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Research Article

Evaluating Vendors' Level of Usage towards Paleng-QR PH Plus in Public Mall in Ozamiz City

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ABSTRACT

The growing demand for convenient and secure financial transactions has increased the relevance of cashless payment systems in the country. The Paleng-QR PH Plus program, initiated by the Bangko Sentral ng Pilipinas (BSP) and the Department of the Interior and Local Government (DILG), aims to promote digital payment usage in public markets and local transportation. Grounded with the Technology Acceptance Model (TAM), understanding how individuals accept and use technology, this study aims to assess vendors' level of usage and identify the challenges encountered in using the system. A concurrent mixed-methods research design was employed to obtain both numerical data and personal insights for a deeper understanding of the vendors' experiences. A total of one hundred ninety (190) vendors participated in the survey, while twenty (20) vendors were interviewed. Results revealed that among the six (6) variables, three (3) had very high implications, while the other three (3) were rated high. However, 'habit' ranked the lowest, indicating vendors have not fully integrated digital payments into daily transactions. Four major challenges were also identified: one (1) frequent application updates, two (2) slow public Wi- Fi connection, three (3) cellular load requirements, and four (4) lack of digital literacy. Based on the findings, the respondents suggested the need for targeted training programs to improve digital literacy, continuous education on using digital payments, and technical support to build vendor confidence. Thus, structured training and support mechanisms must be implemented to encourage regular usage and ensure long-term adoption of the digital payment system.

Keywords: *Vendors' level of usage, Paleng-QR PH Plus, Ease of use, Habit, Service security, Continuous usage, Usefulness and Word-of-mouth*

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Background

The rise of technology and the widespread use of cell phones make our lives easier. Mobile banking apps, digital wallets, and contactless payments have become integral parts of modern life, offering immediate access to financial services and enabling seamless transactions. Through scanning QR codes, it provides a quick and efficient way to facilitate transactions. The Paleng-QR Ph program aims to strengthen the country's digital payment system by promoting the adoption of cashless transactions among market vendors, small shop owners, and tricycle drivers and operators (TODA) across all cities and municipalities (Cabrera, 2023). This initiative enables merchants, customers, tricycle drivers, and commuters to open transaction accounts for seamless digital payments (Bangko Sentral ng Pilipinas, 2022). Small and medium-sized firms can benefit from QR code technology (Manan et al., 2023). According to Eren (2022), since there is a shorter interaction time between the consumer and the merchant, QR code m-payment will result in happier customers. Additionally, banks and other companies who supply QR code m-payment services persuade their clients that using them would provide them with more efficiency, flexibility, and control over their life. This is a crucial component that will enhance the client experience. On September 26, 2023, the Bangko Sentral ng Pilipinas launched the Paleng-QR PH Plus Program at the Public Mall of Ozamiz City to enhance digital payment methods. During initial interviews, the researchers surveyed vendors who highlighted various challenges with Paleng-QR PH Plus, including slow public wifi, limited tech knowledge among older vendors, concerns about scams, and difficulties with financial service providers like Gcash due to frequent updates. Despite proactive measures by the Local Government Unit of Ozamiz through City Ordinance No. 1275-2023, not all vendors are utilizing Paleng-QR PH Plus. Additionally, there's a lack of research on the usage level among vendors who received orientation about the program from BSP. The researchers conducted this study to evaluate vendors' level of usage towards Paleng-QR PH Plus in Public Mall, Ozamiz City. The researchers aimed: (1) to analyze how vendors perceive and interact with Paleng-QR PH Plus, providing insights into its effectiveness and identifying areas for potential improvement. This study also aimed (2) to understand their views and experiences with the system. Furthermore, the study was conducted (3) to identify which among the dimensions is least use by the vendors.

Literature Review

Technology Acceptance Model

The theoretical underpinning of this study is the Technology Acceptance Model (TAM), initially proposed by Davis (1989), which has been one of the most influential frameworks for understanding how individuals accept and use technology. TAM is grounded in the Theory of Reasoned Action (TRA) and suggests that two main factors, perceived ease of use (PEOU) and perceived usefulness (PU), significantly influence users' decisions to adopt new technologies. Extensive research supports the premise that both PU and PEOU are key predictors of technology acceptance across various contexts, including e-commerce, healthcare, and education (Davis, 1989; Venkatesh & Davis, 2000). Over time, TAM has evolved, with extensions like TAM2 and TAM3 integrating additional factors such as social influence, cognitive instrumental processes, and individual differences, further broadening its applicability (Venkatesh & Bala, 2008). TAM's simplicity and adaptability have made it a popular tool for understanding technology adoption in diverse sectors, especially in areas like e-learning and mobile applications (Venkatesh et al., 2003).

Evolution and Extensions of TAM

However, despite its widespread use, TAM has faced criticism for oversimplifying the adoption process by focusing primarily on perceived usefulness and ease of use. Critics argue that TAM does not account for emotional, social, and psychological factors that may also play a role in technology acceptance (Bhattacherjee, 2001). Moreover, its original assumptions were based on Western contexts, raising concerns about its cultural applicability (Agarwal & Prasad, 1999). To address these

limitations, researchers have proposed integrating TAM with other models like the Theory of Planned Behavior (TPB) and the Unified Theory of Acceptance and Use of Technology (UTAUT), which provide a more holistic understanding of the factors that influence technology acceptance across different cultural settings (Venkatesh et al., 2003). These advancements highlight the evolving nature of TAM and its potential to remain relevant in the face of emerging technologies.

