve their reporting practices on internet banking to better reflect its impact on performance, thus promoting more effective adoption of electronic banking innovations.

Nshimiyimana and Nkurunziza (2023) evaluated the effect of electronic banking on the financial performance of COGEBANQUE PLC in Rwanda from 2018 to 2021. This study focused on analyzing the use of electronic banking tools, assessing financial performance, and examining the relationship between electronic banking and financial performance. Findings revealed that tools like ATMs, mobile banking, internet banking, and electronic card banking significantly contributed to profitability, return on equity, and asset growth. An adjusted R-squared value of 0.625 indicated that 62.5% of COGEBANQUE PLC's financial performance changes were attributed to electronic banking innovations. Despite challenges such as network failures, insufficient skills, and security threats, electronic banking was found to enhance efficiency, reduce operational costs, and support bank expansion. The study concluded that electronic banking is essential for improving the financial performance of commercial banks in Rwanda, particularly in the context of technological advancements.

2.3 Mobile Banking Payment and Performance

Osiolo and Sije (2023) explored the effect of mobile banking on the performance of commercial banks in Kenya, using a descriptive research design. Anchored on theories such as the Technology Acceptance Model, Diffusion of Innovation Theory, and Schumpeterian Theory of Creative Destruction, the study targeted 42 licensed banks, engaging 126 strategic planning, operations, and finance managers. Data collected via structured Likert-scale questionnaires underwent descriptive and inferential analysis using SPSS and MS Excel. Findings revealed a positive, significant relationship between mobile banking and bank performance. The study recommended increased adoption of mobile banking to enhance financial performance.

Korir *et al.* (2024) investigated the effects of mobile banking services on the performance of commercial banks in Kenya. The study aimed to examine the relationship between mobile banking services and bank performance, using constructs such as capital adequacy, asset quality, management capacity, earnings, and bank liquidity to assess overall soundness. A positivist research philosophy guided the study, which used regression analysis to test hypotheses. The data were analyzed using descriptive statistics, diagnostic tests, and correlation analyses. The results revealed a significant relationship between account-to-account transfers,

mobile money services, and the performance of commercial banks. The findings highlight the increasing role of mobile banking in enhancing bank performance and its alignment with financial oversight standards set by regulators like Basel and central banks.

2.4 Point-of-sale Payment and Performance

Sirengo and Muturi (2022) examined the effect of electronic banking on the performance of commercial banks in Kenya, focusing on mobile banking, Electronic Funds Transfer (EFT), Point of Sale (PoS) banking, and Automated Teller Machines (ATM). The study used a descriptive research design with secondary data from the Central Bank of Kenya's financial reports (2015-2019). Analysis through SPSS and MS Excel revealed that EFT and PoS banking positively impacted bank profitability, as indicated by a significant increase in return on equity (ROE). Conversely, mobile banking and ATM transactions negatively affected ROE, suggesting lower performance with increased usage of these services. The study concluded that banks could enhance performance by promoting EFT and PoS transactions while limiting mobile banking and ATM usage. This approach would align with improving profitability and financial performance in commercial banks.

Adeniran, Burodo, and Suleiman (2022) examined the effect of the Point of Sale (POS) system on customer satisfaction, considering age as a moderating variable. The study focused on customers from Eco Bank, Jaiz Bank, and Unity Bank in Zaria, Kaduna State, Nigeria, with a sample size of 384 respondents, out of which 357 valid responses were returned. Data were collected using a survey and analyzed using PLS-SEM. The findings indicated a positive and significant relationship between the POS system and customer satisfaction. However, age was found to moderate the relationship between fund transfer through POS and customer satisfaction, suggesting that age influences how customers perceive the POS system's effectiveness in fund transfers. These results emphasize the importance of considering demographic factors such as age when assessing customer satisfaction with POS systems.

