Exploring the Influence of Multiple E-Payment Systems on Consumer Purchase Behavior and Impulse Buying: A Demographic Analysis

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This research investigates the impact of diverse e-payment systems on consumer purchase behavior and impulse buying tendencies, with a particular focus on how these dynamics vary across different age groups. A sample of 200 respondents participated in the study, selected through convenience sampling methods. Utilizing SPSS, the collected data underwent comprehensive analysis employing diverse statistical tests.

The findings reveal a positive correlation between the availability of multiple e-payment systems and consumer purchase behavior. Interestingly, no significant variance was observed among respondents' mean ages, indicating a consistent influence across demographic segments. Moreover, the research underscores the propensity for multiple e-payment systems to stimulate impulsive buying tendencies, with notable distinctions in mean respondent ages.

This study contributes to the understanding of the evolving landscape of e-commerce and its influence on consumer decision-making processes. Specifically, it offers valuable insights into the nuanced effects of e-payment systems on consumer behavior, shedding light on how these dynamics manifest across various demographic segments. Furthermore, the research provides practical implications for businesses and policymakers seeking to optimize e-commerce strategies and enhance consumer engagement.

Keywords: E-payment systems, Impulse buying, Customer purchase behavior, Customer trust and security, E-wallet

1. Introduction

As technology continues to advance at an unprecedented pace, humanity finds itself increasingly reliant on an array of tools and gadgets. Predictions from past research suggest a trajectory where technological reliance burgeons to the extent that human labor becomes minimally necessary [1]. Amidst this evolution, various forms of technological advancement emerge, each harboring profound implications for society. This study, however, directs its focus towards the burgeoning influence of contemporary financial technology, specifically examining the social implications of diverse digital payment options.

In the wake of the COVID-19 pandemic, which has catalyzed a seismic shift towards online transactions, understanding the impact of digital payment options on

consumer behavior assumes paramount importance [2]. This study endeavors to unravel the intricate interplay between the availability of digital payment channels, such as mobile payments, and consumers' purchasing decisions, including their propensity for impulse buying.

The overarching objective of this research paper is twofold: firstly, to discern and quantify the influences exerted by a spectrum of digital payment options on consumer behavior; and secondly, to scrutinize the extent to which the ease and convenience facilitated by various digital payment methods may precipitate impulse buying behavior. This hypothesis finds validation in a wealth of literature spanning diverse geographical contexts.

Given the escalating reliance on cutting-edge e-payment technologies in the United Arab Emirates (UAE), this study will exclusively delve into the ramifications of digital payment options on consumer behavior within this geographic milieu. By homing in on this specific demographic, the research aims to furnish nuanced insights into the evolving landscape of consumer behavior in an era dominated by digital transactions.

2. Problem Statement:

Understanding consumer purchasing behavior in the context of utilizing multiple digital payment methods during online shopping remains an area ripe for exploration. By conducting research and gathering data from diverse consumers in the UAE, this study aims to delve deeper into this phenomenon. Specifically, it seeks to ascertain whether the convenience afforded by numerous "e-payments" contributes to impulse-like buying behavior among consumers. Additionally, the research endeavors to elucidate the correlation between the availability of various digital payment methods and impulse buying within the UAE market. While existing literature has touched upon the correlation between digital payment methods and customer purchase decisions, this research aims to provide a nuanced understanding within the UAE context.

Furthermore, this study will explore contemporary digital payment systems such as Apple Pay, Google Pay, PayPal, and other emerging options, assessing their impact on consumer purchasing decisions. It will also examine the interplay between consumer trust, security, convenience, and the proliferation of digital payment options across E-commerce platforms. Despite the growing utilization of e-payment methods like Apple Pay and PayPal, there remains a dearth of research specifically addressing their effects on consumer behavior, especially within the UAE market. This research seeks to bridge this gap by focusing on the unique shopping habits and e-payment preferences of UAE consumers.

3. Research Objectives:

The primary objective of this study is to establish the link between the availability of various e-payment systems and consumer buying behavior. Specifically, the research aims to elucidate how digital payment options such as Apple Pay, PayPal, and others influence consumer purchasing behavior within the UAE context. Additionally, the study will assess the level of security and trust among consumers associated with different e-payment systems. Lastly, it will investigate the phenomenon of impulse buying behavior triggered by the presence of multiple digital payment methods, examining consumer purchase behavior resulting from the availability of diverse e-payment options. Through these objectives, the study seeks to contribute valuable insights into understanding consumer buying behavior in the UAE, thereby enhancing knowledge and expertise in this domain.

4. Research Questions:

1. What is the impact of having multiple digital payment methods on consumer purchase behavior in the UAE?
2. Can having various e-payment systems trigger impulse buying behavior in consumers?
3. Is there a variance between different age groups in terms of the impact of multiple e-payment systems on impulse buying behavior in consumers.

5. Hypotheses:

5-1 Null Hypotheses (H0):

1. Having multiple digital payment systems does not positively affect customer purchase behavior.
2. There is no variation in the impact of multiple digital payment systems across different age groups.
3. Multiple digital payment systems do not induce impulse buying behavior.
4. There is no variation in impulse buying behavior across different age groups.

5-2 Alternative Hypotheses (H1):

1. Having multiple digital payment systems positively affects customer purchase behavior.
2. There is a variation in the impact of multiple digital payment systems across different age groups.
3. Multiple digital payment systems can induce impulse buying behavior.
4. There is a variation in impulse buying behavior across different age groups

5-3 Hypotheses Discussion:

H01: There is no significant positive impact from having multiple digital payment systems on customer purchase behavior. This hypothesis is based on the literature indicating that while digital payment systems offer convenience and efficiency, their impact on actual purchase behavior may not always be positive. Studies by Matar and Wang [3] [4], suggest that while digital payment methods may facilitate transactions, their influence on overall purchase behavior is contingent upon various factors such as consumer preferences, trust, and security concerns.

H02: There is no significant difference between the mean respondents of all age groups regarding the impact of multiple digital payment systems. This hypothesis is derived from research suggesting that age may not be a determining factor in how individuals perceive and adopt digital payment systems. While younger generations may be more tech-savvy and accustomed to using digital platforms, studies like Qian [5] indicated that older demographics are also increasingly embracing digital payment methods. Therefore, age may not significantly moderate the relationship between digital payment systems and purchase behavior.

H03: Multiple digital payment systems do not significantly trigger impulse buying behavior. This hypothesis is based on the literature suggesting that while digital payment systems provide convenience and ease of transactions, they may not necessarily lead to impulsive purchasing behavior. Impulse buying is influenced by various psychological factors, as discussed in studies by Zhang and Hofeman [6] [7]. Therefore, the mere availability of multiple digital payment options may not directly correlate with increased impulsivity in purchasing decisions.