TAM in E-commerce and Virtual Marketplaces

Furthermore, the model has been widely applied to study e-commerce adoption and technology integration for market vendors. Research has shown that perceived ease of use and perceived usefulness are crucial determinants of intention to use e-marketplaces (Jahangir & Zia-Ul-Haq, 2023; Jushermi et al., 2024). Integration of TAM with other theories, such as the Theory of Diffusion of Innovations and Theory of Planned Behavior, provides a comprehensive framework for understanding technology adoption in online marketplaces (Jahangir & Zia-Ul-Haq, 2023). Studies have also explored the role of user experience factors, including functionality, aesthetics, and usability, in technology acceptance for virtual marketplaces (Widjaja et al., 2022). Researchers have employed various methodologies, including systematic literature reviews (Oktaria et al., 2024) and quantitative approaches using structural equation modeling and path analysis (Jahangir & Zia-Ul-Haq, 2023; Jushermi et al., 2024), to investigate factors influencing e-commerce technology acceptance among different populations.

Methodology

The researchers employed a concurrent mixed methods research design to gather both quantitative and qualitative data simultaneously, allowing for a comprehensive evaluation of vendors' usage of the Paleng-QR PH Plus system. This approach ensured that each type of data was collected independently, without influencing the other (Bell et al., 2022). The study was conducted at the Public Mall of Ozamiz City, where the initiative is actively implemented. A total of 190 vendors were selected using stratified random sampling from a population of 372 vendors to participate in the study, with 20 additional participants chosen for the qualitative phase, where data saturation was reached (Hennick et al., 2018).

The data collection involved a modified questionnaire adapted from Zhong & Moon (2022), which focused on six key variables: Ease of Use, Habit, Service Security, Continuous Usage, Usefulness, and Word-of-Mouth. The reliability of the instrument was assessed using Cronbach's Alpha, yielding values ranging from acceptable to excellent ($\alpha = 0.748$ to $\alpha = 0.977$). This validated instrument, approved by experts, including the Bangko Sentral ng Pilipinas, ensured that the collected data were reliable and appropriate for evaluating vendors' usage levels. Qualitative data were gathered using semi-structured interviews, and thematic analysis was applied to identify recurring patterns, with saturation reached as no new themes emerged.

Ethical considerations were thoroughly addressed throughout the study, with informed consent obtained from all participants. Formal permissions were secured, and data privacy was ensured, with all responses kept confidential. The quantitative data were analyzed using a 4-point Likert scale, while the qualitative data were analyzed thematically, providing a well-rounded understanding of the vendors' experiences. This concurrent mixed methods approach offered a comprehensive evaluation of the Paleng-QR PH Plus system's effectiveness and usability, contributing valuable insights to the initiative's ongoing implementation.

Results and Discussion

Table 1. Respondent's Responses on their Level of Usage of Paleng-QR PH Plus in terms of Ease of Use

Indicators	Mean	Interpretation
1. I find Paleng-QR PH Plus easy for me	3.46	Strongly Agree
2. Using Paleng-QR PH Plus does not require a lot of mental effort	3.33	Strongly Agree
3. It is easy to learn how to use Paleng-QR PH Plus	3.47	Strongly Agree
4. It is easy to become proficient in using Paleng-QR PH Plus	3.34	Strongly Agree
Grand Mean	**3.4**	**Strongly Agree**

Table 1 shows the respondent's responses on their level of Paleng-QR PH Plus usage in terms of ease-of-use. It was shown that all indicators were strongly agreed by the respondent. Moreover, the grand mean of 3.4 indicates that respondents agreed strongly with the indicators on the level of usage towards Paleng-QR PH Plus which also means that vendors' level of usage is very high. This finding aligns with Yang et al. (2021), who established that ease of use significantly influences user attitudes and behavioral intentions toward digital payment systems. However, our results contrast with Reynon et al. (2022), who found that while ease of use fosters positive attitudes, it may not directly influence adoption when users prioritize utility over simplicity. The strong agreement across all ease of use dimensions suggests that the Paleng-QR PH Plus system successfully addresses one of TAM's core constructs. This finding validates TAM's universal applicability in the Filipino market context, extending beyond the Western contexts where it was originally developed (Agarwal & Prasad, 1999). Additionally, findings strongly support Almanthari et al. (2020), who emphasized that ease of use shapes technology acceptance attitudes.