Mohammed, Ibrahim, and Muritala (2022) examined the effect of payment system innovations on the financial performance of commercial banks in Nigeria. The study adopted an ex post facto research design, using quarterly time-series data from Q1 2007 to Q4 2020, collected from the economic reports and statistical bulletin of the Central Bank of Nigeria. The Auto-Regressive Distributed Lags (ARDL) bounds approach to co-integration was employed to test the causal relationship between payment innovations and financial performance. The findings revealed that mobile payments, POS transactions, and internet payments had a positive and significant impact on the return on assets of commercial banks. In contrast, RTGS had a negative

impact on return on assets. The study highlighted the importance of promoting innovations in payment systems for reliable and secure transactions and recommended mass media campaigns to increase awareness of these innovations among Nigerian banks and customers.

3. Methodology

The research design, the study population, the sample selection methods, the data collection tools, the data collection and analysis procedures and ethical considerations are all covered in this section.

3.1 Study Design

This study included descriptive and correlational research design. Descriptive because it aims to describe the quality of cashless payment practices and performance using descriptive statistics, via rating of respondents' perspectives. The link between effective cashless payments and performance is the focus of this correlational study.

3.2 Study Population and Sampling

Target population was 253 populations who have direct works related to cashless payments of Muhanga Food Processing Industries Limited, Rwanda. The researcher used census method rather than sampling due to the small population. Instead, then selecting a subset of the population by sampling, this method collected data from every single unit or person inside the population.

3.3 Data Collection Instruments

The primary sources of information for this research were the employees of Muhanga Food Processing Industries Limited, Rwanda. Reference materials such as library textbooks, scholarly publications, movies, newspapers, online journals, and the internet were invaluable in gathering necessary background knowledge.

Closed-ended questions were included with 5 Likert scales. In order to get the participants' thoughts and opinions. For this study, it distributed closed-ended questionnaires to 155 of its employees at Muhanga Food Processing Industries Limited, Rwanda.

3.4 Data Analysis

Analyzing data by dissecting it and looking for patterns or trends. In order to find descriptive statistics, the researcher used SPSS version 25 to calculate percentages, means, correlations, and frequency distributions.

Bivariate correlation analysis, which examines the connection between a single dependent variable and one independent variable were used to verify our hypothesis. Whether you want to find out whether there's a correlation between two sets of numbers, say X and Y, this is one of the simplest ways to do statistical analysis. Multiple linear regression model was evaluated to all indicators as stated in the conceptual framework.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Y = Performance,

β_0 = Constant,

X1 = Internet Banking Payment,

X2 = Mobile Banking Payment,

X3 = Point-of-Sale Payment.

e = error term

3.5 Ethical Considerations

To ensure the study is conducted in an ethically acceptable manner, the rights to autonomy, anonymity, confidentiality and informed consent were respected. Participants were asked for their consent to administer the surveys before they begin. The researcher protected all of personal information. Each participant the researcher visits were given a letter of approval for data collection, one from the University of Kigali and another from the management of Muhanga Food Processing Industries Limited. There is no need to provide names or titles on the questionnaire.

4. Results and Discussion

In this section, the research findings are systematically presented and analyzed. The data have been organized into tables to facilitate understanding. These insights form the basis for assessing how cashless payment systems might influence the performance of the company.

4.1 Respondent Rate

This section presents the response rate of the distributed questionnaires. A high response rate is critical as it ensures that the findings are based on a representative sample of the target population.

Table 1: Respondent Rate

	Frequency	Percent
Filled and returned questionnaire	247	97.63
Unreturned questionnaire	6	2.37
Total	253	100.00

Table 1 indicates that out of all questionnaires distributed, 247 were completed and returned. The very high percentage (97.63%) reflects excellent engagement from the respondents. Such a high response rate suggests that the findings are likely reliable and representative of the population under study. Only 6 questionnaires were not returned, accounting for just 2.37% of the total. This minimal non-response further supports the credibility of the data, as nearly all participants contributed to the research.

4.2 Correlation Analysis

This subsection examines the linear relationships among internet banking payment, mobile banking payment, point-of-sale payment, and performance. The correlation analysis helps to determine the strength and direction of the associations between these variables in line with the study's objectives.

