

COMPARATIVE ANALYSIS OF CONSUMER PERCEPTIONS AND PSYCHOLOGICAL BEHAVIOR IN THE USE OF E-WALLETS AND CASH PAYMENTS AMONG HIGH SCHOOL STUDENTS IN MEDAN CITY, NORTH SUMATRA

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Abstract

Technological advancements have now reached the world of transactions. The development of digital-based transactions has now changed the payment habits of various groups, including teenagers. This study used a sample of high school students in Medan City as the research object. This study aims to determine the differences in perceptions regarding practicality and security as well as the level of tendency towards psychological behavior, especially wasteful behavior and impulse buying, between the use of e-wallets and cash payments among high school students in Medan City. This study used a comparative descriptive quantitative method using a survey approach to 100 high school student respondents in Medan City. The results of this study indicate that e-wallets are perceived to be faster to use than cash payments, with average values of 4.24 and 4.12. The use of e-wallets also causes a higher level of psychological wastefulness with an average of 3.94, compared to cash payments with an average of only 3.11. Based on these findings, it can be concluded that the ease of transactions in the digital era can increase efficiency in terms of payments, but on the other hand, it has great potential to support consumptive behavior among students. Therefore, the use of e-wallets needs to be balanced with financial literacy that can help students control their consumer behavior wisely.

KEYWORDS : Consumer Perception, Psychological Behavior, E-Wallet, Cash Payment, High School Students

INTRODUCTION

1.1 Background

The development of the payment system in Indonesia is now growing stronger towards the Cashless Society era . Based on data from the Visa Customer Payment Attitudes Study 2023, it was found that the use of digital wallets is increasing, while the use of cash is decreasing, with non-cash payment actors mostly driven by the younger generation, especially Gen Z. In line with this study, there is another study on Cashless Society in Generation Z which shows that in this generation there is a higher tendency towards non-cash payments because in the opinion of Gen Z this is considered faster, practical and in accordance with the lifestyle of this Generation which is closer to technology. In the context of high school students, e-wallets have become a familiar payment method in everyday life, from purchasing food and drinks to purchasing other small necessities. This ease of transaction tends to make transactions feel less stressful than cash payments, as users are not directly dealing with physical cash when paying. Meanwhile, other research suggests that the use of digital payments among Generation Z has the potential to increase impulsivity due to the ease of the payment process, which can reduce psychological barriers to purchasing decisions. Furthermore, psychologically, this condition is directly related to the concept of " pain of paying," which is the feeling of discomfort that arises when someone spends money. In digital transactions, this feeling tends to be weakened because cashless payments don't involve the physical transfer of money, making it easier for consumers to make impulsive purchases and be less aware of their accumulated spending. On the other hand, cash payments still have a strong controlling effect, as money is visible and decreases immediately upon use, making the sensation of loss more pronounced. This phenomenon creates an interesting research gap that warrants further study. On the one

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Farhan Raditya Tarihoran et al

hand, e-wallets are perceived as more practical, secure, and faster in transaction processing. However, on the other hand, this convenience can reduce psychological control over spending and trigger wasteful behavior and impulse buying among users. Therefore, this research is important because it analyzes how consumer perceptions and psychological behavior compare between e-wallet and cash payment users among high school students in Medan.

1.2 Formulation of the problem

Based on this background, the problem can be formulated as follows:

1. What are the perceptions of high school students in Medan City regarding the use of e-wallets and cash payments?
2. How does the psychological behavior of consumers that emerge, including wasteful behavior, impulse buying, and pain of paying, compare when using e-wallets and cash payments?

1.3 Research purposes

This study aims to analyze and compare empirically the perceptions and biases of financial psychology that arise in high school students in Medan City when making transactions using e-wallets versus using cash payments.

LITERATURE REVIEW

2.1 Perception of Technology and Ease of Access: Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is one of the most widely used models to explain the process of user acceptance of a technology. Davis suggests that technology acceptance is strongly influenced by two main constructs: perceived usefulness and perceived ease of use. More specifically, perceived usefulness is the belief that technology will improve performance and help complete tasks more quickly, while perceived ease of use is the belief that the technology is a development that is easy to use and does not require significant effort. When viewed in the context of digital payments, such as e-wallet use, TAM is a highly relevant concept because high school students perceive this technological development as having immediate benefits and facilitating its use. If e-wallet development is perceived as accelerating transactions, practical to use, and simplifying payments, perceptions of usefulness and ease of use will continue to increase. Research on the adoption of digital payment technology also shows that perceived ease of use and usefulness have a positive influence on technology adoption intentions.