Table 2. Respondent's Responses on their Level of Usage of Paleng-QR PH Plus in terms of Habit

Indicators	Mean	Interpretation
1. Using Paleng-QR PH Plus has become a habit for me	2.55	Agree
2. Using Paleng-QR PH Plus has become natural for me	2.86	Agree
3. Most of the time, Paleng-QR PH Plus is the only payment method I use	2.42	Disagree
4. Using Paleng-QR PH P has become part of my daily routine	2.98	Agree
Grand Mean	**2.70**	**Agree**

The table 2 presents the respondents' answers regarding their level of usage based on habit. The highest mean of 2.98 indicates that the respondents agree that using Paleng-QR PH Plus has been part of their daily routine. On the other hand, the lowest mean of 2.42 illustrates that the respondents disagree that most of the time, Paleng-QR PH Plus is the only payment method they use. Moreover, the grand mean of 2.70 indicates that respondents agree with the indicators on the level of usage towards Paleng-QR PH Plus which also means that vendors' level of usage is high. This finding provides interesting insights into TAM's extended models, particularly challenging the assumptions in UTAUT and TAM3 about habit formation (Venkatesh & Bala, 2008). However, contrary to Karjaluoto et al. (2019), who found that consistent e-wallet usage leads to habit formation, this study reveals that even with perceived ease of use and usefulness, vendors have not developed habitual usage patterns. This diverges from Chávez Herting et al. (2020), who positioned habit as a significant predictor of continued technology use. The findings suggest that in emerging digital payment markets, habit formation may require more extensive integration periods and supportive infrastructure.

Furthermore, while Wang et al. (2013, as cited in Santosa et al., 2021) found that familiarity breeds satisfaction and habit, the findings

indicate that familiarity alone is insufficient. The persistence of cash-based transactions alongside digital options suggests that habit formation in payment methods requires ecosystem-wide adoption rather than individual comfort.

Table 3. Respondent's Responses on their Level of Usage of Paleng-QR PH Plus in terms of Service Security

Indicators	Mean	Interpretation
1. It is relatively safe to provide transaction information during usage	3.53	Strongly Agree
2. I find no issue in providing personal information when using Paleng-QR PH Plus	3.46	Strongly Agree
3. The risk associated with using Paleng-QR PH Plus are relatively low	3.44	Strongly Agree
4. Paleng-QR PH Plus is safe	3.48	Strongly Agree
Grand Mean	**3.48**	**Strongly Agree**

This table displays how respondents rated their usage of Paleng-QR PH Plus with respect to service security. It was shown that all indicators were strongly agreed by the respondents. Moreover, the grand mean of 3.48 indicates that respondents agreed strongly with the indicators on the level of usage towards Paleng-QR PH Plus which also means that vendors' level of usage is very high. This validates Fan et al. (2018) and Singh and Singh (2020), who emphasized security's crucial role in digital payment adoption. Moreover, the strong security confidence validates TAM's evolution to include contextual factors beyond the original perceived usefulness and ease of use constructs. This supports UTAUT2's inclusion of security as a moderating factor in technology acceptance, as Liu et al. (2022) found that enhanced security perceptions increase adoption intentions. However, our results show higher security confidence than typically reported in developing country contexts, suggesting that BSP's implementation approach may have effectively addressed common security concerns.

Table 4. Respondent's Responses on their Level of Usage of Paleng-QR PH Plus in terms of Continuous Usage

Indicators	Mean	Interpretation
1. I plan to use Paleng-QR PH Plus in the coming months	3.61	Strongly Agree
2. I will use the Paleng-QR PH Plus to pay for all my future purchases	2.76	Agree
3. I prefer to continue using the Paleng-QR PH Plus over traditional cash-based mehod	2.42	Disagree
Grand Mean	**2.93**	**Agree**

Table shows the respondent's responses on their level of usage in terms of continuous usage. With the highest mean of 3.61, the respondents agreed strongly that they plan to use Paleng-QR PH Plus in the coming months. On the other hand, the lowest mean of 2.42 illustrates that the respondents disagree that they prefer to continue using the Paleng-QR PH Plus over the traditional cash-based method. Moreover, the grand mean of 2.93 indicates that respondents agree with the indicators on the level of usage towards Paleng-QR PH Plus, which also means that vendors' level of usage is high. However, this finding also implies that the Technology Acceptance Model's linear progression, from attitude to intention to behavior, may be more complex within multi-option payment environments, as the preference for traditional methods highlights a need for TAM to better account for competitive

alternatives. Amid the ongoing pandemic, consumers have become increasingly aware of the risk of infection and recognized that e-payment can help minimize exposure, thereby enhancing their perception of its usefulness and boosting their intention to continue using it (Liu et al., 2022). Sanchez and Tampoco (2023) argue that higher satisfaction with a mobile wallet's usefulness, security features, and trust in service providers increases the likelihood of continued usage. While much research has focused on the adoption of online and mobile payment systems, there has been relatively little attention to the sustained use of mobile payment services, particularly those utilizing QR codes (Gao et al., 2018).

Table 5. Respondent's Responses on their Level of Usage of Paleng-QR PH Plus in terms of Usefulness

Indicators	Mean	Interpretation
1. Paleng-QR PH Plus helps me make payments smoothly	2.97	Agree
2. The use of Paleng-QR PH Plus is useful for me	3.07	Agree
Grand Mean	**3.02**	**Agree**

Presented in the table are the respondents' responses concerning their usage level in relation to usefulness. The highest mean of 3.07 indicates that the respondents agree that the use of Paleng-QR PH Plus is useful for them. Generally, the grand mean of 3.02 indicates that respondents agree with the indicators on the level of usage towards Paleng-QR PH Plus which also means that vendors' level of usage is highThe moderate-to-strong usefulness ratings validate TAM's core assumption while suggesting room for enhancement. This supports Safari et al. (2020), who found usefulness to be a key attitude predictor. Users perceive these systems as efficient tools that enhance productivity by streamlining monetary transactions (Kustono et al., 2020). When users find mobile wallets highly useful, they are more likely to feel satisfied and opt to continue using them (Sanchez & Tampoco, 2023).