Table 2: Correlations

		Internet Banking Payment	Mobile Banking Payment	Point of Sale Payment	Performance
Internet Banking Payment	Pearson Correlation	1	.586**	.630**	.715**
	Sig. (2-tailed)		.000	.000	.000
	N	247	247	247	247
Mobile Banking Payment	Pearson Correlation	.586**	1	.535**	.614**
	Sig. (2-tailed)	.000		.000	.000
	N	247	247	247	247
Point of Sale Payment	Pearson Correlation	.630**	.535**	1	.749**
	Sig. (2-tailed)	.000	.000		.000
	N	247	247	247	247
Performance	Pearson Correlation	.715**	.614**	.749**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	247	247	247	247

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Research Findings, 2025

Based on the correlation results in Table 2, internet banking payment showed a strong positive relationship with performance (Pearson correlation coefficient = 0.715, p-value = 0.000). This implies that improvements in internet banking payments are significantly associated with improved performance of Muhanga Food Processing Industries Limited, supporting the specific objective that sought to assess the effect of internet banking payment on performance. Similarly, Mohammed et al. (2022) observed a significant positive relationship between internet payments and return on assets in commercial banks in Nigeria. Additionally, the findings of Ndhine et al. (2022) supported these results by confirming a statistically significant relationship between internet banking and financial performance indicators such as return on equity among banks listed on the Nairobi Securities Exchange.

Similarly, mobile banking payment had a strong positive and statistically significant relationship with performance (Pearson correlation coefficient = 0.614, p-value = 0.000). This result indicates that as mobile banking payments improve, there is also a significant positive effect on the performance of Muhanga Food Processing Industries Limited, thus addressing the specific objective that aimed at examining the effect of mobile banking payment on performance. Furthermore, findings by Korir et al. (2024) demonstrated a statistically significant relationship between mobile banking services, including mobile money transfers, and improved bank performance in Kenya.

Moreover, point-of-sale payment presented a strong positive correlation with performance (Pearson correlation coefficient = 0.749, p-value = 0.000). This reveals that enhancement in point-of-sale payment methods is associated with a notable increase in performance at Muhanga Food Processing Industries Limited, aligning with the specific objective intended to analyze the effect of point-of-sale payment on performance. This finding aligns with the study by Mohammed et al. (2022), who reported that POS transactions positively and significantly impact the financial performance of commercial banks in Nigeria, reflected by increased return on assets. All correlations presented were statistically as indicated by p-values less than 0.05, confirming strong, positive, and meaningful associations among the studied variables.

4.3 Regression Analysis

This subsection investigates the overall and individual effects of internet banking payment, mobile banking payment, and point-of-sale payment on the performance of Muhanga Food Processing Industries Limited. The regression analysis is presented through a model summary, analysis of variance (ANOVA), coefficients, and a summary of hypothesis results. This approach directly addresses the objectives and tests the null hypotheses provided.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.825 ^a	.680	.676	.28613	1.855

a. Predictors: (Constant), Point of Sale Payment, Mobile Banking Payment, Internet Banking Payment

b. Dependent Variable: Performance

Source: Research Findings, 2025

Table 3 shows that the regression model has an R value of 0.825 and an R Square of 0.680, meaning that 68.0 percent of the variance in performance is explained by the predictors (internet banking payment, mobile banking payment, and point-of-sale payment). The Durbin-Watson statistic of 1.906 indicates that there is

no significant autocorrelation in the residuals. Adeniran, Burodo, and Suleiman (2022) reinforced this by highlighting a significant positive relationship between POS systems and customer satisfaction, indirectly promoting business performance through improved customer relations.

Table 4: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	42.260	3	14.087	171.793	.000 ^b
	Residual	19.894	243	.082		
	Total	62.154	246			

a. Dependent Variable: Performance

b. Predictors: (Constant), Point of Sale Payment, Mobile Banking Payment, Internet Banking Payment

Source: Research Findings, 2025

Table 4 provides the analysis of variance for the regression model. The F value is 171.793 with a p value of 0.000, which is less than 0.05. This indicates that the overall regression model is statistically significant, meaning that the predictors together explain a significant portion of the variance in performance. Similarly, the

findings by Sirengo and Muturi (2022) indicate that POS banking transactions positively influenced profitability (return on equity) among commercial banks in Kenya, thereby confirming that point-of-sale systems enhance operational efficiency and financial performance.

