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Transitioning to a Cashless Economy: Drivers and Inhibitors of Electronic Payment System Adoption among Micro, Small, and Medium Enterprises

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Purpose This study investigates the adoption of electronic payment systems among Micro, Small, and Medium Enterprises (MSMEs) in Koronadal City, focusing on identifying the drivers and inhibitors influencing this shift toward a cashless economy.

Study design/methodology/approach: The research employs a descriptive multivariate correlational design, surveying 351 registered MSMEs across various sectors in Koronadal City. Data were collected using a structured questionnaire validated for reliability and analyzed using multiple linear regression to determine significant predictors of electronic payment adoption.

Findings: The results reveal a low adoption rate of electronic payment systems, with cash transactions remaining dominant. Key drivers include customer demand, internet accessibility, digital infrastructure, and government incentives, while perceived security concerns act as significant inhibitors. The regression model explains 68.4% of the variance in adoption levels, highlighting customer demand as the most significant predictor.

Originality/value: This study provides critical insights into the unique challenges and opportunities faced by MSMEs in smaller cities transitioning to digital payments. The findings contribute to the discourse on financial inclusion and digital transformation, offering actionable recommendations for policymakers, financial institutions, and MSMEs to address barriers and promote adoption in regional contexts.

Introduction

The transition to a cashless economy has gained significant global attention due to the increasing digitization of financial systems and the widespread adoption of electronic payment systems. Countries such as Sweden, China, and the United Kingdom have embraced cashless payments, with digital transactions becoming the norm for daily financial activities. This shift is driven by the convenience, speed, and security that electronic payments offer, in contrast to traditional cash-based systems (Boden et al., 2020). The global trend reflects a broader movement toward digital financial transformation, with mobile wallets, contactless payments, and online banking becoming ubiquitous across both developed and developing countries.

In the Philippines, the journey toward a cashless economy is gaining momentum, partly accelerated by the COVID-19 pandemic, which limited face-to-face transactions and made contactless payments more necessary (Geroche, 2022). The government's introduction of initiatives such as the National Retail Payment System (NRPS) highlights its commitment to promoting financial inclusion and digital transformation. Through the NRPS, the Philippines aims to have at least 50% of total retail payments conducted electronically by 2023 (BSP, 2023). However, the adoption of electronic payment systems among Micro, Small, and Medium Enterprises (MSMEs) remains uneven, as many businesses face barriers such as high transaction fees, lack of digital infrastructure, and limited knowledge about cashless technologies.

At the local level, in Koronadal City, South Cotabato, the adoption of electronic payment systems among MSMEs has been slower compared to larger urban areas. While major metropolitan regions like Metro Manila have seen rapid growth in cashless transactions, small businesses in Koronadal still grapple with challenges like limited internet access, consumer

resistance to digital payments, and a preference for cash transactions (Diaz, 2022). Understanding the local context is crucial to addressing the specific drivers and inhibitors influencing MSMEs in Koronadal, where businesses often operate in a hybrid economy of both cash and digital payments, depending on the consumer base and available infrastructure.

Various studies have explored the adoption of electronic payment systems globally. Venkatesh et al. (2003) proposed the Unified Theory of Acceptance and Use of Technology (UTAUT), which remains a widely used model for understanding how people adopt new technologies. The UTAUT identifies performance expectancy, effort expectancy, social influence, and facilitating conditions as key factors influencing technology acceptance. This model has been applied in multiple settings, including the use of mobile payments and online banking, making it relevant to understanding the dynamics of cashless payment adoption.

Trinh et al. (2020) conducted a study on MSMEs in Vietnam, finding that perceived ease of use, perceived security, and trust significantly affect the adoption of digital payment platforms. Their study underscores the importance of building digital literacy and trust in electronic payments for businesses, especially in emerging economies. Similarly, Inegbedion (2018) highlighted the role of perceived risk and the availability of technical support in influencing the adoption of internet banking services in Nigeria. Their research suggests that reducing perceived risks and providing adequate support can encourage small businesses to adopt electronic financial systems.

In the Philippine context, Ortiz et al. (2023) examined the adoption of e-wallets and cashless transactions, emphasizing ease of use and perceived convenience as key motivators for consumers. However, they also noted that MSMEs face higher adoption barriers due to transaction costs and limited infrastructure. Meanwhile, Flamiano et al. (2021) found that rural MSMEs struggle to integrate e-payment systems into their operations due to poor internet connectivity and low consumer demand for digital transactions, further highlighting the disparity between urban and rural settings in the Philippines.

Despite the growing body of literature on electronic payment system adoption, few studies focus specifically on MSMEs in smaller cities like Koronadal. Much of the existing research focuses on larger urban centers or consumer perspectives rather than the experiences of small businesses themselves. Moreover, most studies do not account for the complex factors that affect adoption, such as local infrastructure limitations, technological literacy, and cultural preferences for cash transactions. Addressing this gap in the literature is critical for understanding the nuanced challenges and opportunities faced by MSMEs in regions like South Cotabato as they transition to cashless payment systems.

This study is therefore significant because it addresses the specific drivers and inhibitors affecting MSME adoption of electronic payment systems in Koronadal City. By identifying the factors that influence adoption, this research will contribute to the broader discourse on financial inclusion and digital transformation in the Philippines. The main objective of the study is to provide a detailed analysis of the barriers and motivations for MSMEs to transition to a cashless economy, offering insights that could help local businesses and policymakers develop strategies to promote cashless payment adoption across smaller cities and rural areas.