Table 6. Respondent's Responses on their Level of Usage of Paleng-QR PH Plus in terms of Word-of-Mouth

Indicators	Mean	Interpretation
1. I plan to recommend Paleng-QR PH Plus to my friends	3.66	Strongly Agree
2. I want to tell people around me about the payment experience at my store using Paleng-QR PH Plus	3.68	Strongly Agree
3. I will encourage people around me to try Paleng-QR PH Plus	3. 65	Strongly Agree
Grand Mean	**3. 66**	**Strongly Agree**

This table displays how respondents rated their usage based on word-of-mouth communication. The highest mean of 3.68 indicates that the respondents strongly agree that they want to tell people around them about the payment experience at their store using Paleng- QR PH Plus. Moreover, the grand mean of 3.66 indicates that respondents agreed strongly with the indicators on the level of usage towards Paleng-QR PH Plus which also means that vendors' level of usage is very high. Prentice (2017; as cited in Kuriawan et al., 2022) highlights that digital payments and word-of-mouth (WOM) significantly influence purchase motivation. Similarly, Rahman et al. (2022) found that WOM mediates the direct effects of trust in service providers, trust in apps, and security risks on the intention to use. WOM is regarded as more credible and trustworthy since the information is shared by experienced users rather than through traditional marketing methods. Recognizing its significance, numerous researchers have studied WOM extensively in recent years (Hameed et al., 2024).

Table 7. Respondent's Responses on their Level of Usage of Paleng-QR PH Plus in Public Mall, Ozamiz City

Variables	Grand Mean	Interpretation
Ease of Use	3.4	Strongly Agree
Habit	2.70	Agree
Service Security	3.48	Strongly Agree
Continuous Usage	2.93	Agree
Usefulness	3.02	Agree
Word-of-mouth	3.66	Strongly Agree

Table 7 summarizes the respondent's responses on evaluating vendors' level of usage towards Paleng-QR PH Plus in Public Mall, Ozamiz City. Among the dimensions of contactless payment service quality, habit is least used by the vendors. Paleng-QR PH Plus is not their sole payment method; they also accept cash payments, and some vendors are older or lack digital literacy in digital payments. Thus, vendors must be given another seminar to educate vendors on how to use digital payment systems effectively which could improve their habit of using Paleng-QR PH Plus. Users often engage in the use of technology or technology-related products automatically due to learned behavior (Ariffin et al., 2020). Merchants are less likely to adopt digital payments if consumers rarely use them (Arango et al., 2018). Consequently, previous studies have identified habit as a significant barrier to adopting new technology, as it strongly impacts consumer preferences and intentions (Penney et al., 2021).

Problems Encountered by the Vendors towards Paleng-QR PH Plus in Public Mall, Ozamiz City

Theme 1*: Frequent Application Updates*

In connection to this the participants have expressed their utterances below:

> Participant 1 stated *"So far, the difficulties arise when the system lags due to random update, like during server maintenance in GCash."*
>
> Participant 6 also stated *"I struggle because it keeps needing updates".*
>
> Participant 7 mentioned *"I encounter it sometimes, it is bothersome always having to update just to use it. Sometimes it needs to update. The updating is really troublesome".*
>
> Participant 10 uttered *"So far, the problem lies with GCash because it frequently undergoes maintenance and sometimes you cannot transact because it keeps updating".*

Out of twenty (20) participants who answered during the interview, four (4) responded that the frequency of the application update is one of the problems they encountered with Paleng-QR PH Plus. In the study of Managuelod et al. (2023) states that it can be time-consuming and requires ongoing efforts to keep up with system updates and changes. E-wallet services can become inconvenient when they require consumers to frequently update the application. At times, the process involves unnecessary steps to complete a transaction, which can be frustrating for users, particularly those using the service for the first time (Meikeng, 2019). Smith et al. (2022) identify several strategies to mitigate technical glitches in electronic payment platforms, including regular system maintenance, robust quality assurance and testing procedures, redundancy measures, prompt customer support, effective incident management protocols, and collaboration between platform providers, payment processors, and regulatory bodies.

