

# E-wallets as Forefront of Future Payment Platforms: Technology Adoption and Utilization of Businesses in Central Luzon, Philippines

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**Abstract**–This paper explores the issues and potential of e-wallet adoption and utilization of businesses in Central Luzon. Using descriptive statistics, specifically frequency count and percentages, and weighted mean. The study was anchored on the integrated technology adoption model framework, and factors impeding e-wallet adoption were described using the four dimensions of businesses. According to the study, the utilization and adoption of e-wallets among businesses are influenced by perceived usefulness and social insecurity. Regarding challenges, the network connection between payment counterparties and ICT infrastructure is the greatest challenge. At the same time, perceived trust and security are consumer intent's most influential aspects. In conclusion, as developing nations become developed nations, the effect on consumer awareness and transactions grows. Therefore, businesses must keep up with evolving trends and strategies to thrive in a constantly changing business environment.

**Index Terms**– e-wallet, technology adoption, businesses, payment platforms, strategic actions

## INTRODUCTION

Digital wallets are a facility to make contactless payments. Numerous mobile payment solutions, including e-wallets, have had considerable growth (Shetu et al., 2022). The prevalence of contactless transactions is increasing as technology and the digital world contribute to the evolution of money, and the existence of Covid-19 further fuels the change in the environment. Humaira & Muzakar Isa (2020) emphasized that business has made extensive usage of technological advancements in communication and information, such as online shopping, social networking, and e-commerce. The overarching goal of modern business is to act in real time and increase efficiencies to the extent that there is no cost to execute (Baker, n.d.).

Electronic wallets are one of the factors driving up business efficiency. In the study of Chelvarayan et al. (2022) e-wallet is defined as a program that lets customers download payment cards onto their mobile phones.

Using an e-wallet app in place of a conventional payment method is a recent trend among customers. This definition is coherent with the result of the study of Putri & Sumitra (2020) that the use of electronic methods of payment is rising in prominence and has entered the mainstream. For business owners, technology advancements lead to developments in the form of payment methods that serve as tool for businesses in marketing aspects.

There is a deliberate effort in the Philippines to leverage technological advances and promote innovative products and services through the continued adoption and utilization of electronic payments. According to Estioko et al. (2020), the Bangko Sentral ng Pilipinas (BSP) remains steadfast to sustaining a cash-lite economy by implementing enabling Statutory and legislative changes to support a dependable, secure, reliable, and effective national financial system that ensures responsible digital payments for all. Despite the rapid emergence of e-wallets and the support of government institutions, research on the impact of mobile wallets on business performance continues to yield inconsistent results. According to Tecnom, Since electronic or online payment methods have grown tremendously, mobile payments have fallen short of earlier expectations. According to Hover and Karimov (2016), the use of mobile wallets in the Small and Medium-Sized Enterprise (SME) sector has not been extensively investigated. In addition, tech-savvy customers are increasingly demanding that modest businesses adopt new technologies.

Consequently, this study sought to address these gaps by examining the obstacles and prospects of e-wallet adoption in Central Luzon enterprises. The study described the utilization of businesses' e-wallets using the integrated technology adoption model framework. In addition, it evaluated the challenges faced by businesses in employing e-wallets in terms of the four dimensions. Based on the study's findings, a proposed strategic framework was developed.

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METHODS

The study utilized a descriptive method that emphasizes on issues, occurrences, or situations as explained by Siedlecki et al. (2020). The design was appropriate because this undertaking covered the practices and challenges of e-wallet adoption and utilization among businesses in Central Luzon. The proponent gathered and evaluated data specifically quantitative data to describe the utilization of businesses' e-wallets using the integrated technology adoption model framework. Additionally, the data was utilized to assess the challenges encountered by businesses in adopting e-wallets in terms of the four-dimensional factors. The respondents are composed of 58 Central Luzon businesses selected using a purposive sampling technique. The researcher collected data using a survey questionnaire. Validity and reliability tests were performed to confirm the data's accuracy. Heale and Twycross (2015) define validity as the concept of precise measurements in quantitative research. In addition, reliability is relevant to the measure's consistency. In terms of the statistical data used, the researcher used descriptive statistics, specifically frequency count and percentages, and weighted mean to evaluate the challenges affecting e-wallet adoption.

RESULTS AND DISCUSSION

This part of the study covered the presentation of data relevant to the objective of the study.