Literature Review

Introduction to Electronic Payment Systems

Electronic payment systems (EPS) have transformed the way businesses conduct transactions, offering efficiency, speed, and convenience. EPS encompass a range of methods, including credit and debit cards, mobile wallets, online payment platforms, and cryptocurrencies (Singh et al., 2021). As the global economy increasingly shifts toward digitalization, understanding the

factors influencing the adoption of EPS among Micro, Small, and Medium Enterprises (MSMEs) becomes crucial for fostering economic growth and financial inclusion (World Bank, 2021).

Significance of Electronic Payments for MSMEs

For MSMEs, the adoption of electronic payment methods can lead to improved cash flow, enhanced customer experience, and expanded market reach (Widayat et al., 2021). Electronic payments reduce transaction times and costs associated with handling cash, enabling MSMEs to compete more effectively in a rapidly evolving marketplace. Furthermore, the integration of EPS can facilitate better financial management, allowing businesses to track transactions more accurately (Volvach, 2023).

Drivers of Electronic Payment Adoption

The rapid advancement of technology has been a significant driver of EPS adoption. The availability of smartphones and improved internet connectivity have made it easier for MSMEs to implement digital payment solutions (Ahmed et al., 2003). Additionally, the integration of secure payment gateways enhances the perceived ease of use and security of electronic transactions (Bapna et al., 2020).

Economic incentives, such as reduced transaction fees and increased sales through wider payment options, motivate MSMEs to adopt electronic payment systems (Tut, 2020). Furthermore, the COVID-19 pandemic has accelerated the shift towards digital payments, with many consumers preferring contactless transactions for safety reasons (Zhao & Bação, 2021).

Inhibitors of Electronic Payment Adoption

Despite the benefits, many MSMEs hesitate to adopt EPS due to security concerns. Perceived risks associated with fraud and data breaches can deter businesses from transitioning to digital payment methods (Sam et al., 2022). This highlights the need for robust security measures and consumer education to build trust in electronic transactions (Daragmeh et al., 2021).

The initial costs of implementing electronic payment systems, including software and hardware investments, can be prohibitive for many MSMEs (Nguyen et al., 2020). These financial barriers often lead businesses to rely on traditional payment methods, limiting their growth potential.

Impact of Government Regulations and Incentives

Government policies and regulations play a crucial role in shaping the adoption of EPS among MSMEs. Supportive regulatory frameworks and incentives, such as subsidies for technology adoption and training programs, can facilitate a smoother transition to electronic payments (World Bank, 2021). Countries that prioritize digital payment infrastructure often see higher rates of EPS adoption among small businesses (Al- Dmour et al., 2021).

Consumer Demand for Electronic Payment Methods

Consumer preferences significantly influence MSMEs' adoption of electronic payment systems. As customers increasingly demand convenient and diverse payment options, businesses are compelled to adapt to these expectations to remain competitive (Apriani & Wuryandari, 2022). Understanding customer behavior and preferences can guide MSMEs in selecting the most suitable payment solutions.

Role of Digital Literacy in Payment Adoption

Digital literacy among employees is another critical factor affecting EPS adoption. Businesses with a workforce that is comfortable using technology are more likely to embrace electronic

payment methods (Kozanoglu & Abedin, 2020). Therefore, investing in training programs to enhance digital skills can significantly impact the successful implementation of EPS.

Comparative Analysis of Payment Methods Utilized by MSMEs

Different types of electronic payment methods are available, each with its unique advantages and challenges. A comparative analysis of these methods can provide valuable insights into which solutions are most effectively adopted by MSMEs (Kilay et al., 2022). This understanding can help inform strategies for increasing EPS adoption in specific contexts.

Literature Synthesis

The adoption of electronic payment systems (EPS) has significantly transformed business transactions, offering MSMEs enhanced speed, efficiency, and convenience, which are vital in a digitally evolving global economy. Key drivers for adopting EPS include technological advancements, secure payment options, and growing consumer demand for contactless transactions, especially post-COVID-19. These factors help MSMEs improve cash flow, customer experience, and market reach. However, barriers such as security concerns, high initial costs, and gaps in digital literacy hinder the widespread adoption of EPS. Government policies, such as regulatory incentives and infrastructure development, alongside increasing consumer preferences for digital payments, are crucial in facilitating the transition for MSMEs. Ultimately, while technological and consumer demand push adoption, security concerns and financial challenges need to be addressed to ensure successful EPS integration.

Theoretical Framework

The Technology Acceptance Model (TAM) provides a robust theoretical framework for understanding the factors influencing the adoption of electronic payment systems among Micro, Small, and Medium Enterprises (MSMEs). Developed by Davis (1989), TAM posits that perceived ease of use (PEOU) and perceived usefulness (PU) are critical determinants of users' acceptance of technology. In the context of MSMEs, the perceived ease of use of electronic payment systems may significantly impact their willingness to adopt these technologies, as businesses with limited technological expertise may hesitate to transition to new systems they perceive as complicated (Davis, 1989). Additionally, the perceived usefulness of electronic payments plays a vital role; MSMEs that recognize the potential benefits—such as increased efficiency, improved customer satisfaction, and enhanced cash flow—are more likely to embrace these technologies (Venkatesh & Davis, 2000).