Theme 2: *Slow Public Wi-Fi Connection*
In line with this, the participants shared the following statements below:

> Participant 2 said *"There was a time when I sent money, and it took a long time to arrive. It took several days before the money returned to my account. Perhaps it is due to the signal because the public Wi-Fi is very slow".*
>
> Participant 3 also mentioned *"Sometimes, it is the connection, the internet connection of public Wi-Fi is slow".*
>
> Participant 7 also stated *"We do not have Wi-Fi here in our store, but there is a public Wi-Fi available, although the signal is very weak, which is the problem".*
>
> Participant 9 uttered *"The thing is, our current public Wi-Fi is barely usable, so they really need to address the network because it is causing us a lot of trouble, especially when we are trying to transact".*
>
> Participant 11 responded *"Also, the Wi-Fi here in the public mall is so slow that I cannot use it. It is too slow that even opening Gcash becomes difficult".*
>
> Participant 13 also responded *"When the signal of the public Wi-Fi is slow, I struggle with transactions. That is often my problem when using online services because without signal, we struggle to open apps. That is it".*
>
> Participant 15 also conveyed *"Sometimes, the signal is slow, I am annoyed".*

Seven (7) out of the twenty (20) interview participants reported that one problem they experienced with Paleng-QR PH Plus was the slow public Wi-Fi connection. The BSP (2020) highlights that the Philippines ranks as having the 4th slowest internet speed among 88 countries, according to the OpenSignal 2018 State of LTE. In addition to security concerns, limited internet access can also reduce consumers' interest in using e-wallets. Faiz et al. (2020) note that the large number of internet connections creates various issues, such as network congestion, disconnection, signal range problems, and insufficient device support. This barrier to e-wallet adoption is especially common in rural areas, as e-wallet services rely heavily on stable internet connections (Rathore, 2016; as cited in Ramli & Hamzah, 2021).

Theme 3: *Cellular Load Requirements*
Related to this, the participants conveyed their thoughts as follows:

> Participant 5 responded *"My problem is that I cannot open or I cannot use the digital system if I don't have load. Therefore, I need to buy cellular load".*
>
> Participant 7 also responded *"My problem with this is that I still need to have cellular load to use digital payment".*
>
> Participant 11 said *"When I do not have data, I cannot use Gcash. I need to buy load to use it because we don't have Wi-Fi here in our store".*
>
> Participant 15 also said *"My issue with this is that I need not to be run out of load to monitor transactions. Since I do cash in and cash out, I need to ensure that I have enough load to see if the money my customer cashed in has been credited to me. So, I really need to load".*
>
> Participant 18 uttered *"So, we cannot use Gcash if there is no load. So that is my problem and the difficulties I encountered using Gcash if I do not have load".*

Of the twenty (20) participants interviewed, five (5) indicated that needing cellular load was one of the problems they faced with Paleng-QR PH Plus. For an e-wallet to operate, it must have a sufficient pre-loaded balance, requiring money to be credited (Ramli & Hamzah, 2021). Historically, cellular services have focused on the mass market, with less emphasis on providing wireless connectivity for businesses (Oughton et al., 2021). Specifically, to utilize digital payment technologies, businesses must have the necessary infrastructure (e.g., smartphones), internet access (e.g., for loading credits and data), a mobile-linked bank account, the ability to pay usage fees, and the required literacy or technological skills to operate the product (Ligon et al., 2019).

Theme 4: *Lack of Digital Literacy*

In this regard, the participants voiced the following sentiments:

> Participant 4 mentioned *"Actually, for me, those around the age of 20 plus, it is not really difficult for us. Most of the time, it is those who are elderly who encounter these situations, where they can still be scammed or just like that".*
>
> Participant 8 responded *"I only noticed this now because my mom runs this store, and sometimes I am here too. The problem with this is that we have GCash, but the thing is, my mom does not know how to use it. She is only familiar with the keypad, so it is really difficult".*
>
> Participant 16 also responded *"The problem for me is that I do not know how to use a cellphone properly. Thankfully, I have a grandchild who helps me, but it is tough because I only know how to use the keypad"*
>
> Participant 13 uttered *"As for me, I do not have any GCash or similar apps. So, when our customer wants to pay through online, I ask my friend from the neighboring stall to have the payment sent to her, then she just gives me the cash. I really do not know how to do it myself, so I just have it sent to her"*

Among the twenty (20) interview participants, four (4) shared that one issue they experienced with Paleng-QR PH Plus was their lack of digital literacy. Many older individuals lack the necessary skills and understanding to engage confidently in digital transactions. The rapid pace of technological advancement can overwhelm older generations, leading to hesitancy to embrace digital payment methods. The authors found that both merchants and retailers still lack knowledge, awareness, and experience with the NFC mobile payment system (Halaweh & Qaisi, 2016; as cited in Ramli & Hamzah, 2021), although merchants generally possess enough literacy to use digital payment systems (Ligon et al., 2019). Vendors with limited digital literacy often resort to using family members' QR codes to conduct business, relying on family members to receive payments (He et al., 2023).

Conclusion

The study successfully answered all three research questions using both surveys and interviews with vendors. First, the researchers found that vendors think the Paleng-QR PH Plus system is easy to use and safe, and they want to tell others about it. However, they still prefer using cash for most of their daily transactions. Second, the study discovered four main problems that vendors face: the app needs to be updated too often, the public Wi-Fi is too slow, vendors need to buy phone credits to use the system, and older vendors don't know how to use smartphones well. Third, the researchers found that habit is the biggest problem where vendors are not using the digital payment system as their main way to receive money from customers. These results show that while vendors like the system, outside factors like poor internet and lack of training stop them from using it regularly.