H04: There is no significant difference between the mean respondents of all age groups regarding impulse buying behavior. This hypothesis posits that age may not be a significant determinant of impulse buying behavior in the context of digital payment systems. While younger demographics may Figure higher levels of impulsivity in general, factors such as income levels, psychological traits, and situational contexts may play a more substantial role in determining impulse buying behavior, as suggested by Kervyn and Raghubir [8] [9]

H11: There is a significant positive impact from having multiple digital payment systems on customer purchase behavior. This hypothesis suggests that the availability of multiple digital payment options positively influences customer purchase behavior. Drawing from studies highlighting the convenience and efficiency of digital payment systems [3] [5] it is hypothesized that the presence of diverse digital payment methods enhances the overall shopping experience, leading to increased purchase activity.

H12: There is a significant difference between the mean respondents of all age groups regarding the impact of multiple digital payment systems. This hypothesis proposes that age moderates the relationship between digital payment systems and purchase behavior. Considering the varying levels of tech fluency and preferences across different age groups [6] it is hypothesized that younger demographics may Figure a more pronounced impact of digital payment systems on purchase behavior compared to older age groups.

H13: Multiple digital payment systems significantly trigger impulse buying behavior. This hypothesis suggests that the availability of multiple digital payment options leads to increased impulsiveness in purchasing decisions. Building upon research indicating the association between digital payment convenience and impulsive buying behavior [7] [10] is hypothesized that the ease and accessibility of digital payment systems contribute to impulsive purchase tendencies among consumers.

H14: There is a significant difference between the mean respondents of all age groups regarding impulse buying behavior. This hypothesis posits that age moderates the relationship between digital payment systems and impulse buying behavior. While younger demographics may Figure higher levels of impulsivity in general, it is hypothesized that the impact of digital payment systems on impulse buying behavior may vary across different age groups, considering factors such as income levels, psychological traits, and situational contexts [8] [9]

6. Significance of Research:

Understanding the significance and value of a research paper is crucial within the academic sphere, as it must contribute meaningfully to society. This study holds substantial importance as it provides valuable insights into the purchasing behavior of current consumers in the UAE. With continuous advancements in technology, particularly in the realms of business and finance, ongoing research is essential to stay abreast of evolving consumer trends.

This proposed study is particularly imperative as it examines how UAE residents utilize e-payment systems and other contemporary financial technologies in their purchasing decisions. Moreover, given the limited research conducted in this area within the UAE, this study opens new avenues for understanding consumer behavior and trends. Consequently, both in practical application and geographic scope, this research study holds considerable significance within the academic community.

7. Literature Review

The digital landscape is rapidly transforming consumer behavior, particularly regarding online shopping. This review explores the impact of e-payment systems on purchasing decisions and identifies factors influencing their adoption.

7-2. The Rise of E-Payments and Their Impact:

Several studies highlight the surge in e-payment systems and their influence on consumer behavior. [3]) examined the digitalization of the MENA region, where the COVID-19 pandemic accelerated the shift towards online shopping and e-payments. [11] investigated the role of e-payment systems in cashless economies, emphasizing how online banking and ease of transactions influence purchasing decisions. [12] delved into the fashion industry, exploring how AI-powered technologies on Instagram, alongside marketing strategies and technology acceptance, influenced purchase decisions.

7-3. Factors Influencing E-Wallet Adoption:

While e-wallet adoption has been steadily growing, the COVID-19 pandemic significantly accelerated the shift towards cashless transactions. Rahi [13) conducted a study to understand the factors influencing this surge in e-wallet use during a global crisis. Their research offers valuable insights into user behavior and motivation.

The study integrates three key theories to create a comprehensive framework:

1. Task-Technology Fit (TTF) Model: This model posits that users are more likely to adopt a technology when they perceive it as a good fit for accomplishing their tasks. In the context of e-wallets, this translates to users believing e-wallets are a convenient and efficient way to make contactless payments during the pandemic.
2. Diffusion of Innovation (DOI) Theory: This theory explores how new ideas and technologies spread within a population. [13] likely consider factors like relative advantages (perceived benefits of e-wallets compared to cash), compatibility (alignment with existing user habits), complexity (ease of learning and using e-wallets), and observability (visibility of others using e-wallets) in influencing adoption.
3. Protection Motivation Theory (PMT): This theory focuses on how individuals are motivated to protect themselves from threats. During a pandemic, the threat of contracting the virus can act as a strong motivator to adopt contactless payment methods like e-wallets.

Rahi [13] propose that the perceived risk of the pandemic moderates the relationship between the proposed factors and e-wallet adoption. This suggests that when the perceived risk of infection is high, users are even more likely to be swayed by factors like task-technology fit and protection motivation, leading to increased e-wallet adoption.

This research by Rahi highlights the multifaceted nature of e-wallet adoption during a crisis. It goes beyond just convenience and delves into the interplay between user needs, technology fit, perceived benefits, and the desire for protection.

7-4. Continued Usage Intention of Mobile Payment Technology:

Setiawan [14] focused on Indonesia, highlighting the factors influencing continued usage intention of mobile payment technology. Their study reveals that perceived ease of use, perceived usefulness, and financial capacity significantly impact users' intentions.

7-5. The Allure of Impulse Buying:

While e-payments offer convenience and efficiency [15] [10] they can also lead to impulsive purchases [16] [17] examined the impact of marketing

strategies on impulsive buying during online shopping festivals. The study analyzed how crafted environments, live streaming, and adaptable payment policies create an enticing atmosphere, drawing consumers into impulsive spending.

7-6. Consumer Demographics and Impulse Buying:

Consumer behavior regarding impulse buying in the digital age with e-payment systems is multifaceted and influenced by various demographic factors. Here's a deeper dive into existing research and its implications:

7.6.1. Generational Gap:

Qian [5] highlighted a generational divide. Younger generations, being digital natives comfortable with technology, are more likely to embrace e-payment systems. This ease of use can translate into a higher tendency for impulse purchases facilitated by these systems.

7.6.2. Income Disparities:

Zhang [6] explored how income disparities influence spending habits. Individuals with higher incomes might be less restricted by immediate fund limitations when using credit cards or e-wallets. This perceived ease of access to credit could potentially lead to a higher frequency of impulse buying.

7.6.3. Gender Complexities:

Riska[18] documented historical gender differences in impulse buying behavior, with females Figure in a higher tendency for impulsive purchases compared to males in certain categories. However, recent research by Dutta [19] suggests these gender differences might be narrowing. Further studies are needed to understand the evolving dynamics of gender and impulse buying in the digital age.

7.6.4. Beyond Age, Income, and Gender:

While these core demographics play a role, impulse buying behavior is influenced by a wider range of factors:

- Personality Traits: Studies by Kervyn [8] suggest that personality traits like sensation seeking and susceptibility to peer pressure can increase the likelihood of impulse buying.
- Emotional States: Research by Baumeister & Heatherton [20] highlights the influence of emotions like boredom or excitement on impulsive purchasing decisions.
- Marketing Strategies: Raghubir [9] and Liu [21] point out that the online shopping environment, with its easy access to a vast array of products and persuasive marketing techniques (e.g., limited time offers, social proof), can be a breeding ground for impulsive purchases.