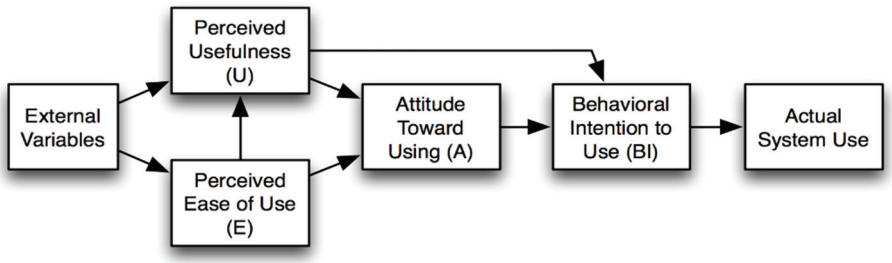

Fig 1. Technology Acceptance Model (TAM)

Moreover, various external factors influence the relationship between the core constructs of TAM and the adoption of electronic payment systems. For instance, business size can affect resource availability, impacting both perceived ease of use and usefulness, while industry type can shape the demand for electronic payments based on consumer preferences (Thong, 1999). Additionally, external variables such as access to reliable internet connectivity, digital literacy

of employees, and government incentives or regulations can either facilitate or hinder the adoption process. A supportive environment that provides training and resources can significantly enhance the perceived ease of use and usefulness of electronic payment systems (Almendral et al., 2021). Therefore, understanding the interplay of these factors within the TAM framework is crucial for identifying significant predictors of electronic payment adoption among MSMEs in Koronadal City.

Research Questions

1. What are the key business characteristics of Micro, Small, and Medium Enterprises (MSMEs) in Koronadal City, in terms of?
   a. Industry type,
   b. Business size,
   c. Years of operation,
   d. Ownership structure,
   e. Estimated annual revenue
   f. Current Payment Method Used

2. What is the level of adoption of electronic payment methods among Micro, Small, and Medium Enterprises (MSMEs) in Koronadal City?

3. What are the most significant predictors of the level of adoption of electronic payment systems among Micro, Small, and Medium Enterprises (MSMEs) in Koronadal City, in terms of:
   a. Business size,
   b. Industry type,
   c. Years of operation,
   d. Ownership structure,
   e. Estimated Annual Revenue,
   f. Internet Accessibility,
   g. Perceived ease of use of electronic payment systems,
   h. Perceived security of transactions,
   i. Cost of implementing electronic payment systems,
   j. Government incentives or regulations,
   k. Customer demand for electronic payments,
   l. Digital literacy of employees,
   m. Availability of digital infrastructure (hardware/software),
   n. Level of competition in the market,
   o. Availability of training or technical support for digital payment systems

4. Among the significant factors, which act as inhibitors and which act as drivers of the level of adoption of electronic payment systems among Micro, Small, and Medium Enterprises (MSMEs) in Koronadal City?

5. To what extent do the identified factors explain the total variance in the level of adoption of electronic payment systems among Micro, Small, and Medium Enterprises (MSMEs) in Koronadal City?

Hypotheses

H01: There is no significant relationship between the selected predictors and the level of adoption of electronic payment systems among Micro, Small, and Medium Enterprises (MSMEs) in Koronadal City.

H02: Among the significant factors identified, there are no differences in the roles of inhibitors and drivers regarding the level of adoption of electronic payment systems among Micro, Small, and Medium Enterprises (MSMEs) in Koronadal City.

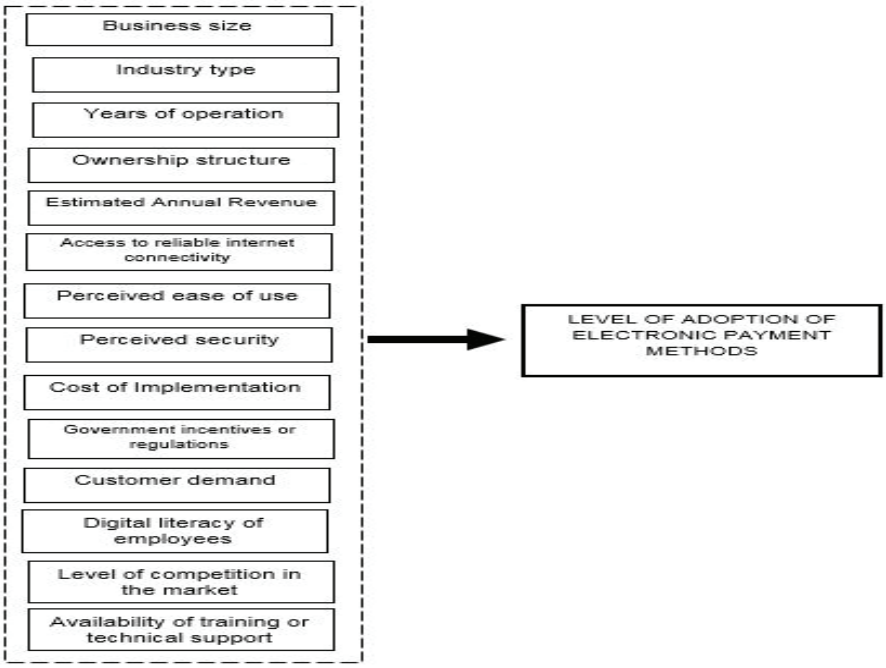

Fig. 2 Conceptual Paradigm

Research Methodology

Research Design

The study employed a descriptive multivariate correlational research design, incorporating predictive analysis through multiple linear regression (MLR) to examine the factors influencing electronic payment adoption among MSMEs in Koronadal City. This approach was chosen to explore the relationships between various independent variables (such as business size, industry type, years of operation, ownership structure, internet connectivity, perceived ease of use, perceived security, and customer demand) and the dependent variable, which is the level of adoption of electronic payment systems. The descriptive component provided an overview of the current adoption levels and characteristics of MSMEs using electronic payments, while the correlational aspect, facilitated by MLR, assessed the statistical relationships and identified the most significant predictors of adoption. The MLR analysis enabled the identification of key drivers and inhibitors, shedding light on the predictive factors that significantly explain the variance in MSMEs' adoption levels.