TABLE 1. BUSINESS PROFILE

Business Profile	Frequency	Percentage
<b>Number of employees</b>		
Less than 10	35	60%
10 – 99	22	38%
100 – 199	1	2%
200 and above	0	0%
<b>Asset Size</b>		
Not more than P3,000,000	30	52%
P3,000,001 – P15,000,000	25	43%
P15,000,001 – P100,000,000	3	5%
More than P100,000,000	0	0%
<b>Industry Type</b>		
Agriculture, Forestry and Fishing		
Manufacturing	30	52%
Transportation and Storage	25	43%
Food and Beverages	3	5%
Accommodation and Leisure	0	0%
<b>Form of Business Organization and Ownership</b>		

Single Proprietorship	39	67%
Partnership	16	28%
Corporation	3	5%
<i>Others</i>		
<b>Frequency of e-wallet payments per week</b>		
0–3 times	12	21%
4–8 times	30	52%
More than eight times	16	28%
<b>Frequently used e-wallet payment method</b>		
Maya	20	34.48%
Gcash	52	89.66%
BanKo	24	41.38%
PayPal	17	29.31%
AliPay	7	12.07%
CLiQQ PAY	5	8.62%
<i>Others:</i>		
ShopeePay	28	48.28%
Lazada Wallet	22	37.93%
GrabPay	16	27.59%
<i>*Multiple response</i>		
<b>Transaction where e-wallets are used</b>		
Payments to suppliers	26	44.83%
Customer payments	45	77.59%
Payment for utilities	27	46.55%
Payment of salaries	37	63.79%
<i>*Multiple response</i>		

Table 1 shows the profile of the businesses. As shown on the table, 60% of the businesses have less than 10 employees with an asset size of not more than 3,000,000 or equivalent to 52% of the total responses. This finding implied that most of the enterprises belongs to the microenterprise sector. The utilization of digital payments in MSMEs is needed in the operation of businesses as emphasized in the research conducted by Sisi Majama in Botswana, Gabore (2017). Moreover, 52% belongs to the manufacturing sector and run by a single proprietor or 67%. This is relative to the result of the study of Rakuten Insight in October 2022 as cited by Statista (2023), Gcash is the most popular e-wallet or e-payment service in the Philippines with 98 percent of customers claiming to use it for their e-payment transactions. It was also revealed that majority of the respondents declared to used e-wallets 4-8 times per week and Gcash with 89.66% as the top e-wallet method. Most of the e-wallet transactions are used in customer payments or 77.59% in total. The World Bank Group (2022) declared that the The explosion of technology has boosted connectivity to and use of financial services globally, changing how consumers make and obtain payments, loan money, and save money..

- 1. Utilization of e-wallets
- a. Perceived Usefulness

**TABLE 2.  
PERCEIVED USEFULNESS**

	Perceived Usefulness	Weighted Mean	Verbal Interpretation	Verbal Description
1	Using e-wallets improve the daily business operation	3.63	Strongly Agree	The respondent viewed the statement as very useful.
2	Using e-wallets increases the business' productivity	3.43	Strongly Agree	The respondent viewed the statement as very useful.
3	Using e-wallets enhances the effective-ness the business	3.18	Agree	The respondent viewed the statement as useful.
4	Using e-wallets would help to manage the business' expense better	3.22	Agree	The respondent viewed the statement as useful.
<b>Overall Weighted Mean</b>		<b>3.37</b>	<b>Strongly Agree</b>	<b>Very Useful</b>

Table 2 demonstrates utilization of e-wallets concerning perceived usefulness. As observed in the table, item 1, "Using e-wallets improve the daily business operation" earned the highest weighted mean of 3.63, which can be read orally as very useful. Ventre & Kolbe (2020) defined perceived usefulness as when an innovation in technology enables someone attain their objectives. This is amenable to the result of the study of Mun et al. (2017) that displayed how perceived usefulness was a significant element influencing users' behavioral desire to utilize e-wallets.

- b. Perceived ease of use

**TABLE 3.  
PERCEIVED EASE OF USE**

	Perceived ease of use	Weighted Mean	Verbal Interpretation
1	The payment procedure for digital payments is transparent and straightforward.	3.24	Agree
2	The payment procedure using e-wallet requires little mental effort.	3.20	Agree
3	The e-wallet is convenient to use.	3.52	Strongly Agree
4	It is simple to complete all the processes required to use the digital payment system.	3.16	Agree
<b>Overall Weighted Mean</b>		<b>3.28</b>	<b>Strongly Agree</b>

As to perceived ease of use, item 3 equates to 3.52 total weighted mean which is verbally interpreted as very easy to use. Ease of use is the term used to explain how someone perceives a process or system to be completed quickly and without much difficulty and, thus, to be simple to operate. Perceived ease of use in digital wallets includes simple management, quick payment transaction processing, several accepting merchants and simple payment procedure. This is consistent with the article published by Enfuce (2022), which states that the convenience of payment is a crucial selling factor that benefits both consumers and merchants. Inconvenient payment processes are one of the leading contributors to consumer attrition. Thus, many merchants are adopting digital wallets to give consumers their preferred payment methods.