7-7. The Moderating Role of E-Payments:

The ease and convenience of e-payments can act as a moderator, further amplifying the influence of these demographic and psychological factors on impulse buying behavior. Here's how:

- Reduced Transaction Friction: E-payments eliminate the physical act of handing over cash, reducing a psychological barrier that might otherwise deter an impulse purchase.

- Mental Accounting: The "invisibility" of money when using digital wallets (as highlighted by Luna [22] can lead to a disconnect between spending and its consequences, potentially increasing impulsive purchases.
- Credit Cards and Deferred Payment: Studies by Sussmuth [23] suggested that credit cards, with their deferred payment structure, can encourage higher spending compared to debit cards with immediate deductions. This delayed financial consequence can contribute to impulse buying.

7-8. Security and Trust: The Cornerstone of E-Payments:

While the convenience and efficiency of e-payments are undeniable, security and trust remain paramount for widespread adoption and sustained usage. Several studies highlight this critical aspect:

- Meiryani et a and Jumaa [24] [25] emphasized the significance of trust and safety in the digital realm. Consumers are more likely to embrace e-payments when they feel confident that their financial information and transactions are secure. This trust fosters a sense of security and reduces anxieties associated with online transactions.
- Rahi [13] not only identify factors influencing e-wallet adoption but also highlight the role of trust and security. Their study suggests that trust in e-wallet providers and the overall security of the platform significantly impact consumers' willingness to adopt these services.

7-9. Mobile Payment Systems and Spending Habits:

Mobile payment systems, such as Apple Pay and Google Pay, redefine the shopping experience through convenience and flexibility [26]. Studies by Hofmann [7] and Van Rompay [27] suggested that the ease of use associated with e-payments can lead to greater spending compared to cash transactions. The invisibility of money when using digital wallets further contributes to this effect [28].

7-10. The Role of E-Payment Methods and Psychological Factors:

Wang [4] highlighted that different e-payment methods have varying impacts on spending. Credit cards, with their deferred payment structure, encourage higher spending compared to debit cards [23]. Studies by Baumeister & Heatherton [20] and Kervyn et al. [8] explored the psychological drivers of impulse buying, including emotional states, social influences, and susceptibility to marketing tactics.

7-11. The Online Shopping Environment and Impulse Buying:

Raghubir et al. [13] and Liu et al. [21] suggested that the online shopping environment, with its easy access to products and persuasive marketing techniques (e.g., limited time offers), can be a breeding ground for impulsive purchases. Qian et al. [5] found a correlation between younger generations, more comfortable with technology, and a higher likelihood of impulse buying facilitated by e-payments. Zhang et al [6] suggest that individuals with higher incomes might be less restricted by limitations when using credit cards or e-wallets, potentially leading to higher impulse buying. While [29] documented gender differences in impulse buying, recent research by Dutta et al. [19} suggested these differences might be narrowing.

Based on the discussion and limitations outlined in the research, several potential gaps in the literature and contributions of the paper can be identified:

1. **Limited Research in the UAE Context**: Despite existing literature on e-payment systems and consumer behavior, there's a noticeable gap

regarding studies conducted in the UAE. This paper addresses this gap by focusing on the region, offering insights into consumer behaviors and attitudes unique to the UAE, influenced by cultural, economic, and regulatory factors.

2. **Impact of Multiple E-Payment Systems on Impulse Buying**: While some research exists on the relationship between e-payment systems and impulse buying, this paper extends the literature by specifically investigating the impact of having multiple e-payment options on impulse buying behavior. Understanding how the array of payment choices affects consumer decision-making provides crucial insights for businesses and policymakers alike.
3. **Trust and Security Concerns**: Addressing trust and security concerns related to e-payment systems is pivotal, as they significantly influence consumer adoption and usage. This paper delves into consumers' trust in various payment methods and their perceptions of security while engaging in online transactions, thereby contributing to a deeper understanding of the determinants of consumer confidence in e-commerce.
4. **Convenience and Shopping Experience**: Another key aspect this paper explores is the role of convenience in shaping the overall shopping experience. By examining consumers' perceptions of convenience associated with different e-payment systems, the study sheds light on how technological advancements impact consumer satisfaction and shopping journeys.
5. **Future Research Directions**: This paper not only fills existing gaps but also points towards future research directions. It suggests exploring emerging payment methods like cryptocurrencies and conducting studies with larger and more diverse samples. By highlighting these areas for further investigation, the paper contributes to shaping the research agenda in the realm of e-commerce and digital payments.

In summary, this paper significantly adds to the existing body of knowledge by focusing on the UAE context, investigating the impact of multiple e-payment systems on impulse buying, addressing trust and security concerns, examining convenience factors, and proposing avenues for future research. These contributions collectively advance our understanding of electronic payments and consumer behavior in the evolving landscape of commerce.

8. Research Methodology

This quantitative research study employed a primary data collection approach involving consumers across the UAE. To ensure efficiency in data gathering, we adopted a convenience sampling method, a non-probability sampling strategy. Given the constraints of time and resources, a random sample was deemed impractical. Therefore, we leveraged various social media platforms such as WhatsApp, Instagram, and Snapchat to distribute the questionnaire to a diverse population residing in different regions of the UAE.

The questionnaire, meticulously crafted with 16 questions, was administered to participants through Google Forms. To enhance accessibility and ease of response, QR codes linking to the survey were disseminated to students, staff, and faculty members of Jumeira University, as well as other relevant stakeholders. This approach minimized potential technical difficulties associated with online connections, thereby boosting the participation rate and ensuring data quality.

Following the data collection phase, we utilized IBM SPSS Statistics software to conduct comprehensive data analysis. Various statistical tests, including independent sample t-tests, one-way ANOVA, chi-square tests, and Pearson correlation tests, were

employed to examine the relationships between different variables and to test the hypotheses posited in this research paper. This analytical approach allowed for a thorough exploration of the data and provided valuable insights into the research questions at hand.

This quantitative research study employed a primary data collection approach involving consumers across the UAE. Due to practical constraints in approaching participants, we opted for a convenience sampling method, a non-probability sampling strategy. While this method facilitated data collection within our constraints, it's essential to acknowledge its limitations.

Convenience sampling methods may introduce bias into the sample composition, as participants are selected based on their easy accessibility rather than through random selection. This could potentially limit the generalizability of the findings, as the sample may not accurately represent the broader population. For instance, individuals who are more active on social media platforms or have easier access to the internet may be overrepresented in the sample, while those less technologically savvy or less inclined to participate in online surveys may be underrepresented.

Despite these limitations, convenience sampling was chosen due to the practical constraints of time and resources. Conducting a random sample would have required significantly more time and resources to reach a representative sample of the UAE population.