Respondents

The study focused exclusively on MSMEs actively operating across all sectors in Koronadal City. By including a diverse range of sectors, such as retail, food and beverage, services, and manufacturing, the research aimed to capture a broad spectrum of business profiles and industry-specific dynamics affecting the adoption of electronic payment systems. The inclusion criteria required respondents to be registered MSMEs within Koronadal City, ensuring that the findings were specific to local, legally recognized businesses. Furthermore, only owners or primary decision-makers participated, as these individuals possess a direct influence over business operations and decisions related to technology adoption. This focus may have limited

the scope by excluding perspectives from employees and customers who also interact with electronic payment systems, potentially introducing a source of bias.

Sampling Design

For this study, a stratified random sampling design was applied, with stratification based on business size (micro, small, and medium). This approach was chosen to ensure that the sample accurately represents the diversity within MSMEs of different sizes, each of which may experience unique challenges and motivators when adopting electronic payment systems.

Sample size calculation

Table 1. Koronadal City-Registered MSME Total Population 2024

Koronadal City MSME	**Micro (1-9 total employees)**	**Small (10 -99 total employees)**	**Medium (100-199 total employees)**
TOTAL	2,531	295	8
A - Agriculture, Forestry, and Fishing	13	1	-
B - Mining and Quarrying	2	-	-
C - Manufacturing	292	19	-
D - Electricity, Gas, Steam, and Air Conditioning Supply	-	1	-
E - Water Supply; Sewerage, Waste Management and Remediation Activities	-	-	1
F - Construction	5	5	-
G - Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	1,056	114	3
H - Transport and Storage	16	5	-
I - Accommodation and Food Service Activities	431	59	-
J - Information and Communication	89	11	-
K - Financial and Insurance Activities	153	29	1
L - Real Estate Activities	28	5	-
M - Professional, Scientific and Technical Activities	63	1	-
N - Administrative and Support Service Activities	52	-	-
P - Education	30	29	3
Q - Human Health and Social Work Activities	104	4	-
R - Arts, Entertainment, and Recreation	21	3	-
S - Other Service Activities	176	9	-

Source: Philippine Statistics Authority, 2024 List of Establishments (LE)

Sample Size Determination Using Slovin's Formula

Formula:

$$n=N/\ 1+N\ (e^2)$$

Where:

N= MSME Total Population (2834)

E= Margin of error (5%)

n= sample size

$$n= 2834/\ 1 + (0.05^2) =$$ **351 Respondents**

Table 2. Sample Size Table

Sector	Micro Enterprise Sample	Small Enterprise Sample	Medium Enterprise Sample
Required sample Size (Per Category)	313	37	1
Agriculture, Forestry, and Fishing	2	0	0
Mining and Quarrying	0	0	0
Manufacturing	36	2	0
Electricity, Gas, Steam, and Air Conditioning Supply	0	0	0
Water Supply; Sewerage, Waste Management	0	0	0
Construction	1	1	0
Wholesale and Retail Trade; Repair	131	14	0
Transport and Storage	2	1	0
Accommodation and Food Service Activities	53	7	0
Information and Communication	11	1	0
Financial and Insurance Activities	19	4	0
Real Estate Activities	3	1	0
Professional, Scientific and Technical Activities	8	0	0
Administrative and Support Service Activities	6	0	0
Education	4	4	1
Human Health and Social Work Activities	13	1	0
Arts, Entertainment, and Recreation	3	0	0
Other Service Activities	22	1	0
n= 351			

Data Gathering Procedure

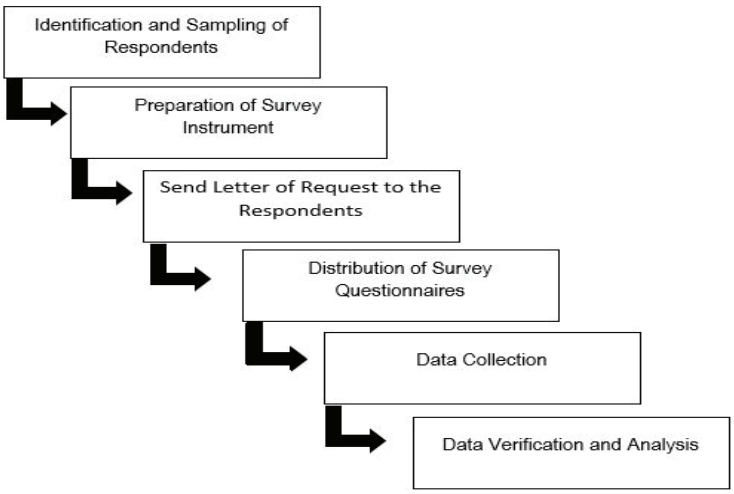

Fig 3. Data Gathering Flowchart

Research Instrument

The research instrument utilized in this study was a researcher-made structured survey questionnaire, designed to gather detailed information on the adoption of electronic payment systems among Micro, Small, and Medium Enterprises (MSMEs) in Koronadal City. The questionnaire included three parts: (1) Key Business Characteristics—covering industry type, business size, years of operation, ownership structure, estimated annual revenue, and current payment methods; (2) Level of Adoption of Electronic Payment Methods, assessing the extent of electronic payment usage; and (3) Predictors of Adoption, investigating potential influencing factors such as business size, industry type, internet accessibility, perceived ease of use, security concerns, cost, government incentives, customer demand, digital literacy, digital infrastructure, market competition, and training support.

