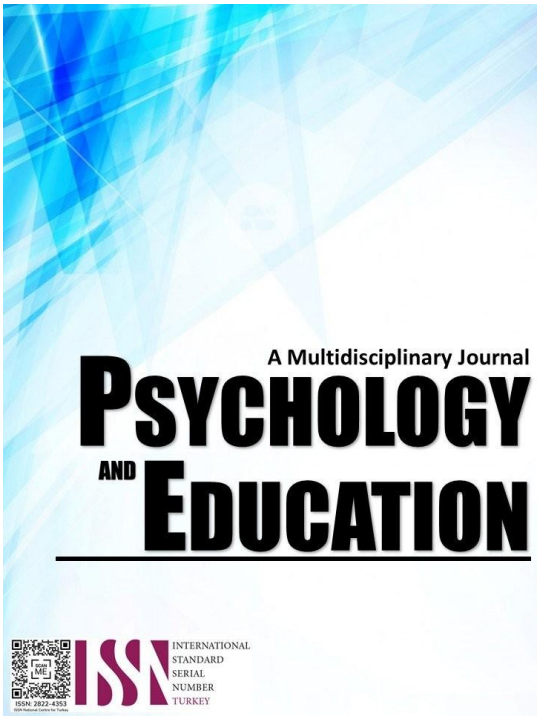
CLICK TO PAY: UNDERSTANDING E-PAYMENT ADOPTION IN GOVERNMENT TRANSACTIONS THROUGH PERCEIVED USEFULNESS



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Research Article

Click to Pay: Understanding E-Payment Adoption in Government Transactions Through Perceived Usefulness

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Abstract

Electronic payments (e-payments) are increasingly recognized as efficient alternatives to traditional payment methods; however, reliance on cash and manual transactions persists, contributing to slower processes, higher costs, reduced efficiency, limited financial inclusion, and heightened risks of fraud and corruption. This study examines the relationship between perceived usefulness and the adoption of e-payments in government transactions among Cotabateños, drawing on Fred Davis's Technology Acceptance Model (TAM). Employing a quantitative, descriptive–correlational design, the study used convenience and area sampling to survey 100 active e-payment users in North Cotabato, Philippines. Results demonstrate a strong, positive, and statistically significant relationship between perceived usefulness and e-payment adoption ($r = .80$, $p < .001$). These findings affirm TAM's assertion that perceived usefulness is a primary determinant of technology acceptance. Beyond theoretical validation, the study highlights the local dynamics that shape e-payment adoption. It highlights the need to address structural and perceptual barriers to enhance user confidence, strengthen financial inclusion, and promote more transparent and efficient government transactions.

Keywords: *electronic payment (e-payment) adoption, perceived usefulness, technology acceptance model (TAM), North Cotabato, Philippines*

Introduction

The global landscape of financial transactions is rapidly shifting towards electronic payment (e-payment) systems, positioning them as the preferred method for daily activities. In response to this evolving trend, governments worldwide have increasingly implemented e-payment infrastructures to enhance service efficiency and promote cashless transactions through mobile and user-friendly platforms. Despite these technological advancements, a significant portion of the population continues to rely on traditional payment methods. This persistent reliance on traditional approaches contributes to slower transaction speeds, elevated operational costs for businesses handling high transaction volumes, and limitations in financial inclusion, simultaneously increasing susceptibility to fraud and corruption (CoinDCX, 2023). Moreover, consumers using traditional methods may encounter difficulties in recovering funds in instances of damaged, misrepresented, or undelivered products (BFSI Network, 2023). While processes like cash handling, check writing, or manual data entry may seem familiar, they often prolong checkout times, ultimately diminishing customer satisfaction (Paygration, 2024). This underscores the inherent inefficiencies of conventional systems, characterized by cumbersome reconciliation, numerous inconveniences, and excessive human interaction (Singh, 2023). Furthermore, traditional payment methods, such as cash and checks, are notably constrained by their inflexibility, the requirement for physical presence, manual record-keeping, and limited remote transaction capabilities (Waave, 2024). This inflexibility can lead to significant delays, particularly in cross-border transactions, due to the involvement of multiple intermediaries and complex procedural requirements (Payine, 2023).