While convenience sampling may introduce some bias, efforts were made to mitigate this by diversifying the recruitment channels across various social media platforms and distributing QR codes to different demographic groups. Additionally, transparency regarding the sampling method and its potential limitations is crucial for accurately interpreting the results and understanding the scope of generalizability.

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Case Processing Summary

Cases	N	Percent
Valid	200	100.0%
Excluded	0	.0%
Total	200	100.0%

Cronbach's Alpha	N of Items
.72	5

Table 1 – Reliability statistics

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Given that this study comprises 5 5-point Likert scale questions, the reliability of the questionnaire was assessed using Cronbach's alpha test (table 1). The analysis revealed that all variables yielded values greater than 0.7, indicating high reliability. This indicates that the test-related factors used to assess variables demonstrate internal consistency, ensuring that they are identical and closely related to each other.

8-1 Instrument Development:

The survey utilized in this research paper comprised 16 questions divided into three sections.

1. Demographic Section (labeled as DM in SPSS):
   - Age of participants
   - Gender
   - Marital status
   - Preferred shopping locations
   - Frequency of online shopping
2. Customer Purchase Behavior Section (labeled as CPB in SPSS): This section included 6 questions related to customer purchase behavior, exploring aspects such as:
   - Sense of security with multiple digital payment options
   - Confusion or difficulty in choosing digital payment methods.
   - Most frequently used digital payment method for online shopping
   - Trust in companies offering non-cash payment options.
   - Preference between cash on delivery and digital payment options
   - Influence of easy digital payment systems on impulse buying
3. Likert Scale Questions Section (labeled as LSQ in SPSS): This section comprised 5 questions designed to gauge consumers' experiences with digital payment systems using a 5-point Likert scale. The questions aimed at achieving:
   - Triggering of impulse buying by digital payment methods
   - Frequency of using digital payments for online shopping
   - Perception of the impact of multiple digital payment methods on the shopping experience
   - Sense of security while shopping online using digital payments
   - Convenience provided by multiple digital payment methods during payment.

Table 2 summarizes all the questions included in the survey.

Question Type	Survey Questions
Demographic	1. What is your age? 2. What is your gender? 3. What is your current marital status? 4. Where do you mostly do your shopping? 5. How often do you spend time shopping online?
Customer	6. Do you feel a sense of security whenever you see multiple options of digital payments (e.g., Apple Pay, Google Pay, PayPal)? 7. Do you feel confused or lost while choosing any of the digital payment methods other than credit/debit card (e.g., Apple Pay, Google Pay, PayPal)? 8. What is your most used form of digital payment when shopping online? 9. Do you trust companies that offer payment methods other than cash on delivery (credit/debit cards, digital wallet, etc.)? 10. Do you trust companies that offer cash on delivery or digital payment options more? 11. Is it possible that some easy digital payment systems such as Apple Pay, Google Pay, etc., can cause impulse buying?

Question Type	Survey Questions
Purchase	12. Digital payment methods such as Apple Pay can trigger impulse buying for me. 13. How often do you use digital payments as the primary source of payment during your online shopping? 14. I feel that having multiple digital payment methods (credit/debit cards, Apple Pay, etc.) can positively impact my online shopping experience. 15. I feel secure whenever I am shopping online using digital payments 16. Having multiple digital payment methods provides convenience for me while paying.

Table 2 - Summary of all the questions included in the survey

The elaboration provides a clear overview of the questionnaire's structure and content, enhancing the reader's understanding of the survey instrument used in the study.

8-2 Data Collection

The data collection process for this research study involved effectively gathering primary data to conduct quantitative research on customer purchase behavior among consumers in the UAE.

Utilizing Google Forms, a questionnaire was constructed to collect responses from consumers residing in various parts of the UAE. The questionnaire was designed to capture relevant insights into consumer behavior related to digital payment systems.

The data collection period spanned from November 17, 2022, to December 6, 2022. During this time, efforts were made to reach out to potential respondents through various channels, including social media platforms and personal networks. Email addresses of close relatives, friends, colleagues, and acquaintances were also utilized to solicit responses.

A total of 200 responses were successfully gathered from consumers across the UAE during the specified data collection period.

Following the data collection phase, the collected responses were exported to IBM SPSS Statistics for statistical analysis. This involved conducting various tests and analyses to explore relationships, patterns, and trends within the dataset.

8-3 Data Analysis

Age	**Frequency**	**Percentage**
Below 18	5	2.5%
18-24	104	52%
24-34	51	25.5%
35-44	15	7.5%
45-54	19	9.5%
Above 54	6	3%
Total	**200**	**100%**
Gender	**Frequency**	**Percentage**
Female	158	79%
Male	42	21%
Total	**200**	**100%**
Marital status	**Frequency**	**Percentage**

Single	134	67%
Married	62	31%
Widowed	2	1%
Divorced	2	1%
Separated	0	0%
Total	**200**	**100%**
Preferred Shopping Sites	**Frequency**	**Percentage**
Traditional physical stores	83	41.5%
Large e-commerce sites	110	55%
Small online businesses	7	3.5%
Total	**200**	**100%**
Time spent shopping online	**Frequency**	**Percentage**
Multiple times per week	40	20%
Few times per month	78	39%
Once monthly	23	11.5%
Once every few months	55	27.5%
Once yearly	4	2%
Total	**200**	**100%**

Table 3 – Demographics data

8.3.1. Age Distribution:

- The largest age group is 18-24, constituting 52% of the sample, followed by 25-34 (25.50%).
- Older age groups (35-44, 45-54, and above 55) collectively represent 20% of the sample.
- The distribution skews towards younger individuals, with those below 35 accounting for 79.50% of the sample.

8.3.2. Gender Distribution:

- Females comprise most of the sample at 79%, while males represent 21%.
- There is a notable gender imbalance in the sample, with females being significantly overrepresented compared to males.

E-payment systems impact score	Age	N	Mean	Std. Deviation
	Below 18	5	2.8	1.48
	18-24	104	3.68	1.03
	25-34	51	3.92	1.16
	35-44	15	3.47	1.13
	45-54	19	3	1.29
	Above 55	6	3.67	1.75
	Total	200	3.64	1.15
E-payment systems impact score	Gender	N	Mean	Std. Deviation
	Male	42	3.93	1.18
	Female	158	3.56	1.14

	Total	200	3.64	1.15
E-payment systems impact score	Marital status	N	Mean	Std. Deviation
	Single	134	3.72	1.08
	Married	62	3.52	1.26
	Divorced	2	4	0
	Widowed	2	1.5	0.71
	Total	200	3.64	1.15
Impulse buying score	Age	N	Mean	Std. Deviation
	Below 18	5	3.6	1.34
	18-24	104	3.48	1.19
	25-34	51	3.27	1.3
	35-44	15	3.33	1.18
	45-54	19	2.95	1.43
	Above 55	6	2.83	1.6
	Total	200	3.35	1.26
Impulse buying score	Gender	N	Mean	Std. Deviation
	Male	42	3.05	1.43
	Female	158	3.43	1.2
	Total	200	3.35	1.26
Impulse buying score	Marital status	N	Mean	Std. Deviation
	Single	134	3.5	1.19
	Married	62	3.06	1.34
	Divorced	2	3.5	0.71
	Widowed	2	2	1.41
	Total	200	3.35	1.26

Table 4 – Mean of e-payment systems impact and impulse buying score

8.3.3. Marital Status Distribution:

- The majority of respondents are single (67%), followed by married individuals (31%).
- Only a small percentage of respondents are widowed or divorced (1% each), with no respondents reported as separated.