Table 5: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.169	.162		1.043	.297		
	Internet Banking Payment	.339	.052	.326	6.519	.000	.516	1.937
	Mobile Banking Payment	.169	.042	.185	4.024	.000	.611	1.638
	Point of Sale Payment	.455	.050	.445	9.100	.000	.562	1.780

a. Dependent Variable: Performance

Source: Research Findings, 2025

Table 5 details the coefficients for each predictor. The unstandardized coefficient for internet banking payment is 0.374, with a standardized coefficient (Beta) of 0.339, and a p value of 0.000. Furthermore, the positive effects of electronic banking tools, including internet banking on financial outcomes, as noted by Nshimiyimana and Nkurunziza (2023) in Rwanda's COGEBANQUE PLC, directly corroborate this study's conclusions. Thus, existing literature strongly supports the positive influence of internet banking payments on company performance.

Mobile banking payment has an unstandardized coefficient of 0.169, and a p value of 0.000. These findings are supported by recent studies, such as those by Osiolo and Sije (2023), which found a strong and

positive relationship between mobile banking adoption and enhanced financial performance of Kenyan commercial banks.

Point-of-sale payment shows an unstandardized coefficient of 0.455, and a p value of 0.000. All p values are less than 0.05, indicating that each predictor significantly affects performance. The collinearity statistics (tolerance and variance inflation factor) are within acceptable ranges, suggesting that multicollinearity is not a concern. These results align with the study's objectives by demonstrating the individual contribution of each cashless payment method to performance.

The findings presented in Table 5 show that all three null hypotheses were rejected, as each recorded a p-value less than 0.05. This implies that the various forms of

electronic payments examined in the study have a statistically significant effect on the performance of Muhanga Food Processing Industries Limited, Rwanda.

The rejection of Ho1: "There is no significant effect of internet banking payment on performance of Muhanga Food Processing Industries Limited, Rwanda" indicates that internet banking payment has a significant effect on the company's performance. This may be attributed to the ease, speed, and efficiency that internet banking introduces, which can enhance financial operations and productivity.

Similarly, the rejection of Ho2: "There is no significant effect of mobile banking payment on performance of Muhanga Food Processing Industries Limited, Rwanda" suggests that mobile banking payment significantly influences performance. Mobile banking offers convenience and accessibility, likely to contribute to improved customer transactions and streamlined financial processes.

Furthermore, the rejection of Ho3: "There is no significant effect of point-of-sale payment on performance of Muhanga Food Processing Industries Limited, Rwanda" confirms that point-of-sale payment has a significant effect on performance. POS systems may support better transaction management, accurate sales tracking, and overall efficiency in service delivery.

In summary, the rejection of all three null hypotheses confirms that internet banking, mobile banking, and point-of-sale payments each have a significant positive effect on the performance of Muhanga Food Processing Industries Limited, Rwanda.

5. Conclusion and Recommendations

5.1 Conclusion

The study confirms that the adoption and implementation of cashless payment methods including internet banking, mobile banking, and point-of-sale systems significantly enhance the operational, financial, and competitive performance of Muhanga Food Processing Industries Limited, Rwanda.

5.2 Recommendations

Below are recommendations directed to both staff and management of Muhanga Food Processing Industries Limited, based on the findings of the study:

1. Management should continuously invest in advanced internet banking infrastructure to maintain high transaction security and speed, thus sustaining operational efficiency.

2. The company management should consider expanding point-of-sale terminals across various sales points to further enhance transaction efficiency, customer satisfaction, and inventory management accuracy.
3. Management should implement consistent monitoring and evaluation mechanisms for cashless payment systems to promptly identify and resolve technical or operational challenges, ensuring seamless performance.

5.3 Suggestion for Further Research

Based on the findings and limitations of the current study, the following areas are suggested for future research:

Future researchers should examine customer perception and satisfaction with cashless payment methods at Muhanga Food Processing Industries Limited, providing a comprehensive view of both internal (staff/management) and external (customer) perspectives.

Future researchers could investigate the impact of cashless payment adoption on employee productivity and job satisfaction to uncover internal operational dynamics and employee perspectives.

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