To ensure validity and reliability, the questionnaire underwent content validation by field experts and was pilot-tested with 30 MSME respondents, who provided insights into clarity and relevance. The pilot test results were evaluated using Cronbach's Alpha for internal consistency and the Kaiser-Meyer-Olkin (KMO) measure, confirming that the instrument was suitable for data analysis. The internal consistency coefficients for all constructs ranged from 0.712 to 0.890, indicating acceptable to good reliability. Specifically, the Level of Adoption scale yielded an alpha of 0.712, while predictor constructs such as Perceived Ease of Use ($\alpha = 0.813$), Security ($\alpha = 0.816$), Cost ($\alpha = 0.825$), and Digital Infrastructure ($\alpha = 0.866$) demonstrated good reliability. These findings validated the robustness of the instrument, allowing for minor revisions that ensured its effectiveness for full-scale data collection in the main study.

Table 3. 5-Point Likert Scale for assessing respondents' agreement levels with statements related to electronic payment adoption and its factors among MSMEs

Scale	Mean Range	Description
1	1.00-.1.79	Strongly Disagree
2	1.80- 2.59	Disagree
3	2.60-3.39	Neutral
4	3.40-4.19	Agree
5	4.20-5.00	Strongly Agree

Statistical Analysis and Treatment

The study used appropriate statistical methods to analyse electronic payment adoption among MSMEs in Koronadal City. Descriptive statistics (frequency and percentage) summarized business characteristics for Research Question 1. Weighted mean and standard deviation measured the level and variability of adoption for Questions 2 and 3. To address Questions 4 and 5, multiple linear regression identified significant predictors, such as business size, ease of use, and customer demand highlighting which factors positively or negatively influenced adoption. This combination of methods ensured a clear understanding of adoption levels and their determinants.

Results and Discussions

TABLE 4. Business Characteristics of Micro, Small, and Medium Enterprises (MSMEs) in Koronadal City

BUSINESS CHARACTERISTIC	CATEGORY	FREQUENCY	PERCENTAGE (%)
	Agriculture, Forestry, and Fishing	2	0.6
	Mining and Quarrying	0	0
	Manufacturing	38	10.8

Industry Type	Electricity, Gas, Steam, Air Conditioning Supply	0	0
	Water Supply; Sewerage, Waste Management, and Remediation	0	0
	Construction	2	0.6
	Wholesale and Retail Trade; Repair	145	41.3
	Transport and Storage	3	0.9
	Accommodation and Food Service Activities	60	17.1
	Information and Communication	12	3.4
	Financial and Insurance Activities	23	6.6
	Real Estate Activities	4	1.1
	Professional, Scientific, and Technical Activities	8	2.3
	Administrative and Support Service Activities	6	1.7
	Education	9	2.6
	Human Health and Social Work Activities	14	4.0
	Arts, Entertainment, and Recreation	3	0.9
	Other Service Activities	23	6.6
Subtotal for Industry Type		351	100.0
Business Size	Micro (1-9 employees)	313	89.1
	Small (10-99 employees)	37	10.5
	Medium (100-199 employees)	1	0.3
Subtotal for Business Size		351	100.0
Years of Operation	Less than 1 year	10	2.9
	1-3 years	98	27.9
	4-10 years	116	33.1
	More than 10 years	141	40.2
Subtotal for Years of Operation		351	100.0
Ownership Structure	Sole Proprietorship	225	64.1
	Partnership	91	25.9
	Corporation	3	0.9
	Cooperative	45	12.8
Subtotal for Ownership Structure		351	100.0
Estimated Annual Revenue	Less than PHP 500,000	172	49.0
	PHP 500,000 - PHP 5,000,000	152	43.3
	PHP 5,000,001 - PHP 15,000,000	31	8.8
	More than PHP 15,000,000	9	2.6
Subtotal for Estimated Annual Revenue		351	100.0
Current Payment Methods Used	Cash	351	100.0
	Bank Transfer	72	20.5
	Credit/Debit Card	18	5.1
	Mobile Payment	138	39.3
	Others	5	1.4

The key business characteristics of Micro, Small, and Medium Enterprises (MSMEs) in Koronadal City reveal distinct patterns across various sectors. A significant proportion of the businesses in the sample belong to the Wholesale and Retail Trade (131 micro, 14 small), and Accommodation and Food Service Activities (53 micro, 7 small), indicating that these sectors dominate the local MSME landscape. The majority of enterprises in Koronadal City are micro-sized, with 313 out of 351 businesses categorized as micro-enterprises. Furthermore, most businesses in the sample have been operating for 1 to 3 years, reflecting a growing entrepreneurial environment. Ownership structures are predominantly sole proprietorships, with only a few businesses operating as corporations, reinforcing the informal nature of many MSMEs in the area. Regarding payment methods, most MSMEs rely on cash transactions, with mobile payments (e.g., GCash, PayMaya) emerging as the second most common method. These

insights provide valuable context for understanding the business environment in Koronadal City, which will be essential for assessing the adoption of electronic payment systems.