8.3.4. Preferred Shopping Sites:

- Large e-commerce sites are the most preferred shopping platform, chosen by 55% of respondents.
- Traditional physical stores are the second most preferred option, selected by 41.5% of respondents.
- Small online businesses are the least preferred option, chosen by only 3.5% of respondents.

8.3.5. Time Spent Shopping Online:

- Most respondents shop online a few times per month (39%) or once every few months (27.50%).
- A significant portion of respondents shop online multiple times per week (20%), indicating frequent online shopping habits.

- Only a small percentage of respondents shop online once monthly (11.50%) or once yearly (2%).

Overall, the data indicates a predominantly young and digitally savvy demographic, with a preference for large e-commerce sites and frequent online shopping habits. The gender distribution is skewed towards females, and many respondents are single or married.

8.3.6. E-payment Systems Impact Score:

1. Age:
   - The mean scores for e-payment system increase with age until the 25-34 age group and then decrease slightly for older age groups.
   - The highest mean impact score is observed in the 25-34 age group (3.92), and the lowest is among individuals aged 45-54 (3.00).
2. Gender:
   - Males tend to have a higher mean impact score (3.93) compared to females (3.56).
   - The standard deviation is similar for both genders, indicating relatively consistent responses within each group.
3. Marital Status:
   - Divorced individuals report the highest mean impact score (4.00), followed by single individuals (3.72), married individuals (3.52), and widowed individuals (1.50).
   - However, it's important to note that the sample size for divorced and widowed individuals is very small (2 each), which may affect the reliability of these findings.

8-4 Impulse Buying Score:

1. Age:
   - The mean impulse buying scores generally decrease with age, with the highest mean score observed in the under 18 age group (3.60) and the lowest among individuals above 55 (2.83).
   - There is a slight increase in the impulse buying score between the 35-44 and 45-54 age groups.
2. Gender:
   - Females tend to have a higher mean impulse buying score (3.43) compared to males (3.05).
   - The standard deviation for males is higher than for females, indicating more variability in responses among males.
3. Marital Status:
   - Single individuals report the highest mean impulse buying score (3.50), followed by divorced individuals (3.50), married individuals (3.06), and widowed individuals (2.00).
   - Like the e-payment system's impact score, the sample size for divorced and widowed individuals is small, potentially affecting the reliability of the findings.

Overall, these findings suggest that age, gender, and marital status may influence both e-payment system impact and impulse buying behavior. However, further analysis and consideration of other factors are necessary to draw more definitive conclusions. Additionally, the small sample sizes for certain demographic groups should be considered when interpreting the results.

The bar chart in Figure 1 illustrates the varying frequencies of each respondent's age group and their respective opinions on the potential

impulse buying behavior that could arise from the utilization of multiple e-payment systems.

Here's an analysis of the information in the chart:

- The chart showed younger groups ("Below 18" and "18-24") have the highest frequencies for responses indicating concern about impulse buying with more e-payment systems (Strongly Agree and Agree).
- "Below 18" age group shows a frequency of 40 for "Strongly Agree." This translates to 20% (40/200) of respondents in that age group being very concerned about impulse buying. Similarly, analyze frequencies for other age groups and response categories.
- The trend of decreasing concern with age still holds. The frequencies for "Agree" and "Strongly Agree" are likely decreased progressively from younger to older groups.
- The presence of neutral responses across all age groups suggests some uncertainty or lack of a strong opinion.
- With a sample size of 200, the results can be considered somewhat representative of the population from which the sample was drawn. However, a larger sample size would provide stronger evidence for generalizability.
- Further analysis could involve statistical tests to determine if the differences in concern levels between age groups are statistically significant. This would strengthen the conclusions drawn from the chart.

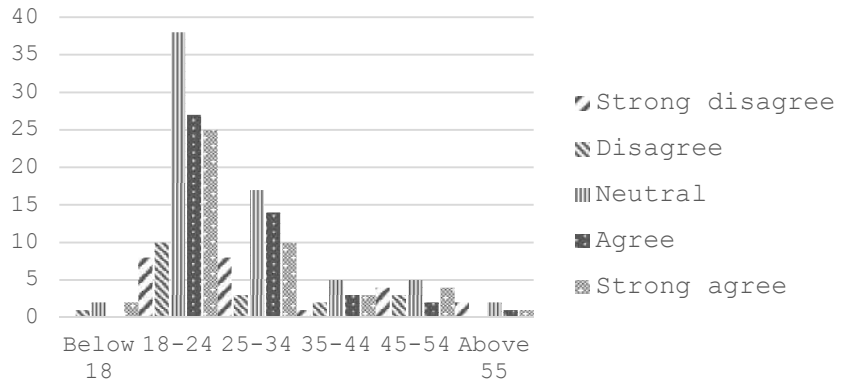

Figure 1 – Frequencies of age groups and impulse buying

Overall, the chart suggests a potential correlation between younger age and greater concern about impulse buying with multiple e-payment systems.

8-5 Descriptive analysis

Figure 2 illustrates the participants' perspectives on online and traditional physical businesses offering multiple forms of e-payment systems. The primary objective is to gauge the extent to which individuals rely on digital payment systems and how this reliance influences their overall sense of security and purchase behavior. With an increasing number of businesses adopting digital payment methods, it becomes crucial to assess their impact on consumer security and safety.

Understanding consumer perceptions of security is particularly important as more businesses transition to digital payment methods, with consumers increasingly relying on these systems as their primary mode of payment. Consequently, it is essential to investigate how this shift impacts consumer purchase behavior.

The data revealed that a significant majority of participants (70%) felt secure when presented with multiple options for e-payment systems. This underscores the influence and dependence that digital payment methods have on everyday transactions. However, it is noteworthy that a small percentage (8%) of participants expressed feeling insecure while shopping with multiple e-payment systems. Additionally, a notable portion (22%) remained uncertain about the security offered by digital payment methods.