Based on these findings, the study shows that vendors need more support to use digital payments successfully. The main barriers are not about the system itself, but about the environment around it - like internet connection, training, and costs. Therefore, while the Paleng-QR PH Plus program is a good start for bringing digital payments to traditional markets, it needs continued support and improvements from different groups working together to help vendors fully change from cash to digital payments.

Recommendations

1. The BSP may provide immediate digital literacy training and ongoing education for vendors, establish a Filipino-speaking technical help desk, coordinate with GCash for system updates and develop advanced features based on feedback, and offer temporary data subsidies while fostering continuous research partnerships with universities, all while continuing to promote key initiatives like QR Ph, InstaPay, and PESONet for a more inclusive and efficient digital payment ecosystem.
2. LGUs could immediately improve public Wi-Fi, update local laws to support digital payments, partner with phone companies for affordable internet plans, establish permanent digital commerce support offices, utilize vendor champions for peer teaching, conduct annual evaluation programs, survey vendors to identify needs, and include digital payment infrastructure in future market improvement plans, actively participating in national programs like the DILG-BSP's Paleng-QR PH to accelerate digitalization at the grassroots level and streamline government transactions.
3. Vendors should short-term maintain both cash and digital payment options while learning the new system with family help, attend training, and practice during slow hours; long-term, they should gradually increase digital transactions, share experiences with peers, offer feedback, and mentor new vendors.
4. Educational institutions in short term can integrate digital payment lessons into classes, create student volunteer training programs for vendors, organize community awareness campaigns, and provide basic smartphone training; long-term, they should conduct research on digital payment impacts, establish permanent digital literacy outreach, develop specialized courses in digital commerce and fintech, and create innovation labs.
5. Customers could short-term learn about available digital payment options, use them to encourage adoption, be patient with vendors, and try small digital purchases to build trust; long-term, they should spread awareness about digital payment benefits, participate in community education, provide feedback, and support related policies.
6. Researchers may study customer attitudes and technical barriers in traditional markets, compare adoption strategies across cities, and examine the role of age and education. They may also track vendor habit changes, research economic impacts, develop new theoretical models for adoption in developing countries, and create evaluation tools for digital payment programs.

References:

Aboubaker, E. & Mohamed, E., (2022). The Move Towards Cashless Society: How to Improve Consumers' Use of Bank Cards in Retail Stores? *Studies in Business and Economics, 17*(1), 24-40. Doi:10.2478/sbe-2022-0002

Almanthari, A., Maulina, S., & Bruce, S. (2020). Secondary School Mathematics Teachers' Views on E-learning Implementation Barriers during the COVID-19 Pandemic: The Case of Indonesia*. EURASIA J Math Sci Tech Ed, 16*(7). https://doi.org/10.29333/ejmste/8240

Ameen, N., Shah, M.H., Sims, J., Choudrie, J., & Willis, R. (2020). "Are there peas in a pod when considering mobile phone and mobile applications use: A quantitative study." J*ournal of Retailing and Consumer Services, 55.* 10.1016/j.jretconser.2020.102067.

Arango, C., Huynh, K., & Sabetti, L. (2018). Consumer payment choice: Merchant card acceptance versus pricing incentives, *55* https://doi:10.1016/j.jbankfin.2015.02.005

Ariffin, N., Ahmad, F. & Haneef, Umar. (2020). Acceptance of mobile payments by retailers using UTAUT model. *Indonesian Journal of Electrical Engineering and Computer Science. 19.* 149. 10.11591/ijeecs.v19.i1.pp149- 155.

Bangko Sentral ng Pilipinas. (2023). *The Paleng- QR PH Program.* bit.ly/PalengQRPh

Bell, R., Warren, V., & Schmidt, R. (2022). The Application of Concurrent or Sequential Mixed-Methods Research Designs and Their Methodological Implications: Investigating Tacit Knowledge, Its Use, and Application in Automotive Development. 10.4135/9781529604474

Bhardwaj P. (2019). Types of sampling in research *Journal of the Practice of Cardiovascular Sciences,5*(3),15. DOI:10.4103/jpcs.jpcs_62_19

Cabrera, B. (2023). BSP launches Paleng-QR Ph Plus program to boost digital payments in Ozamiz. https://shorturl.at/besHW

Caulfield, J. (2019). How to do thematic analysis. Scribbr. https://www.scribbr.com/methodology/thematic-analysis

Chávez H., Cladellas P., & Castelló T. (2020). Habit and social influence as determinants of PowerPoint use in higher education: a study from a technology acceptance approach. Interact. Learn. Environ. Doi: 10.1080/10494820.2020.1799021.

Continuous usage. (2024). https://sulkurl.com/pGh

Dotong, E. (2019). "Cashing In on Cashless Commerce: Analyzing the Cashless Transaction in the Philippine Supermarket Through Consumer Satisfaction." *International Journal of Business Research and Development, 1(1),19-31. https://shorturl.at/jDGUV.*

Ease of use. (2024). https://open.ncl.ac.uk/theories/1/technology-acceptance model/#:~:text= Perceived%20ease%20of%20use%20was,effort%20(Davis%2C%201989).