While the global trend toward e-payments is clear, their adoption in a provincial setting like North Cotabato, Philippines, presents challenges. It is crucial to acknowledge the digital divide, which includes issues such as varying levels of internet access and smartphone penetration across different demographics and geographic areas within the province. These factors can significantly influence a person's ability, even to access, let alone adopt, e-payment systems. Addressing this divide is a crucial component of any digital transformation initiative, providing important context for understanding the unique dynamics of technology adoption in this region.

Conversely, the widespread adoption of e-payment systems offers substantial benefits to citizens by providing a streamlined and accessible means for government transactions. These digital payment solutions have fundamentally revolutionized business processes by significantly reducing paperwork, transaction costs, and labor expenses, thereby enabling businesses to expand their market reach (Garg, 2016). Governments, in turn, can improve their fiscal balances and facilitate the broader acceptance of digital payments within society. As a vital component of the modern economy, e-payments enable secure and rapid transactions, benefiting all stakeholders (Lund, 2017). Studies also indicate that electronic payments play a crucial role in ensuring the accuracy and integrity of financial transaction records (Azih & Nwagwu, 2015). Locally, research by Moncada et al. (2022) highlights how electronic payments empower Filipino households to complete payment transactions safely, affordably, and consistently. Understanding the acceptance of e-payment systems in government transactions is therefore critical for governments to discern public preferences, differentiate e-payments from conventional methods, and fully leverage their inherent advantages in official operations.

The existing body of literature provides strong empirical support for the relationship between the perceived usefulness of e-payment systems and behavioral intention to adopt them (Nguyen et al., 2024). Numerous studies have consistently established a significant relationship between perceived usefulness and the adoption of e-payment services (Cheong & Nasuredin, 2023; Eelu & Nakakawa,

2018). Moreover, research indicates that consumers' intention to continue using e-payment is positively influenced by perceived usefulness (Kumar et al., 2024). However, despite extensive research conducted both nationally and internationally on this relationship, a notable gap exists in studies specifically focused on North Cotabato. This provincial context presents unique socio-economic and technological dynamics, and the local government's observed hesitation in fully integrating e-payment systems warrants specific investigation amidst rapid societal shifts driven by technological advancements. Addressing this gap is crucial for understanding the factors that influence the government's decision-making process and the subsequent implications for the province's residents. This research aims to explore the relationship between perceived usefulness and the adoption of e-payment in government transactions among the general populace of North Cotabato, Philippines. By doing so, the study seeks to contribute to the understanding of public sentiment regarding digital payment solutions and provide insights that could inform local governance and digital transformation initiatives.

This study is grounded in Fred Davis's Technology Acceptance Model (TAM), which was developed in 1986 and formally published in 1989. Specifically, this study was designed as a preliminary test of TAM, primarily focusing on perceived usefulness as the sole independent variable. TAM posits that the primary determinants of attitudes toward adopting technological systems, including e-payment platforms, are perceived usefulness and perceived ease of use (James, 2023). A key tenet of TAM is its emphasis on the end-user's perception: a technology's intrinsic value and user-friendliness, as conceptualized by its creators, are secondary to how potential users perceive these attributes for actual adoption (Thompson, 2017). Specifically, a positive attitude stemming from perceived usefulness can significantly increase technology adoption rates (Kelly & Palaniappan, 2023). Consumers are more likely to accelerate and endorse the adoption of a system when they believe it is genuinely beneficial. Given the focus on perceived usefulness and its direct effect on e-payment adoption, TAM offers a robust theoretical framework for examining how Cotabateños' perceptions of usefulness influence their decisions to integrate electronic payment systems into their interactions with government services. The model's emphasis on perceived benefits aligns perfectly with the study's objective, providing a strong lens through which to understand e-payment acceptance in North Cotabato.

Research Questions

This study examined the relationship between perceived usefulness and the adoption of e-payment systems in government transactions in North Cotabato. Specifically, it sought to address the following questions:

1. What is the status of e-payment adoption in government transactions among Cotabateños?
2. What is the extent of the perceived usefulness of e-payments in government transactions as assessed by Cotabateños?
3. Is there a significant relationship between perceived usefulness and the adoption of e-payment systems in government transactions among Cotabateños?