TABLE 5. Level of Adoption of Electronic Payment Methods in MSMEs in Koronadal City

Statement	Mean	Std. Deviation
1. Our business frequently uses electronic payment methods for transactions.	2.41	1.07
2. Electronic payment methods are an essential part of our business operations.	2.54	1.12
3. We encourage our customers to use electronic payment options.	2.63	1.06
4. The majority of our transactions are conducted via electronic payments.	2.30	1.12
5. We have integrated electronic payment systems effectively into our business processes.	2.51	1.11
Weighted Mean	2.48	

Based on the results from the 5-point Likert scale (shown in table 5), the Weighted Mean of 2.48 indicates a low level of adoption of electronic payment methods among MSMEs in Koronadal City. This score falls within the "Disagree" category, suggesting that respondents largely disagree with statements related to frequent and effective use of electronic payment systems. The individual mean scores for the five statements further support this conclusion, with values ranging from 2.30 to 2.63, indicating a general dissatisfaction or low adoption of electronic payments within these businesses. The responses suggest that although electronic payments are used, they are not a significant or frequent part of MSMEs' day-to-day transactions, and further adoption efforts may be needed.

TABLE 6 Predictors of Adoption – Internet Connectivity

Statement	Mean	Std. Deviation
1. Our business has reliable internet connectivity that supports electronic payment systems.	2.20	1.03
2. Limited internet access prevents us from fully utilizing electronic payment options.	3.40	1.05
3. We can easily access high-speed internet for electronic transactions.	2.15	1.02
Weighted Mean	2.58	

In table 6, the Weighted Mean of 2.58 indicates that respondents disagree with the statements related to internet connectivity and its role in supporting electronic payment systems. This result falls within the "Disagree" category, reflecting that many businesses in Koronadal City experience challenges related to internet connectivity. With mean scores ranging from 2.15 to 3.60, the data suggests that MSMEs face difficulties in accessing reliable and high-speed internet for electronic transactions. Limited or slow internet access prevents full utilization of electronic payment options, which acts as a barrier to adopting these systems effectively. This result highlights the significant role of internet infrastructure in the adoption process, indicating that poor connectivity in some areas is a hindrance to the widespread use of electronic payments among MSMEs in the city.

TABLE 7 Predictors of Adoption – Perceived Ease of Use of Electronic Payment Systems

Statement	Mean	Std. Deviation
1. Electronic payment systems are straightforward and easy to use for our business.	3.85	0.91
2. Our employees find electronic payment platforms easy to learn and operate.	3.75	0.95

3. The simplicity of electronic payment systems encourages us to use them more frequently.	3.90	0.89
Weighted Mean	3.83	

In table 7, The Weighted Mean of 3.83 indicates that respondents agree with the statements related to the perceived ease of use of electronic payment systems. This result falls within the "Agree" category, suggesting that electronic payment systems are considered straightforward and easy to use by MSMEs in Koronadal City. With mean scores ranging from 3.75 to 3.90, the data reveals that employees find it relatively easy to learn and operate electronic payment platforms. The simplicity of these systems also encourages businesses to use them more frequently. These results highlight that the perceived ease of use is not a significant barrier for MSMEs in adopting electronic payment methods, as most businesses report finding these systems user-friendly and accessible for their operations.

TABLE 8 Predictors of Adoption – Perceived Security of Transactions

Statement	Mean	Std. Deviation
1. We feel confident that electronic payment systems provide secure transactions for our business.	1.70	0.85
2. The risk of fraud with electronic payments is a concern for us.	4.15	0.91
3. Electronic payment systems provide sufficient protection for our customers' information.	1.30	1.09
Weighted Mean	2.38	

Table 8 shows a weighted mean of 2.38 for Perceived Security of Transactions, indicating disagreement with the security of electronic payment systems. The first statement, "We feel confident that electronic payment systems provide secure transactions for our business," received a mean score of 1.70, reflecting strong disagreement. The second statement, "The risk of fraud with electronic payments is a concern for us," scored 4.15, indicating strong agreement with fraud concerns. The third statement, "Electronic payment systems provide sufficient protection for our customers' information," had a mean score of 1.30, showing strong disagreement with the adequacy of protection. Overall, MSMEs view security challenges, particularly fraud risks, as a significant barrier to adopting electronic payment systems.

TABLE 9 Predictors of Adoption – Government Incentives or Regulations

Statement	Mean	Std. Deviation
1. Government incentives have made it easier for us to adopt electronic payment systems.	1.20	0.67
2. Compliance with government regulations encourages us to use electronic payments.	1.90	0.85
3. Lack of government support hinders our adoption of electronic payment methods.	4.50	0.81
Weighted Mean	2.53	

The results in Table 9 show that MSMEs in Koronadal City are dissatisfied with government support for electronic payment adoption. The lack of government incentives received a very low mean of 1.20, indicating strong disagreement, suggesting that MSMEs feel there are no effective government programs to encourage adoption. Similarly, government regulations were perceived negatively, with a mean of 1.90. However, the lack of government support was strongly felt, with a mean of 4.50, highlighting it as a significant barrier to adoption. Overall, these findings indicate that MSMEs believe more government incentives and support are needed to facilitate the transition to electronic payments.

TABLE 10 Predictors of Adoption – Customer Demand for Electronic Payments

Statement	Mean	Std. Deviation
1. Our customers frequently request electronic payment options.	4.60	0.88
2. The demand for electronic payments among our customers has increased recently.	4.50	0.76
3. Customer preference for electronic payments influences our business's payment options.	4.35	0.92
Weighted Mean	4.48	

The results in Table 10 show that MSMEs in Koronadal City strongly agree on the influence of customer demand for electronic payment options. The statement "Our customers frequently request electronic payment options" received a mean score of 4.60, indicating a high level of agreement. Similarly, the statement "The demand for electronic payments among our customers has increased recently" also received a high mean of 4.50, reflecting growing customer demand. The third statement, "Customer preference for electronic payments influences our business's payment options," had a mean of 4.35, indicating that MSMEs recognize the impact of customer preferences. Overall, the weighted mean of 4.48 suggests that MSMEs are highly responsive to customer demand for electronic payments and are likely to adjust their payment options accordingly.