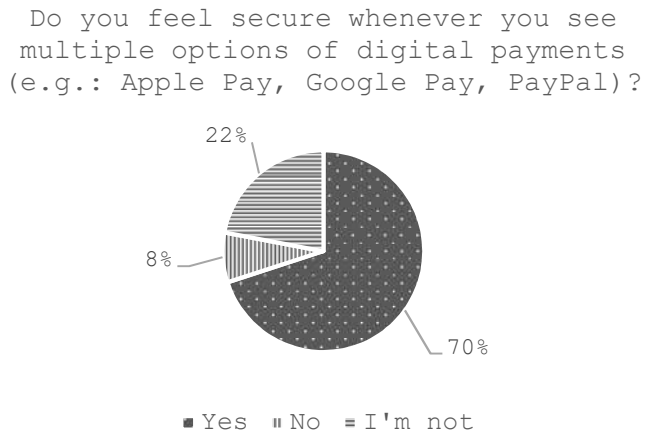

Figure 2 – Security with digital payment options.

The data revealed that a significant majority of participants (70%) felt secure when presented with multiple options for e-payment systems. This underscores the influence and dependence that digital payment methods have on everyday transactions. However, it is noteworthy that a small percentage (8%) of participants expressed feeling insecure while shopping with multiple e-payment systems. Additionally, a notable portion (22%) remained uncertain about the security offered by digital payment methods.

Overall, these findings shed light on the complex interplay between consumer perceptions of security and their adoption of digital payment systems. Understanding these dynamics is crucial for businesses and policymakers seeking to foster trust and confidence in digital transactions while addressing the concerns of hesitant consumers.

Given the paper's emphasis on safety and security among consumers, it is crucial to gauge the level of trust that consumers place in companies offering "Cash on Delivery" services versus those providing digital payment methods (Figure 3). When participants were asked about their preferences regarding companies, the majority of the sample (73%) expressed a preference for conducting transactions with businesses that offer cash on delivery rather than digital payment. Conversely, 24% of participants indicated that they tend to trust companies that offer digital payment options over cash on delivery.

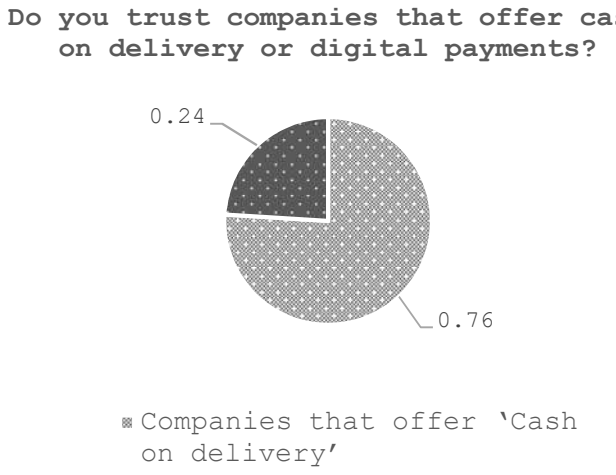

Figure 3 – Cash on delivery or digital payments.

These findings suggest that despite the advancement and proliferation of digital payment systems, a significant portion of consumers still place their trust in companies that prioritize payment security, often in the form of cash transactions. This highlights the enduring importance of trust and security in consumer preferences, even as digital payment technologies continue to evolve and improve.

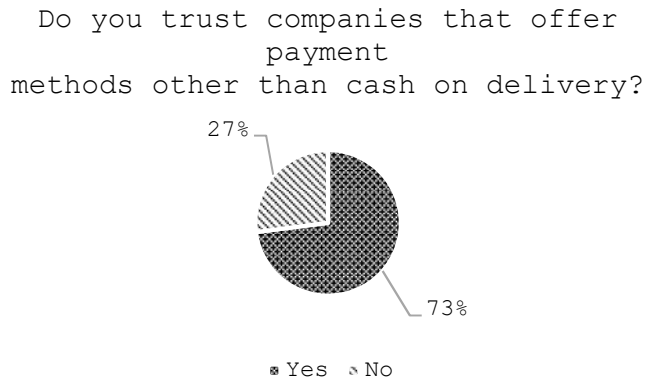

Figure 4 – Trust of individuals on payment other than cash

To assess the level of trust participants, have in companies offering payment services other than cash on delivery, a simple 'Yes' or 'No' question was posed to solicit their responses (Figure 4). The results revealed that most of the population (73%) expressed trust in companies offering payment systems other than cash on delivery. This trend is consistent with the increasing prevalence of businesses exclusively accepting digital payments in today's market. Therefore, it is pertinent to understand consumers' trust levels regarding online payment methods compared to traditional cash transactions.

Conversely, 27% of participants reported that they do not yet trust companies that solely accept digital payments. This minority perspective underscores the lingering skepticism or hesitation among some consumers toward fully embracing digital payment methods over traditional cash transactions.

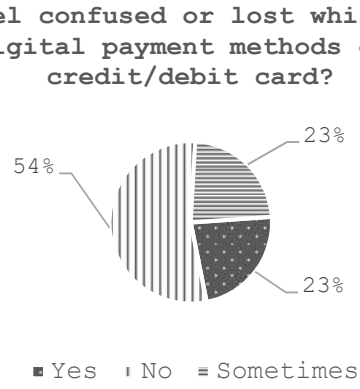

Figure 5 – Confusion on any digital payment systems excl. credit/debit cards.

One of the survey questions aimed to gauge whether participants experienced confusion or felt lost while using any e-payment system other than credit/debit cards (Figure 5). This inquiry sought to understand the user interface challenges posed by newer digital payment methods such as digital wallets and PayPal.

The findings revealed that many participants (54%) reported not feeling bewildered or confused when utilizing digital payment systems other than credit/debit cards. This suggests relatively smooth user experience for a significant portion of consumers when interacting with various e-payment platforms.

However, 23% of participants admitted experiencing a sense of confusion while using alternative e-payment methods. This indicates that a notable subset of consumers may encounter usability challenges or complexities when navigating certain digital payment systems.

Similarly, another 23% of respondents indicated occasional confusion, suggesting that the clarity of the payment process may vary depending on factors such as the specific e-payment platform or the type of business being patronized.

When participants were asked about their most frequently used form of e-payment system, the majority (65%) indicated that they primarily use credit/debit cards for digital transactions (Figure 6). This finding underscores the widespread acceptance and utilization of traditional card-based payment methods among consumers.

Following credit/debit cards, digital wallets emerged as the second most popular choice, with 31% of respondents preferring platforms like Apple Pay and Samsung Pay for their e-payments. This highlights the growing adoption of mobile-based payment solutions that offer convenience and seamless transactions.

In contrast, only a small fraction (4%) of participants reported using PayPal as their preferred e-payment method. While PayPal remains a prominent player in the digital payments landscape, its usage appears to be less prevalent compared to credit/debit cards and digital wallets among the surveyed population.

Interestingly, no respondents indicated using Western Union for their e-payments, suggesting a negligible presence or preference for this payment service within the surveyed population.