Methodology

Research Design

This quantitative study utilized a descriptive-correlational methodology to investigate the acceptance and perceived usefulness of e-payment in government transactions among residents of North Cotabato. Quantitative research, as defined by Bhandari (2020), is the process of collecting and analyzing numerical data. It can be used to find patterns and averages, make predictions, test causal relationships, and generalize results to wider populations. Moreover, descriptive design, as defined by Kelkar (2023), is a type of research design that utilizes both quantitative and qualitative methods to collect data and describe a phenomenon, situation, or population. In addition, the purpose of the descriptive study design was to observe and characterize phenomena while keeping variables constant. It strives to provide an accurate picture of the present situation or connections. Additionally, Cherry (2023) explained that a correlational research design is a type of research design that examines the relationships between two or more variables. Correlational studies are non-experimental, which means that the experimenter does not manipulate or control any of the variables. It does not establish causation; instead, it seeks to determine whether and how variables are related to one another.

The descriptive component used surveys to collect numerical data, enabling the identification of trends, averages, and key characteristics of e-payment usage without focusing on causal relationships. This method helped to clearly define the distribution and unique attributes of e-payment acceptance and its perceived value among Cotabateños. Concurrently, the correlational component examined the strength and direction of the relationship between these two variables—perceived usefulness and the adoption of e-payment—without manipulating them. This dual approach allowed the study to provide a detailed overview of the variables and their interconnections, laying the groundwork for potential future research into causal links.

Respondents

The sampling strategy of this study aimed to collect data effectively from a defined population. The respondents were identified as residents of legal age in North Cotabato who were regular users of e-payment services. To ensure the relevance and reliability of the findings, a sample size of 100 respondents was deemed sufficient, where Abdi-Mohamud et al. (2017) indicated that a participant group of 100 can lead to positive and effective outcomes. This number enables the collection of sufficient data to perform statistical analyses and draw reasonable inferences about the population. Furthermore, this approach deliberately focused on active users, defining them

as individuals who regularly engaged in financial transactions via e-payment platforms. By excluding non-users or those with sporadic usage, the study ensured that the gathered insights were from a group with direct and continuous experience, which was essential for investigating the research goals.

A combination of convenience sampling and area sampling was used to select respondents from various municipalities in North Cotabato. Convenience sampling was utilized to facilitate efficient data collection from readily available and willing individuals. This non-probability method enabled the rapid selection of respondents based on their accessibility to the researchers. To enhance the representativeness of the sample, an area sampling method was also incorporated. Given the geographical spread of the population, this approach allowed the researchers to focus on randomly selected areas within the province. A spinning wheel application was used to ensure an unbiased selection of these areas, and data were subsequently collected from individuals within those designated locations. This dual sampling strategy ensured the study's validity and reliability by gathering diverse perspectives while managing the logistical challenges of a broad geographical scope.

This study's use of convenience and area sampling, while practical, limits the external validity and generalizability of the findings to the entire population of North Cotabato. This non-probability sampling method may not be fully representative of the province's diverse demographics and varying technological access levels, potentially introducing selection bias. As such, the results of this study should be interpreted within this context.

Instrument

Adapted survey questionnaires are used to collect data for this study, and experts have validated the instrument to further enhance its reliability. The survey questionnaire consists of two parts.

The first part of the questionnaire focused on the adoption of e-payment systems. It was adapted from Lee's (2022) study, titled "Factors that Impact the Level of Acceptance of End-Users on Using E-Payment Systems in Malaysia." The original questionnaire achieved a high reliability score, with a Cronbach's Alpha of 0.935. Only the questions related to the intention to adopt e-payment systems were adapted for this study, as they directly pertained to measuring the respondents' willingness and acceptance of using e-payment systems in the context of government transactions in North Cotabato. The questionnaire consisted of ten statements rated by respondents using a Likert scale: 1 - Strongly Disagree, 2 - Disagree, 3 - Fairly Agree, 4 - Agree, and 5 - Strongly Agree.

The second section of the questionnaire concentrates on Perceived Usefulness and was adapted from Reynon et al. (2022), titled "Consumers' Attitude on Online Payment Systems as Driven by Risks." The original tool achieved Cronbach's alpha reliability of 0.94. This section consists of fourteen statements rated by respondents using a 5-point Likert scale.