Eren, B. A. (2022). QR code m-payment from a customer experience perspective*. Journal of Financial Services Marketing. https://doi.org/10.1057//s41264-022-00186-5*

Faiz, A.H., Pirzada, N., Ali, I., Lati, A., & Ali, S. (2020). Wi-Fi Network Analysis of University Campus. *International Journal of Computer Science and Network Security, 20(10).* DOI: 10.22937/IJCSNS.2020.20.10.6

Farzin, M., Sadeghi, M., Yahyayi Kharkeshi, F., Ruholahpur, H., & Fattahi, M. (2021). Extending UTAUT2 in M-banking adoption and actual use behavior: Does WOMcommunication matter*? Asian Journal of Economics and Banking,5*(2), 136–15. doi.org/10.1108/ajeb-10-2020-0085

Gordon, J. (2022). Weighted average – explained*. The Business Professor, LLC.* https://thebusinessprofessor.com/en_US/research-analysis-decision-science/weighted-average-definition

Habit. (2023). https://surl.li/jpeilk

Hennink, M., Kaiser, B., & Marconi V. (2018). Code Saturation Versus Meaning Saturation: How Many Interviews Are Enough? *Qualitative Health Research.* Doi:10.1177/1049732316665344

Jahangir, W., & Zia-Ul-Haq, N. (2023). Integrating technology acceptance model, Theory of diffusion of innovations and Theory of planned behaviour to study the adoption of Facebook Marketplace. NMIMS Management Review, 31(3), 214–222. https://doi.org/10.1177/09711023231205500

Jumaan, I., Hashim, N., & Al-Ghazali, B. (2020). The role of cognitive absorption in predicting mobile internet users' continuance intention: An extension of the expectation-confirmation model. Technology in Society, 63(2), 101355.10.1016/j.techsoc.2020.101355

Jushermi, J., Turnip, N. Y. D., & Musfar, N. T. F. (2024). Acceptance Model for Utilizing E-Marketplace Tokopedia with Technology Acceptance Model Among Pekanbaru City

Communities. West Science Business and Management, 2(01), 107–121. https://doi.org/10.58812/wsbm.v2i01.562

Karim, M. W., Ahasanul, H., Mohammad, A. U., Hossain, M. A., & Anis, M. Z. (2020). Factors Influencing the Use of E-wallet as a Payment Method among Malaysian Young Adults. *Journal of International Business and Management.* Doi: 10.37227/jibm-2020-2-21/

Karjaluoto, H., Shaikh, A., Leppäniemi, M., & Luomala, R. (2019). Examining consumers' usage intention of contactless payment systems. *Int. J. Bank Mark. 38*:332–351. Doi: 10.1108/IJBM-04-2019-0155.

Kurniawan, A., Yusuf, M., Manueke, B., Imanuddin, N., & Nurriqli, A. (2022). In Tokopedia Applications, The Effect Of Electronic Word Of Mouth And Digital Payment On Buying Intention. *Jurnal Darma Agung. 30.272.10.46930/ojsuda.v30i3.2256*

Lee, D. (2019). The impact of exhibition service quality on general attendees' satisfaction through distinct mediating roles of perceived value. *Asia Pacific Journal of Marketing and Logistics, 32(3), 793-816.* https://doi.org/10.1108/APJML-09-2018-0373.

Ligon, E., Malick, B., Sheth, K., & Trachtman, C. (2019). What explains low adoption of digital payment technologies? Evidence from small-scale merchants in Jaipur, India. *PLOS ONE 14*(7). https://doi.org/10.1371/journal.pone.0219450

Loh, X.M., Lee, V.H., Tan, G.W.H., Ooi, K.B., & Dwivedi, Y. K. (2021). Switching from cash to mobile payment: What's the hold-up? *Internet Research, 31*(1), 376–399. Doi:10.1108/INTR-04-2020-0175.

Mai, E. & Ketron,. S., (2022). How retailer ownership of vs. collaboration with sharing economy apps affects anticipated service quality and value co-creation. *Journal of Business Research, 140*, 684-692. Doi: 10.1016/j.jbusres.2021.11.039.

Managuelod, M.C., Salacup, D.L., Petrachi J., Salvador, M.J., & Medilyn M Ines, M. (2023). Assessment Of Electronic Payment Platforms Adoption And Perceived Benefits Of Local Coffee Shops In Poblacion Cauayan City, Isabela. https://www.researchgate.net/publication/371575062

Manan, N., Sanjaya, D., Maipita, I., Atmojo, W., & Siregar, M. (2023). QR code technology for small-medium enterprises (SMEs) in Malaysia. AIP Conf. Proc.10.1063/5.0133310.

Marey, R. E., & Purwanto, D. E. (2020). Model Konseptual Minat Penggunaan E-wallet: Technology Acceptance Model (TAM). Technology Adoption: A Conceptual Framework, 31–50. https://shorturl.at/yzBW2

Martinez, B., & Mcandrews, L. (2022). Do you take…? The effect of mobile payment solutions on use intention: an application of UTAUT2. *Journal of Marketing Analytics, 11*(3), 10.1057/s41270-022-00175-6.