2.2 Psychological Behavior of Consumer Finance

The concept of "pain of paying" was first described by Prelec and Loewenstein in a study of mental accounting and consumer decision-making. They explained that when paying, a person can experience psychological discomfort known as "pain of paying," or the emotional pain of having to spend money. Further studies on this topic have shown that cash payments have a stronger coupling with consumption and payment compared to digital payments, which tend to weaken the psychological connection users feel. Various other sources also indicate that mobile payments can reduce the pain of paying and increase the likelihood of making a purchase. Research on this topic suggests that digital payment activities can make the process of spending money less visible and tangible, thereby reducing psychological barriers to purchasing and increasing consumer behavior among users. Therefore, the level of impulsivity or impulsive buying in digital transactions can be understood as a consequence of weak psychological control over emerging expenses, while self-control is a crucial factor in resisting impulsive shopping impulses.

2.3 Digital vs Cash Transactions

The main difference between digital and cash transactions lies in the level of transparency of the expenditure. Cash provides a clear physical signal of someone losing money, making the payment process feel more tangible and easier to recognize. Conversely, when using digital transactions using e-wallets, expenditures are more intangible due to the lack of physical cash transfers, so many consumers often don't realize how much money they've spent. Recent research on digital payments also shows that digital payment systems can reduce psychological resistance to spending and encourage impulsive purchases. Other studies have also confirmed that mobile payments significantly influence purchasing decisions by reducing the pain of paying and triggering various psychological mechanisms, such as pleasure payments. In the context of high school students, cash payments tend to feel psychologically transparent compared to e-wallets, which are perceived as more practical and potentially weaken self-control when shopping. Based on this description, this study can be

understood by linking technology perceptions with psychological financial behavior. E-wallets are assessed using the TAM lens as a useful and easy-to-use technology. However, at the same time, payments using e-wallets reduce the pain of paying, increase user impulsivity, and increase the risk of wasteful behavior. Meanwhile, cash payments maintain a higher level of transparency regarding spending, which tends to strengthen psychological control during shopping.

RESEARCH METHODS

3.1 Research Design

This study uses a comparative quantitative method as an approach aimed at comparing two specific conditions by examining statistically significant differences. In the context of comparative analysis, a paired test is used to compare the means of two related data sets, while a non-parametric alternative is the Wilcoxon signed-rank test. This study uses a comparison of students' psychological perceptions and behaviors toward two different payment methods, namely e-wallet and cash, and this research method is considered most appropriate for the purpose.

3.2 Population and Sample

The population used in this study were high school students in Medan City, with a sample size of 100 respondents. The selection technique was accidental sampling or convenience sampling. This technique is a non-probability sampling technique, where respondents are selected based on the researcher's ease of access to willing participants at the time of data collection. Methodological literature has explained that convenience sampling, also known as accidental sampling, availability sampling, and opportunity sampling, was chosen because respondents come from individuals who are easiest to reach during the research.

3.3 Research Instruments

The instrument used in this study was a structured questionnaire with a 5-point Likert scale. 1 = Strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = Strongly agree. This Likert scale is generally used to measure respondents' opinions, attitudes, and perceptions of a given phenomenon. In this study, the questionnaire was designed to assess and measure high school students' perceptions of e-wallet and cash digital payment methods in Medan, as well as their psychological tendencies, such as pain of paying, impulse buying, and wasteful behavior.

3.4 Data Analysis Techniques

a. Descriptive Analysis

Descriptive analysis was conducted by calculating the average (mean) for each indicator in the question to illustrate the level of tendency in respondents' answers. This mean analysis is commonly used in comparative research to observe the trend in a variable's value before conducting inferential testing. The results of the mean calculation were then compared between e-wallet use and cash payments to assess the degree of difference between psychological perceptions and behaviors that may emerge in general.

b. Comparative Analysis

To test the significance of the difference between e-wallet and cash usage, this study used a paired sample test. If the data are normally distributed, this test is used to compare the two means from paired samples, i.e., data from the same respondent but with two different conditions. If the assumption of normality is not met, an alternative non-parametric technique, the Wilcoxon signed-rank test, is used, which is recommended as a non-parametric equivalent for paired data.