To ensure the validity and reliability of the research instrument, a pilot test was conducted with 30 respondents from the target population. An acceptable Cronbach's alpha value of over 0.70 was achieved, confirming the instrument's reliability. The content was also validated by a panel of experts, including faculty from the College of Liberal Arts and Public Administration (CLAPA) and research advisers. This comprehensive approach ensured the instrument's accuracy prior to the commencement of the main data collection.

Procedure

Before data collection began, the researchers obtained formal approval by submitting a letter of request to the Dean of the College of Liberal Arts and Public Administration (CLAPA). To ensure the integrity of the research, the study instrument underwent a pilot test to establish its validity and dependability. Upon confirmation of the instrument's robustness, the official data-gathering phase was initiated.

During the one-month data collection period, the researchers meticulously adhered to ethical protocols. Each potential participant was approached and provided with a clear and concise Informed Consent Form (ICF), which outlined the study's purpose, procedures, and the voluntary nature of their participation. Researchers ensured all participants understood their right to refuse participation or withdraw at any time without penalty. To safeguard privacy, all completed questionnaires and signed ICFs were immediately sealed in plastic envelopes. The researchers remained on-site to address any questions or concerns, providing a supportive environment for the respondents to complete the survey independently and without pressure. All collected data and records were securely stored, strictly complying with the Data Privacy Act and other relevant ethical guidelines.

Following the data-gathering phase, the researchers, with the assistance of a statistician, meticulously collated, encoded, and tabulated the data from the sealed envelopes. The organized data was subjected to analysis and interpretation using appropriate statistical tools to derive meaningful insights and conclusions aligned with the study's objectives.

Ethical Considerations

This research was conducted in full compliance with established ethical standards, prioritizing the well-being and rights of all participants. The study's design was grounded in core ethical principles, including demonstrating social value, securing informed consent from all participants, and protecting vulnerable populations. A thorough risk-benefit analysis was performed to ensure that the potential benefits of the research outweighed any risks to the respondents.

The privacy and confidentiality of participant data were given top priority. The researchers strictly adhered to the provisions of the Data Privacy Act of 2012 (Republic Act 10173). This commitment was demonstrated through transparent data handling procedures, ensuring that data was collected for legitimate purposes only, and adhering to the principle of proportionality by processing only the necessary information. All data was handled with the highest degree of confidentiality and stored securely throughout every phase of the research.

Results and Discussion

Status of E-Payment Adoption Towards Government Transactions in North Cotabato

Table 1 presents the perceived status of e-payment adoption in government transactions among residents of North Cotabato. The overall mean score for e-payment adoption was 3.86, indicating a high level of adoption. All statements included in the instrument consistently garnered high mean scores, signifying a generally positive perception. Specifically, the statement regarding "usage of e-payment for personal transactions" received the highest mean score of 4.11. In contrast, "e-payment as a user-friendly electronic system" obtained the lowest mean score of 3.60.

Table 1. *Electronic Payment Adoption*

	Domains	*Mean*	*Standard Deviation*	*Descriptive Level*
1.	An e-payment system is better than traditional payment channels.	3.83	1.23	High
2.	An e-payment system is more efficient than traditional payment channels.	3.81	1.28	High
3.	Choosing a trusted e-payment system for transactions.	3.86	1.30	High
4.	A user-friendly electronic payment system will affect the adoption of the system.	3.60	1.12	High
5.	E-payment is fun to use when making transactions with the government.	3.63	1.19	High
6.	E-payment is a good idea when making transactions with the government.	3.92	1.15	High
7.	E-payment is needed to support transaction activities.	4.10	1.13	High
8.	E-payment is used repeatedly.	3.84	1.14	High
9.	Usage of e-payment for business transactions.	3.92	1.22	High
10.	Usage of e-payment for personal transactions.	4.11	1.13	High
	Overall	3.86	.95	High

***Legend**: 4.20–5.00, Very High; 3.40–4.19, High; 2.60–3.39, Moderate; 1.80–2.59, Low; 1.00–1.79, Very Low*

Analysis of the standard deviation for the ten statements in Table 1 revealed values consistently greater than 1.0, suggesting some variation in individual responses. However, the overall standard deviation for e-payment adoption in government transactions was 0.95. This indicates that despite individual differences, the majority of responses were reasonably close to the mean, signifying a consensus among Cotabateños regarding e-payment adoption.