Mou, J., Cohen, J., Dou, Y., & Zhang, B. (2020), International buyers' repurchase intentions in a Chinese cross-border e-commerce platform: A valence framework perspective. *Internet Research, 30*(2), 403-437. https://doi.org/10.1108/

Nizam, F., Hwang, H., & Valaei, N. (2019). Measuring the Effectiveness of E-Wallet in Malaysia. Studies in Computational Intelligence, 786. DOI: 10.1007/978-3-319-96803-2_5

Oktaria, R., Naibaho, S. A., Muda, I., & Kesuma, S. A. (2024). Factors of acceptance of e-commerce technology among society: integration of technology acceptance model. *Brazilian Journal of Development*, *10*(1), 118–130. https://doi.org/10.34117/bjdv10n1-008

Oughton, E., Lehr, W., Katsaros, K., Selinis, I., Bubley, D., & Kusuma, J. (2021). Revisiting Wireless Internet Connectivity: 5G vs Wi-Fi 6. Telecommunications Policy. *45*. DOI: 10.1016/j.telpol.2021.102127.

Penney, E. K., Agyei, J., Boadi, E. K., Abrokwah, E., & Ofori-Boafo, R. (2021). Understanding Factors That Influence Consumer Intention to Use Mobile Money Services: An Application of UTAUT2 With Perceived Risk and Trust. *Sage Open,11 (3).*

https://doi.org/10.1177/21582440211023188

Rahman, T., Noh, M., Kim, Y. S., & Lee, C. K. (2022). Effect of word of mouth on m- payment service adoption: a developing country case study. *Information Development, 38*(2), 268-285. https://doi.org/10.1177/0266666921999702

Reynon, M., Bulatao, P., Vergel, J., Yabut, L., & Grimaldo, J. (2022). Consumer's Attitude on Online Payment Systems as Driven by Risks. *Journal of Business and Management Studies. 4.* 13-26. 10.32996/jbms.2022.4.2.2.

Ryu, S., & Park, J. (2020). The effects of benefit-driven commitment on usage of social media for shopping and positive word-of-mouth. *Journal of Retailing and Consumer Services, 55*. Doi: 10.1016/j.jretconser.2020.102094.

Sanchez, J., & Tanpoco., M. (2023). Continuance Intention of Mobile Wallet Usage in the Philippines: A Mediation Analysis. *Review of Integrative Business and Economics Research, 12*(3). http://surl.li/umdds

Santosa, A., Taufik, N., Prabowo, F., & Rahmawati, M. (2021). Continuance intention of baby boomer and X generation as new users of digital payment during COVID-19 pandemic using UTAUT2. *J Financ Serv Mark 26,* 259–273. https://doi.org/10.1057/s41264-021-00104-1

Service security (2023). https://www.lawinsider.com/dictionary/service-security#:~:text=Service%20security%20means%20protecting%20the,unauthorized%20use%20of%20premium%20services

Square. (2024). What is vendors? https://rb.gy/x175lb

To, A. T., & Trinh, M. H. (2021). Understanding behavioral intention to use mobile wallets in vietnam: Extending the tam model with trust and enjoyment. *Cogent Business andManagement 8*(1), 1–14. Doi: 10.1080/23311975.2021.1891661

Usefulness. (2024). https://surl.li/bxshtz

Wei, L. Z., & Peng Tsu, D. K. (2018). Transforing mobile phones into e-wallets in Malaysia. *Q. Bull,* 35–43. https://shorturl.at/adyzF.

Widjaja, H.A., Meyliana, Fernando, E., Santoso, S.W., Surjandy, & Condrobimo, A.R. (2022). The Measurement Model User Experience and Technology Acceptance for Implementation Virtual Booth in Marketplace. *2022 IEEE 8th Information Technology International Seminar (ITIS)*, 108-112.

Winarno, W. A., Imam, M., & Palupi, T. W. (2021). Perceived Enjoyment, Application Self-efficacy, and Subjective Norms as Determinants of Behavior Intention in Using OVO Applications. *Journal of Asian Finance, Economics and Business, 8*(2), 1189–1200. Doi: 10.13106/jafeb

Word-of-mouth. (2023). https://www.investopedia.com/terms/w/word-of-mouth- marketing.asp#:~:text=Word%2Dof%2Dmouth%20(WOM,%2Dof%2Dmouth%2 0marketing%20efforts

Yang, M., Mamun, A., Mohiuddin, M., Nawi, N. C., & Zainol, N. R. (2021). Cashless Transactions: A Study on Intention and Adoption of eWallets. *Sustainability, 13*(2), 831. Doi:10.3390/su13020831

Zhong, Y., & Moon, H. C., (2020). What Drives Customer Satisfaction, Loyalty, and Happiness in Fast-Food Restaurants in China? Perceived Price, Service Quality, Food Quality, Physical Environment Quality, and the Moderating Role of Gender. Foods, *9*(4), 460. https://doi.org/10.3390/foods9040460

Zhong, Y. & Moon, H. C. (2022). Investigating Customer Behavior of Using Contactless Payment in China: A Comparative Study of Facial Recognition Payment and Mobile QR-Code Payment. *Sustainability, 14*(12), 7150. https://doi.org/10.3390/su14127150