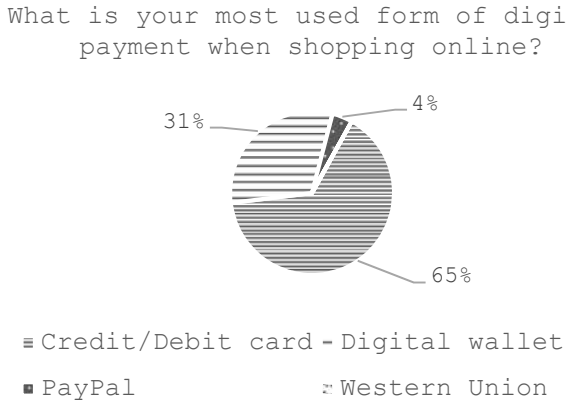

Figure 6 – Most common e-payment system

When participants were asked whether they believed that convenient e-payment systems like digital wallets could potentially trigger impulse buying behavior, the majority (82%) agreed with this proposition. (Figure7). This finding suggests a perceived link between the ease and convenience of digital payment methods and the likelihood of impulsive purchasing decisions among consumers.

The high percentage of respondents who acknowledged the potential for impulse buying in relation to digital wallets underscores the impact of seamless and user-friendly payment experiences on consumer behavior. As digital payment options become increasingly accessible and integrated into everyday transactions, they may inadvertently facilitate impulsive purchasing tendencies among users.

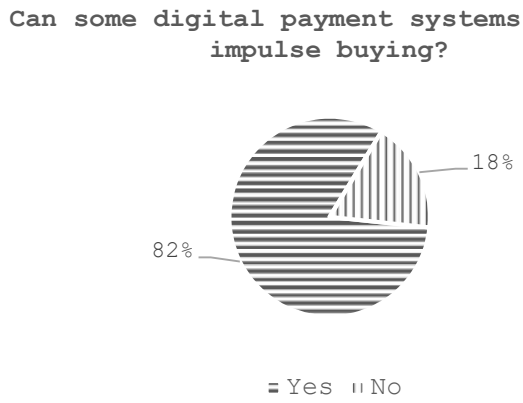

Figure 7 – E-payment systems and impulse buying

Conversely, a minority of participants (18%) expressed skepticism regarding the influence of multiple digital payment systems on impulse buying behavior. This suggests a divergence of opinion among consumers regarding the extent to which e-payment methods contribute to impulsive spending habits.

	Levene's Test for Equality of Variances	T-Test for Equality of Means

		F	Sig.	t	df	Sig. (2tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Having multiple digital payment systems can positively impact online shopping experience.	Equal variances assumed	.29	.590	1.84 62.85	198.0	.068 .077	.37	.20	-.03 -.04	.76 .77
	Equal variances not assumed			1.80			.37	.20		

Table 5 – Independent sample T-test of impact of multiple e-payment systems

To assess the level of variance between male and female respondents regarding the impact of multiple e-payment systems on their purchase behavior, an independent sample t-test was conducted (Table 5). The results indicate that the homogeneity of variance, as tested by Levene's Test, was found to be insignificant, suggesting that the variance of all variables is consistent across both genders. Additionally, with a p-value greater than 0.05, it was determined that there is no statistically significant difference between the mean responses of male and female participants who reported a positive impact associated with digital payment systems. This implies that both male and female respondents perceive similar benefits from utilizing multiple e-payment options in their purchasing behavior.

8-6 One-way Anova test

		Sum of Squares	df	Mean Square	F	Sig.
Multiple digital payment systems can positively impact online shopping experience	Between Groups	16.00	5	3.20	2.50	.032
	Within Groups	248.08	194	1.28		
Total		264.08	199			

Table 6 – ANOVA test of age and impact of multiple e-payment systems

The One-Way ANOVA test examined the means of respondents across different age groups regarding their reported shopping experience with various e-payment systems (Table 6). With a p-value of less than 0.05 (*0.032), the test results indicate that there is no statistically significant difference between the mean responses of all age groups who reported a positive impact associated with digital payment systems. Therefore, based on this finding, we fail to reject the null hypothesis, suggesting that age does not significantly influence the reported positive impact of digital payment systems on shopping experiences across different age demographics.

The ANOVA test conducted above examined the relationship between the means of respondents across multiple age groups and their reported impulse buying behavior potentially influenced by the availability of multiple e-payment systems (Table 7). With a reported p-value of greater than 0.05 (0.486), the test

results indicate that there is no statistically significant difference between the mean responses of all age groups concerning impulse buying behavior associated with having multiple digital payment systems. Therefore, based on this finding, we fail to reject the null hypothesis, suggesting that age does not significantly influence the reported impulse buying behavior related to the presence of multiple e-payment systems.

		Sum of Squares	df	Mean Square	F	Sig.
Digital payment systems such as Apple Bay can trigger impulse buying to me	Between Groups	7.07	5	1.41	.89	.486
	Within Groups	306.43	194	1.58		
Total		313.50	199			

Table 7 – ANOVA test of age and impulse buying behavior

8-7 Chi-Square Test

Digital payment systems can trigger impulse buying

Value	Observed N	Expected N	Residual
Strongly Disagree	23	40.00	-17.00
Disagree	20	40.00	-20.00
Neutral	66	40.00	26.00
Agree	46	40.00	6.00
Strongly agree	45	40.00	5.00
Total	200		

Test Statistics

	Chi square	df	Asymp. Sig.
Digital payment systems can trigger impulse buying to me.	35.65	4	.000

Table 8 – Chi-square test of impulse buying behavior

The Chi-Square test conducted above aimed to compare the observed results with the expected results for the linear-scale questions in this study, specifically regarding respondents' agreement that having multiple e-payment systems can trigger impulse buying (Table 8). The test assessed whether there was a significant difference between the observed and expected frequencies of responses. With a reported p-value of 0.00, which is less than 0.05, the Chi-Square test indicates a statistically significant difference between the observed and expected frequencies. Therefore, based on this finding, we reject the null hypothesis, suggesting that multiple digital payment systems can indeed trigger impulse buying behavior among consumers.

Having multiple digital payment systems can positively impact my online shopping experience.

Value	Observed N	Expected N	Residual
Strongly disagree	11	40.00	-29.00
Disagree	18	40.00	-22.00
Neutral	61	40.00	21.00
Agree	52	40.00	12.00
Strongly agree	58	40.00	18.00

Total	200		

Test Statistics

	Chi-square	df	Asymp. Sig.
Having multiple digital payment systems can positively impact my online shopping experience.	55.85	4	.000

Table 9 – Chi-square of impact of multiple e-payment systems

The Chi-square test conducted above aimed to compare the observed and expected frequencies of participants who reported a positive impact of having multiple e-payment systems on their purchase behavior (Table 9). A significant difference between the observed and expected frequencies would indicate that multiple e-payment systems do influence customer purchase behavior. With a reported p-value of 0.00, which is less than 0.05, the Chi-square test confirms a statistically significant difference. Therefore, we reject the null hypothesis, indicating that there is indeed a positive impact of multiple digital payment systems on customer purchase behavior

I feel secure whenever I am shopping online using digital payments.