- c. Perceived compatibility

**TABLE 4.  
PERCEIVED COMPATIBILITY**

	Perceived compatibility	Weighted Mean	Verbal Interpretation
1	The use of e-wallets is consistent with the brand's image.	3.05	Agree
2	Using e-wallets fits the way the firm's plans to transact with stakeholders.	3.12	Agree
3	The company values the use of e-wallets over traditional payment methods.	3.39	Strongly Agree
<b>Overall Weighted Mean</b>		<b>3.19</b>	<b>Agree</b>

The table shows that the item statement "The business appreciates using e-wallets instead of traditional modes of payment" garnered a total weighted mean of 3.39 and was verbally interpreted as very compatible. Belanche et al. (2020) defined compatibility as the degree to which digital wallets complement a consumer's lifestyle. The more willingness there is to use e-wallet, the more favorable the businesses' environment is toward the new technology. Relatively, w-wallet does not compete with or replace the utility of a brand's mobile application. Instead, it adds tremendous value to mobile apps by enhancing the customer experience and providing the business with a readily accessible, persistent communication channel (Mobile Wallet Marketing: A Powerful Strategy for Brands | Vibes, n.d.).

d. *Perceived personal innovativeness*

**TABLE 5.**  
**PERCEIVED PERSONAL INNOVATIVENESS**

	Perceived personal innovativeness	Weighted Mean	Verbal Interpretation
1	The business firm seeks ways to try things with new information technology.	3.76	Strongly Agree
2	Among competitors, the business is typically the first to engage with new information technologies.	2.48	Disagree
3	In general, businesses are open to experimenting with new digital payment applications on the market.	3.26	Strongly Agree
<b>Overall Weighted Mean</b>		<b>3.17</b>	<b>Agree</b>

The table reveals that, item statement “The business look for ways to experiment with new information technologies” earned the top weighted mean of 3.76 which is considered to be extremely innovative. The argument is amended by Alam et al.'s (2021) study, which indicates that information technology (IT) is advancing rapidly. This covers the dissemination and optimal utilization of data, a focus on excellence, responsiveness, and the incorporation of strategic thinking, economic integration, collaboration, sourcing, and social and environmental accountability, and a flexible client connection.

e. *Perceived social influence*

**TABLE 6.**  
**PERCEIVED SOCIAL INFLUENCE**

	Perceived social influence	Weighted Mean	Verbal Interpretation
1	External customers believe that the company should adopt e-wallets.	3.28	Strongly Agree
2	Internal customers believe that the company should employ e-wallets.	3.30	Strongly Agree
3	Customer preferences indicate that businesses should use e-wallets.	3.33	Strongly Agree
<b>Overall Weighted Mean</b>		<b>3.30</b>	<b>Strongly Agree</b>

Table 5 displays the perceived social influence of businesses. Item statement “The customer preferences show business should use e-wallets” tops the result with a weighted mean of 3.33 or verbally interpreted as extremely influential. Lockdowns and remote work have permanently changed the way people consume and pay. In line with this, Hadorn & Houseman (2018) claimed that the customer experience is at the center of the evolution of payment as businesses seek to streamline purchasing goods and services.

Changes in the payments industry, such as real-time payments and security-enhancing data, are primarily driven by tech-savvy consumers and forward-thinking businesses that demand a fully digital experience for daily transactions.

f. *Perceived insecurity*

**TABLE 7.**  
**PERCEIVED INSECURITY**

	Perceived insecurity	Weighted Mean	Verbal Interpretation
1	The company is hesitant of employing any digital payment option.	3.69	Strongly Agree
2	Businesses are apprehensive about adopting digital payment methods.	3.44	Strongly Agree
3	The business expressed concern about online privacy.	3.39	Strongly Agree
<b>Overall Weighted Mean</b>		<b>3.51</b>	<b>Strongly Agree</b>

The research's findings demonstrate “The business is cautious in using any digital payment mechanism” with a weighted mean of 3.69 garnered as the highest item with a verbal interpretation of extreme insecurity. There have always been impediments to the widespread uptake of e-wallets, such as the perception of insecurity due to privacy concerns. Consumer intent to use e-payment services is significantly affected by the provider of the digital wallet service. Due to user experience with the payment procedure, security is now the most important consideration (Shafi & Misman, 2019). This is emphasized in the study of Chaveesuk et al. (2018) that customers are very aware of providing their personal data to the providers of digital wallet services, current users are particularly concerned about the issue of confidence with businesses engaging in the digital wallet payment transactions.

2. *Challenges in the adoption of e-wallet in terms of the four-dimensional factors:*

a. *Business factors*

**TABLE 8.**  
**BUSINESS FACTORS**

Business Factors	Frequency	Percentage
Cost of adoption	27	46.55%
Education level of employees	5	8.62%
Type of business	12	20.69%
Business readiness	48	82.76%
<i>*Multiple response</i>		

As can be seen from the table, 82.76% of the total responses declared that the business readiness is the major challenges encountered in terms of business factors.