Moreover, the results demonstrate a widespread embrace of electronic payment systems among North Cotabato residents, particularly in facilitating government-related transactions such as bill payments, fees, and other official services. E-payments are widely regarded as a beneficial and crucial instrument for streamlining these transactions, as they reduce time, cost, and administrative burden compared to traditional methods. While perceived enjoyment and user-friendliness received relatively lower, yet still high, ratings, these factors highlight areas for potential enhancement to further encourage adoption. Overall, the findings suggest that residents favor e-payments in government transactions primarily because of their efficiency, reliability, and convenience, underscoring their role as a practical alternative to conventional cash-based processes.

The study's findings on the perceived importance of user-friendliness, efficiency, and the overall positive view of e-payment as a "good idea" align with characteristics identified in previous research as essential for the enduring success of digital payment systems. Vinitha and Vasantha (2017) underscored the necessity of features such as user-friendliness, wide transactional acceptance, low transaction costs, ease of use, and real-time settlement for the sustained viability of e-payment solutions. Furthermore, the observed embrace of e-payment for both online and in-store transactions in North Cotabato mirrors the broader utility of electronic payment methods, which enable consumers to transact without the need for large amounts of physical cash (Lubanga et al., 2017). The benefits perceived by Cotabateños, such as time savings, ease of use, and transparency in facilitating transactional activities, are widely acknowledged advantages of electronic payment systems in the existing body of literature. This suggests that the positive reception and motivations for e-payment adoption in Cotabato Province align with the established benefits and influencing factors of such systems on a global scale. The relatively lower, but still high, mean scores for "enjoyment" and "user-friendliness" suggest that while functionality is appreciated, continuous improvement in these experiential aspects could further solidify and expand e-payment usage.

The Extent of the Perceived Usefulness of E-payments Adoption in North Cotabato

Table 2 presents the perceived usefulness of e-payments in government transactions as assessed by Cotabateños. The overall mean score of 3.98 indicated a highly favorable perception among respondents, with all individual statements garnering high ratings.

Specifically, the statement "using online payment systems will assist in making quick transactions" received the highest mean score of 4.18, reflecting a strong positive perception of its practicality. Conversely, the statement "online payment systems enable me to save money" obtained the lowest mean score of 3.73. The overall standard deviation for the seven statements was 0.93, indicating that while there was some variation in responses, most were relatively close to the average rating.

Table 2. *Perceived Usefulness*

	Domains	*Mean*	*Standard Deviation*	*Descriptive Level*
1.	Online payment systems for government transactions enable money savings.	3.73	1.16	High
2.	Online payment systems for government transactions help save time.	4.09	1.14	High
3.	Online payment systems for government transactions provide access to various payment services.	4.00	1.07	High
4.	Using online payment systems is advantageous.	4.11	1.11	High
5.	Using online payment systems will assist in making quick transactions.	4.18	1.15	High
6.	Online payment systems offer enhanced control over financial transactions.	3.78	1.14	High
7.	Making government transactions using online payment systems is being found to be useful.	4.03	1.20	High
	Overall	3.86	.95	High

***Legend**: 4.20–5.00, Very High; 3.40–4.19, High; 2.60–3.39, Moderate; 1.80–2.59, Low; 1.00–1.79, Very Low*

The responses collectively indicate that online payment systems are perceived mainly as advantageous for expediting transactions and enhancing overall utility. Cotabateños value these systems for their convenience and speed. While the direct financial savings aspect is less prominent in their perception, the improved financial oversight offered by detailed transaction records significantly contributes to their overall favorable view.

The findings regarding the perceived usefulness of e-payment systems in Cotabato Province align with the contemporary landscape of financial technology and consumer expectations. The development of e-payment technology is intrinsically linked to efforts to integrate financial functions with technological applications, benefiting both consumers and businesses (Noer et al., 2023). The high mean score for the perceived ability of e-payment to facilitate quick transactions aligns with research indicating that consumers prioritize e-payment systems offering fast, secure, accessible, and efficient services within a unified platform (Alswaigh & Aloud, 2021). When these crucial conditions are met, individuals are demonstrably more inclined to adopt such systems (Keni et al., 2020).