Value	Observed N	Expected N	Residual
Strongly disagree	13	40.00	-27.00
Disagree	27	40.00	-13.00
Neutral	78	40.00	38.00
Agree	51	40.00	11.00
Strongly agree	31	40.00	-9.00
Total	200		

Test Statistics

	Chi-square	df	Asymp. Sig.
Security while shopping online using digital payments.	63.60	4	.000

Table 10 – Chi-square of security of multiple e-payment systems

The Chi-square test conducted above aimed to compare the expected and observed responses of the population regarding their level of security while shopping online using digital payment systems (Table 10). A significant difference between the expected and observed responses would indicate whether consumers feel secure and safe while using digital payments for online shopping. With a reported p-value of 0.00, which is less than 0.05, the Chi-square test confirms a statistically significant difference. Therefore, it can be interpreted that consumers indeed tend to feel secure and safe while shopping online using digital payments.

Multiple digital payment systems provide convenience for me while paying.

Value	Observed N	Expected N	Residual
Strongly disagree	6	40.00	-34.00
Disagree	5	40.00	-35.00
Neutral	56	40.00	16.00
Agree	44	40.00	4.00
Strongly agree	89	40.00	49.00
Total	200		

Test Statistics

	Chi-square	df	Asymp. Sig.
Multiple digital payment systems provide convenience for me while paying.	126.35	4	.000

Table 11 – Chi-square of convenience of multiple e-payment systems

The Chi-square test conducted above aimed to examine whether consumers perceive digital payment systems as providing convenience while paying, comparing observed responses with expected ones (Table 11). A significant difference between the observed and expected responses would indicate whether consumers indeed feel that digital payment systems offer convenience during transactions. With a reported p-value of 0.00, which is less than 0.05, the Chi-square test confirms a statistically significant difference. Therefore, it can be interpreted that consumers do perceive digital payment systems as providing convenience while paying.

8-8 Pearson Chi-Square test

	Value	df	Asymptotic Sig. (2tailed)
Pearson Chi-Square	14.39	20	.810
Likelihood Ratio	15.83	20	.727
Linear-by-Linear Association	4.10	1	.043
N of Valid Cases	200		

Table 12 – Pearson Chi-square of age and impulse buying behavior

The Pearson chi-square test conducted aimed to ascertain the correlation between the age of respondents and impulse buying triggered by digital payment systems, following the detection of a possible bias (Table 12). With a p-value of >0.05 (P-VALUE=0.810), it can be interpreted that there is a significant correlation between the age of respondents and the potential impulse buying behavior induced by multiple e-payment systems.

9. Discussion

The study investigated the impact of multiple e-payment systems on customer purchase behavior and impulse buying tendencies among residents of the UAE. Through a survey of 200 respondents, valuable insights were gleaned regarding the influence of various digital payment options on consumer behavior, along with their perceptions of trust, security, and convenience associated with e-payment systems.

The findings indicate a positive impact of having multiple e-payment systems on customer purchase behavior, with a mean score of 3.64. This suggests that consumers associate the availability of diverse e-payment options with an

enhanced shopping experience, highlighting the significance of offering a variety of payment methods to cater to consumer preferences and convenience.

Moreover, the study sheds light on the phenomenon of impulse buying facilitated by the accessibility of multiple e-payment systems. A considerable proportion of respondents (mean $\bar{x}$ = 3.35) admitted to experiencing impulse buying tendencies, particularly facilitated by convenient digital payment methods such as digital wallets. This underscores the correlation between the ease of e-payment systems and impulsive consumer behavior, urging businesses to consider the implications of their payment offerings on consumer spending habits.

In terms of trust in payment methods, many respondents expressed a preference for cash on delivery (76.5%) over digital payment options, driven by consumers' desire for reassurance and security in their transactions. However, a significant portion (73.5%) still expressed trust in companies offering digital payment methods, contingent upon the reputation and reliability of the business.

The study also revealed a growing reliance on digital payment systems, with most respondents (mean $\bar{x}$ = 3.795) using digital payments as their primary method for online shopping. This underscores the increasing role of digital payment technologies in facilitating e-commerce transactions and reflects consumers' evolving preferences towards convenient and efficient payment solutions.

Regarding security perceptions, respondents generally felt secure while shopping online using digital payment systems (mean $\bar{x}$ = 3.3), albeit with varying levels of trust depending on the credibility of the business. This emphasizes the importance of building trust and ensuring robust security measures to instill confidence among consumers in using digital payment platforms.

Statistical analyses corroborated several hypotheses, including the positive impact of multiple e-payment systems on customer purchase behavior and the correlation between digital payment methods and impulse buying tendencies. However, significant variance between age groups regarding impulse buying behavior suggests a potential bias that warrants further investigation.

In conclusion, the findings of this study provide valuable insights into the evolving landscape of e-commerce and digital payment adoption, emphasizing the need for businesses to offer diverse and secure payment options while considering the implications on consumer behavior and decision-making processes.

10. Research Implications

The study's findings hold several implications for future research and practical applications. Firstly, they underscore the importance for businesses to diversify their e-payment options to meet consumer preferences and enhance the overall shopping experience. Understanding the correlation between e-payment systems and impulse buying can inform marketing strategies aimed at influencing consumer behavior.

Secondly, the study highlights the significance of trust and security in driving consumer adoption of digital payment methods. Future research could delve deeper into the factors influencing consumers' trust perceptions and the effectiveness of security measures in enhancing consumer confidence in e-commerce transactions.

Furthermore, the findings emphasize the need for businesses to tailor their payment offerings to different demographic segments, considering factors such as age and income levels. Exploring how these demographic variables influence consumer behavior can provide valuable insights for targeted marketing and product development strategies.

11. Limitations and Future Work

Despite the contributions of this study, there are several limitations that warrant acknowledgment. The relatively small sample size of individuals residing in the UAE may limit the generalizability of the findings. Future research could address this limitation by conducting studies with larger and more diverse population samples, utilizing random sampling methods to enhance the accuracy and representativeness of the results.

Additionally, constraints related to time and resource availability limit the depth of analysis and examination possible for this study. Future research could overcome these limitations by allocating sufficient resources and time to conduct more comprehensive analyses and explore additional variables that may influence consumer behavior.

The use of convenience sampling may introduce biases into the sample composition, affecting the reliability and validity of the results. Future studies could employ more rigorous sampling methods to mitigate these biases and ensure the robustness of the findings.

Furthermore, as emerging payment methods such as cryptocurrencies gain prominence, future research could explore their impact alongside traditional and digital payment systems. Investigating the adoption and usage patterns of cryptocurrencies and their implications for consumer behavior can provide a comprehensive understanding of evolving payment preferences in the digital era.

Overall, while this study provides valuable insights into the impact of multiple e-payment systems on consumer behavior in the UAE, there is ample opportunity for future research to build upon these findings and advance our understanding of electronic payments and consumer behavior in the evolving landscape of commerce.

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