Essentially, all the business factor category figures were fully acknowledged and confirmed that they do, in fact, make it difficult for SMEs to implement an electronic payment system. This is supported by the result of the study of Santosa et.al (2022) that the readiness of an entrepreneur to carry out digital transformation has not been at the optimal stage. Moreover the cost of adoption with 46.55% appeared to be hindered by businesses' resistance to innovation due to consumers' high expectations regarding the cost of adopting a new technology..

*b. Technological factors*

**TABLE 9.  
TECHNOLOGICAL FACTORS**

Technological Factors	Frequency	Percentage
Internet connectivity and speed	29	50.00%
Payment partners' network connection	39	67.24%
Reliable software applications	26	44.83%
Technological level of payment facilities	22	37.93%
Compatibility of payment facilities available	17	29.31%
<i>*Multiple response</i>		

Table 8 shows that the network connection among payment partners is the major factor impeding businesses in e-wallet adoption with a total of 67.24% of the total responses. Because excellent network coverage is restricted to a certain urban regions, more MSMEs are finding it difficult to use mobile payment. All mobile payment partners are hampered in their ability to establish a connection to a quality payment service. Another response from the users refers to the availability of internet connectivity with a score of 50%, indicating a poor network and slow and unavailable internet. This result is supported by Salac& Kim (2016) as the inefficiency in internet connectivity hampers the motivation of users to introduce innovative methods that will help to promote beneficial developments and the establishment of an advance environment.

*c. Environment factors*

**TABLE 10.  
ENVIRONMENTAL FACTORS**

Environmental Factors	Frequency	Percentage
Regulatory policies and government support	13	22.41%
Cooperation between telecoms and banking sectors	17	29.31%
Competitors' and stakeholders' pressure	24	41.38%
Level of ICT infrastructure	27	46.55%
Perceived general awareness and compatibility	22	37.93%
Language options provided	7	12.07%
<i>*Multiple response</i>		

As to the environmental factor challenges, ICT infrastructure ranks first with 46.55 percent, followed by pressure from competitors and stakeholders with 41.38 percent. External factors, such as the challenges posed by other technologies and business limitations, impede the adoption of mobile payments. Sometimes these factors are beyond the control of SMEs, necessitating government or industry intervention to facilitate implementations. Information and communications technology (ICT), including the internet, disrupts the public's way of doing business (Albert et al. 2018; Dadios et al. 2018).

*d. Consumers' intentions*

**TABLE 11.  
CONSUMERS' INTENTIONS**

Consumer Intentions	Frequency	Percentage
Familiarity and complexity to users	38	65.52%
Perceived trust and security	49	84.48%
Consumers readiness	22	37.93%
Perceived ease and usefulness	27	46.55%
Relative advantage	23	39.66%
<i>*Multiple response</i>		

Table 10 illustrates the consumer factors that prevent businesses from employing mobile payment systems. According to 84.48 percent of respondents, "perceived trust and security" is the most critical factor. The incidence of online money fraud in the community makes it difficult for businesses to trust the mobile payment system. Mobile payment enables merchants to monitor consumer movements via mobile phones. Hence, consumers are concerned that using electronic payment will not keep them away from online advertising. Chen (2018) found that when security concerns are high, consumers tend to believe that mobile payment costs are also high. The prevalence of security risks impedes mobile payment.

#### CONCLUSION AND RECOMMENDATIONS

The increasing popularity of e-wallet services among consumers has subsequently influenced the strategic decisions of businesses. According to the study, most businesses pertain to the microenterprise sector. The majority of respondents reported using e-wallets four to eight times per week, with Gcash accounting for 89.66% of e-wallet usage. 77.59% of all e-wallet transactions are used for customer payments. According to the study's findings, utilization and adoption of e-wallets among businesses are influenced by perceived usefulness, with an overall weighted mean of 3.37, and perceived social insecurity, with an overall weighted mean of 3.51, or verbally interpreted as extreme insecurity.

In addition, the study revealed that several factors inhibit the adoption of e-wallets. In terms of business factors, business readiness represents the greatest obstacle. Regarding technological and environmental factors, the network connection between payment counterparties and ICT infrastructure is the greatest challenge. "Perceived trust and security" is the most influential aspect of consumer intent.

The following recommendations are made for MSMEs, the authorities and other collaborators in mobile payments. The agency involved should rapidly identify dependable means of providing high-quality Internet access and adequate network coverage in cooperation with independent network service providers. The national government should utilize an electronic payment system that is made viable by ICT infrastructure. The increased use of e-payments by consumers and the easiness of obtaining information through technology have altered how MSMEs market their products to consumers. In conclusion, as developing nations become developed nations, the effect on consumer awareness and transactions grows. Therefore, businesses must keep up with evolving trends and strategies to thrive in a constantly changing business environment.

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