The concept of perceived usefulness, as reflected in this study, encompasses users' assessment of a technology's benefits and its capacity to simplify access to needed services (Wardana et al., 2022). The overall favorable evaluation of e-payment's usefulness by Cotabateños, therefore, serves as a significant driver of their willingness to utilize this technology. While "saving money" received a comparatively lower score, the emphasis on "quicker transactions" and "beneficial" aspects suggests that the utilitarian value, particularly in terms of efficiency and convenience, strongly outweighs direct cost-saving perceptions in driving adoption within this context. The recognition of enhanced financial oversight, despite not being the highest-rated benefit, further demonstrates a nuanced appreciation of e-payment's comprehensive utility.

Relationship Between Variables

Table 3 illustrates the correlation between perceived usefulness and the adoption of e-payment in government transactions within North Cotabato. The statistical analysis yielded a p-value of <.001, indicating a highly statistically significant correlation between perceived usefulness and e-payment adoption. The correlation coefficient (r-value) of .80 demonstrates a robust positive correlation between these two variables. This robust relationship suggests a close association between perceived usefulness and the adoption of e-payment. The corresponding effect size, calculated as r2 = .64, indicates that perceived usefulness accounts for 64% of the variance in e-payment adoption, highlighting its substantial empirical contribution to the model.

Table 3. *Relationship Between Variables*

Variable	*Correlation Coefficient*	*p-value*	*Remarks*
Perceived Usefulness and E-payment Adoption	.80	.00	Significant
r2 = .64			

These findings lead to the rejection of the null hypothesis, confirming a significant relationship. The results unequivocally highlight that residents of North Cotabato perceive e-payment as more beneficial and instrumental in streamlining processes, and their inclination to adopt these digital solutions for administrative duties is strongly associated with this perception. This growing confidence in technology underscores its perceived effectiveness as a means of accessing government services, characterized by rapid processing capabilities.

For the people of Cotabato Province, the simplicity, transparency, and reliability offered by electronic payment systems are critical

drivers, contributing to their escalating adoption. The profound positive correlation supports the proposition of the Technology Acceptance Model (TAM), reinforcing that continuous enhancements in the functionality, security, and user-friendliness of e-payment systems are likely to further incentivize their widespread use. This trend carries substantial implications for the province's future economic modernization, financial inclusion initiatives, and the advancement of digital governance.

These results are consistent with existing academic literature. The findings align with those of Nguyen et al. (2024), who also reported that perceived usefulness significantly affects the adoption of e-government services. Similarly, Cheong and Nasuredin (2023) identified a significant association between the use of e-payment systems and perceived utility. Furthermore, the study corroborates the findings of Kumar et al. (2024), which indicated that customers' intentions to continue utilizing e-payments are favorably influenced by perceived usefulness. Echoing these sentiments, Eelu and Nakakawa (2018) similarly demonstrated a favorable correlation between the implementation of e-payment systems and their perceived usefulness.

Conclusions

This study unequivocally demonstrates that Cotabateños have a high and favorable perception of the usefulness of e-payments in government transactions, directly contributing to their widespread adoption. E-payment systems are perceived as highly advantageous for seamlessly integrating both personal and business transactions into daily life. Specifically, their utility in expediting processes, enhancing convenience, and providing improved financial oversight through detailed record-keeping is keenly recognized by citizens. This favorable perception highlights the transformative potential of e-payment systems to streamline administrative tasks and enhance the overall user experience within the public sector. The general adoption of e-payments signifies their increasing relevance in enhancing greater accessibility and convenience in government services.

Crucially, the findings reveal a statistically significant and robust positive correlation between perceived usefulness and the adoption of e-payment in government transactions in North Cotabato. This indicates that the higher Cotabateños' perception of e-payment's utility, the more readily they adopt these digital platforms. This compelling evidence strongly supports the theoretical underpinnings of Fred Davis's Technology Acceptance Model (TAM). As posited by TAM, perceived usefulness is a critical determinant of technology adoption, and this research validates that principle within the context of e-payment systems in a developing provincial setting. The significant relationship observed reinforces TAM's assertion that individuals are more inclined to accept and integrate technology into their practices when it is perceived to enhance their performance or efficiency.