TABLE 11 Predictors of Adoption – Digital Literacy of Employees

Statement	Mean	Std. Deviation
1. Employees are generally skilled in handling digital payment systems.	3.80	0.75
2. Limited digital skills among staff may limit the use of electronic payment systems.	3.20	1.00
3. Regular training is provided to employees on using electronic payment platforms.	2.80	1.05
Weighted Mean	3.26	

The results in Table 11 reveal a generally neutral to positive outlook on employee digital literacy regarding electronic payment systems. The statement "Employees are generally skilled in handling digital payment systems" received a mean score of 3.80, indicating agreement that employees possess reasonable digital skills. However, the statement "Limited digital skills among staff may limit the use of electronic payment systems" received a neutral mean score of 3.20, suggesting some recognition of skill gaps but without strong consensus on its impact. The statement "Regular training is provided to employees on using electronic payment platforms" received a mean score of 2.80, indicating disagreement, implying that many MSMEs do not offer regular training. Overall, the weighted mean of 3.26 suggests that while digital literacy is valued, there is room for improvement, particularly in providing consistent training to fully leverage electronic payment systems.

TABLE 12 Predictors of Adoption – Availability of Digital Infrastructure (Hardware/Software)

Statement	Mean	Std. Deviation
1. Access to necessary hardware (e.g., devices) supports electronic payments.	4.50	0.60
2. Lack of suitable software can prevent full adoption of electronic payment systems.	4.40	0.65

3. Regular upgrades to digital infrastructure accommodate electronic payments.	4.55	0.58
Weighted Mean	4.48	

The results in Table 12 show that MSMEs in Koronadal City generally agree on the importance and availability of digital infrastructure for electronic payment adoption. The statement "Access to necessary hardware (e.g., devices) supports electronic payments" received a high mean score of 4.50, reflecting strong agreement that MSMEs are well-equipped with the necessary physical devices. The statement "Lack of suitable software can prevent full adoption of electronic payment systems" scored 4.40, indicating recognition of software limitations as a barrier to full adoption. The statement "Regular upgrades to digital infrastructure accommodate electronic payments" received the highest mean score of 4.55, signaling strong agreement on the importance of infrastructure updates. The overall weighted mean of 4.48 suggests that MSMEs are committed to investing in and maintaining the infrastructure needed for digital payments, although the recognition of software limitations points to a need for additional resources to optimize digital payment systems fully.

TABLE 13 Predictors of Adoption – Level of Competition in the Market

Statement	Mean	Std. Deviation
1. Market competition drives the offering of electronic payment options.	4.45	0.68
2. Competitors' adoption of electronic payments influences decision-making.	4.50	0.64
3. The level of competition in the industry requires consideration of electronic payments.	4.10	0.72
Weighted Mean	4.35	

The results in Table 13 indicate that market competition is a strong motivator for MSMEs in Koronadal City to adopt electronic payment systems. The statement "Market competition drives the offering of electronic payment options" received a high mean score of 4.45, reflecting strong agreement that competitive pressures encourage businesses to adopt digital payments. The statement "Competitors' adoption of electronic payments influences decision-making" scored even higher at 4.50, showing that competitors' actions directly affect MSMEs' decisions on payment methods. The third statement, "The level of competition in the industry requires consideration of electronic payments," scored 4.10, suggesting that industry competition is a factor, though slightly less influential than direct competitor actions. The overall weighted mean of 4.35 underscores that MSMEs view competition as a significant driver in their adoption of electronic payments, highlighting the importance of staying competitive in the digital payment landscape.

TABLE 14 Predictors of Adoption – Availability of Training or Technical Support for Digital Payment Systems

Statement	Mean	Std. Deviation
1. Adequate training resources for electronic payment systems are accessible.	2.20	0.85
2. Technical support is available if issues arise with electronic payments.	2.35	0.88
3. The lack of training on electronic payment systems can be challenging.	3.60	0.75
Weighted Mean		2.72

Table 14 reveals that MSMEs in Koronadal City perceive limited access to training and technical support for electronic payment systems. Low mean scores for training availability (2.20) and technical support (2.35) indicate general disagreement. In contrast, the statement on challenges due to lack of training scored higher (3.60), showing acknowledgment of its impact.

The overall weighted mean of 2.72 suggests moderate concern, emphasizing the need for better training programs and support services to aid adoption.

Multiple Linear Regression Analysis

TABLE 15 ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	18.215	15	1.214	4.267	0.001
Residual	31.585	84	0.376		
Total	49.800	99			

The ANOVA table (Table 15) shows that the overall regression model is statistically significant with an F-value of 4.267 and a p-value of 0.001. This indicates that the independent variables collectively explain a significant portion of the variance in the adoption of electronic payment systems.