While providing robust insights into the interplay of perceived usefulness and e-payment adoption, this study acknowledges certain limitations. It primarily focused on perceived usefulness as the sole independent variable, thereby not exploring other pertinent factors such as perceived ease of use, trust, security, accessibility, or broader socio-cultural and economic influences that may shape e-payment acceptance. Furthermore, the geographic scope was confined to North Cotabato, utilizing assessments exclusively from Cotabateños. Consequently, the findings may not be directly generalizable to other provinces or national contexts, as they do not account for potential technological infrastructure disparities, diverse cultural norms, or varying economic landscapes that could impact e-payment adoption elsewhere. These limitations underscore the context-specific nature of the research, advising caution in the broader interpretation and application of its findings.

Given the high perceived usefulness of e-payment for personal and business transactions, system developers should prioritize continuous improvements to ensure the reliability, efficiency, and responsiveness of e-payment platforms. This includes minimizing system downtimes, optimizing transaction speeds, and guaranteeing data security. Regular updates, rigorous testing, and the integration of user feedback are paramount to maintaining a dependable and intuitive system. By fostering trust and confidence through superior technical performance and user experience, developers can further solidify the integration of digital financial solutions into the daily lives of Cotabateños for both personal and official purposes.

The government in North Cotabato is urged to intensify efforts to integrate e-payment systems across a broader spectrum of its offices and departments, thereby enhancing public service delivery. This should involve a strategic rollout of e-payment options for diverse government transactions, thereby increasing accessibility and convenience for citizens. Transparent and effective collaboration with system providers is crucial for addressing technical requirements, optimizing performance, and implementing necessary enhancements. Proactive public awareness campaigns that highlight the benefits of e-payment, coupled with accessible guidance on usage and prompt resolution of user issues, will be crucial in overcoming adoption barriers and fostering greater public engagement.

Following the government's lead, local businesses are strongly encouraged to adopt e-payment platforms into their operational frameworks. This integration will not only facilitate smoother and more efficient transactions for their customers but also streamline internal processes. Embracing e-payment enables businesses to reduce transaction times, meet the escalating demand for convenient payment methods, and position themselves as progressive and adaptable entities in an increasingly digitized economic landscape. Such adoption will benefit their clientele and contribute significantly to the province's overall digital economic transformation.

Building upon this foundational study, future research is highly recommended to explore additional factors influencing e-payment adoption. Investigating variables such as perceived ease of use, trust, security concerns, digital literacy, infrastructural accessibility, and socio-cultural and economic differences across various regions would provide a more comprehensive understanding of the

multifaceted nature of e-payment acceptance. Expanding the geographical scope beyond North Cotabato to include a broader range of provinces or diverse demographic groups is also strongly advised. This expansion would significantly enhance the generalizability and applicability of findings, contributing more broadly to the academic discourse on financial technology adoption in developing contexts.

This study has several limitations that should be acknowledged. First, the study was conducted in a specific province in the Philippines, and the findings may not be generalizable to other regions or countries with different technological landscapes, government processes, or socio-cultural contexts.

Furthermore, the study's reliance on a relatively small, non-probability convenience sample of 100 respondents limits the external validity of the results. This sampling method, while practical, may introduce selection bias and does not guarantee that the sample is fully representative of the broader population of North Cotabato. The researchers therefore recommend that future research replicate this study with a larger, more representative sample, ideally utilizing probability-based sampling methods to enhance the generalizability of the findings.

Finally, as a partial application of the Technology Acceptance Model (TAM), this study focused exclusively on perceived usefulness. It did not explore other critical factors that may influence e-payment adoption, such as perceived ease of use, trust, security, and accessibility. Additionally, the absence of a demographic profile of the respondents in the data collection limits the ability to analyze how different population segments might adopt e-payment systems. Therefore, future studies should integrate these additional determinants and demographic variables to provide a more comprehensive and nuanced understanding of e-payment adoption.

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