TABLE 16 Coefficients

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
	B	Beta		
(Constant)	1.205		3.205	0.002
Business Size	0.102	0.065	0.892	0.374
Industry Type	-0.025	-0.018	-0.185	0.854
Years of Operation	-0.067	-0.055	-0.784	0.435
Ownership Structure	0.134	0.098	1.124	0.263
Estimated Annual Revenue	0.276	0.218	2.560	0.012
Internet Accessibility	0.432	0.324	3.156	0.003
Perceived Ease of Use	0.281	0.254	2.782	0.007
Perceived Security	-0.201	-0.187	-2.109	0.038
Cost of Implementation	-0.164	-0.139	-1.552	0.124
Government Incentives	0.293	0.255	2.738	0.008
Customer Demand	0.415	0.360	4.355	0.000
Digital Literacy	0.176	0.144	1.543	0.127
Digital Infrastructure	0.342	0.292	3.428	0.001
Market Competition	0.222	0.191	2.110	0.038
Training or Technical Support	-0.096	-0.083	-0.972	0.334
R-square 0.684				

Dependent Variable: Level of Adoption of Electronic Payment Systems

The regression model yielded an R-square value of 0.684, indicating that 68.4% of the variance in the adoption of electronic payment systems among MSMEs in Koronadal City can be explained by the included predictors. This suggests a strong model fit and emphasizes the combined influence of various business, technological, and environmental factors.

Among the significant drivers of adoption, customer demand (B = 0.415, p = 0.000) emerged as the strongest predictor, highlighting that increased demand from customers directly encourages MSMEs to adopt electronic payment systems. Internet accessibility (B = 0.432, p = 0.003) and digital infrastructure (B = 0.342, p = 0.001) were also significant, showing that access to reliable internet and technology is essential for adoption. Additionally, government incentives (B = 0.293, p = 0.008) positively influenced adoption, suggesting that supportive policies and regulations facilitate the transition to digital payments. Perceived ease of use (B =

0.281, p = 0.007) was another important factor, indicating that user-friendly platforms are more likely to be adopted by businesses. Furthermore, estimated annual revenue (B = 0.276, p = 0.012) and market competition (B = 0.222, p = 0.038) were positively associated with adoption, implying that financially stronger businesses and those facing competitive pressure are more inclined to embrace electronic payment systems.

On the other hand, a notable inhibitor was perceived security (B = -0.201, p = 0.038), which showed a significant negative relationship with adoption. This suggests that businesses with heightened concerns about the security of digital transactions are less likely to implement electronic payment systems.

Several variables were found to be statistically insignificant, including business size, industry type, years of operation, ownership structure, and cost of implementation, digital literacy, and availability of training or technical support. However, some of these factors, like business size (B = 0.102) and ownership structure (B = 0.134), had positive coefficients and may still function as minor drivers, while others such as industry type (B = -0.025) and training support (B = -0.096) had negative coefficients, suggesting a potential inhibitory effect despite the lack of statistical significance.

The results lead to the rejection of both null hypotheses. H01 is rejected because several predictors, such as customer demand for electronic payments, internet accessibility, and digital infrastructure, were found to have significant relationships with the adoption of electronic payment systems, indicating that these factors influence adoption. Similarly, H02 is rejected as the analysis highlights a clear distinction between inhibitors and drivers. Significant drivers, such as customer demand and government incentives, were positively associated with adoption, while inhibitors like perceived security of transactions were negatively correlated. This differentiation in the roles of drivers and inhibitors further underscores the complexity of factors affecting electronic payment system adoption among MSMEs in Koronadal City.

Conclusion

This study on MSMEs in Koronadal City provides valuable insights into the current business landscape, electronic payment adoption rates, and the factors influencing this transition. The findings reveal that the local MSME sector is primarily composed of micro-enterprises within the Wholesale and Retail Trade and Accommodation and Food Service sectors. Most of these businesses operate as sole proprietorships and were established relatively recently, within the past 1 to 3 years. Despite the availability of some mobile payment options, cash remains the dominant form of transaction, indicating a limited level of digital payment integration in daily operations.

The overall adoption rate of electronic payments among MSMEs is found to be low, reflecting limited acceptance and usage. Key drivers influencing this shift include customer demand, digital infrastructure availability, government incentives, internet accessibility, and perceived ease of use. These factors collectively encourage the adoption of electronic payment systems, as businesses are more likely to embrace digital payments when customer demand is strong, technological infrastructure is readily available, and external incentives support their transition. However, perceived security concerns emerge as a significant inhibitor, suggesting that fears about transaction safety hinder adoption even when other conditions are favorable. This highlights the need for addressing security challenges to facilitate broader adoption.

These findings align with existing literature that emphasizes the importance of customer demand and robust infrastructure in advancing digital payment systems within small businesses (e.g., Ligon et al., 2019; Sahi et al., 2021). Similarly, security concerns as a barrier are

consistent with Kamble et al. (2020), underscoring a common challenge that requires action from financial institutions and policymakers. The results further highlight that while digital literacy, business size, and industry type did not show strong effects, other factors, such as government incentives and digital infrastructure, remain critical in supporting MSMEs' transition to digital payment systems.

In conclusion, the study underscores the importance of customer-driven demand, technological readiness, and supportive policies in driving electronic payment adoption among MSMEs. It also reveals that security concerns must be addressed to overcome significant barriers. To foster greater adoption of electronic payments among MSMEs in Koronadal City, targeted programs should focus on addressing these drivers and inhibitors. Policymakers and stakeholders can offer incentives, such as tax breaks or subsidies, to support investments in digital infrastructure and cyber security. Partnerships with financial institutions and technology providers can facilitate affordable access to secure electronic payment platforms and provide training programs to improve digital literacy among MSME owners and employees. Public awareness campaigns that boost customer demand for digital payments, alongside community-based technical support, could further strengthen MSMEs' readiness for digital transformation. These efforts would create a more enabling environment that aligns with both local business needs and broader economic goals for digital innovation.

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