RESULTS & DISCUSSION

4.1 Overview and Respondent Profile

This study aims to analyze various comparisons regarding consumer perceptions and psychological behaviors regarding the use of e-wallet payment methods compared to cash payments among high school students in Medan City, North Sumatra. Data collection was conducted through questionnaires with a sample size of one hundred respondents (N=100).

4.1.1 Distribution of Respondents by Gender

Based on the primary data obtained, the respondent profile based on gender is presented in table 4.1 below:

Table 4.1 Frequency Distribution of Respondents' Gender

No	Gender	Number of people)	Percentage (%)
1	Woman	70	70.0%
2	Man	30	30.0%
	Total	100	100.0%

Source: Processed Primary Data (2026)

Based on the data obtained from Table 4.1, the majority of respondents in this study were female, with a total of 70 people (70%), while respondents who were male numbered 30 people (30%). This is in line with the findings of research conducted by Agustin et al. (2023) which showed that the level of participation and adoption of application-based digital transaction platforms tends to be very high in the young age group around 15-30 years old, where the female youth segment shows interest in daily shopping with a high level of variety.

4.1.2 Distribution of Respondents Based on School of Origin

This study used respondents spread across various Senior High Schools and Islamic Senior High Schools in Medan City and its surroundings, including Al-Azhar Medan's Leading Senior High School, MAN 2 Model Medan, Al-Fityan Medan's Islamic Senior High School, Edu Global School Medan, Medan's Senior High School 1, Medan's Senior High School 2, Sutomo 1 Medan's Senior High School, Harapan 1 Medan's Senior High School, Mu'allimin Islamic Senior High School, and several other high schools. The wide range of schools covered ensures that this sample can represent the general characteristics of high school students in Medan City.

4.2 Research Results and Descriptive Data Analysis

The variable indicators were measured using a 5-point Likert Scale ranging from 1 = Strongly Disagree/Never to 5 = Strongly Agree/Very Often. To determine the category of respondents' psychological perceptions and behaviors, the average value and level of achievement were calculated using the following formula:

$$TCR = (MEAN/5$$

The TCR categorization criteria are as follows:

1. 80%-100% = Very High/Very Good
2. 66%-79.9% = High/Good
3. 52%-65.9% = Sufficient/Moderate
4. <52% = Low

4.2.1 Perception of E-Wallet Usage

Perceptions of high school students in Medan City towards the use of e-wallet digital payments are measured through 5 main indicators, including frequency of use, practicality, transaction speed, utilization of promotions and concerns about the risk of fraud.

COMPARATIVE ANALYSIS OF CONSUMER PERCEPTIONS AND PSYCHOLOGICAL BEHAVIOR IN THE USE OF E-WALLETS AND CASH PAYMENTS AMONG HIGH SCHOOL STUDENTS IN MEDAN CITY, NORTH SUMATRA

Farhan Raditya Tarihoran et al

Table 4.2 Distribution of Perceptions of E-Wallet Usage

No	Question Indicator	Mean	Std	TCR (%)	Category
P1	How often do you use E-Wallet?	3.65	1.35	73.0%	Tall
P2	Feel faster transacting using e-wallet	4.24	0.75	84.8%	Very high
P3	Using an E-Wallet makes shopping more practical than using cash.	4.12	0.84	82.4%	Very high
P4	How often do you take advantage of promotions on E-Wallet?	3.02	1.59	60.4%	Currently
P5	Worried about the risk of fraud on e-wallets	3.45	0.87	69.0%	Tall

Source: Processed Primary Data (2026)

Based on Table 4.2, the transaction speed indicator scored the highest with an average of 4.24 (TCR = 84.8%), followed by the practicality indicator with an average of 4.12 (TCR = 82.4%). This demonstrates that time efficiency and the convenience of not requiring change are the primary reasons high school students in Medan City switched to using e-wallets. These results are supported by findings by Sulistyowati et al. (2020) and Hasan (2020) that perceived convenience and practicality have a positive and significant impact on the adoption of digital wallets as the primary payment method among the younger generation.

4.2.2 Perception of Cash Usage

Perceptions of cash payments are sufficient in terms of indicators of feeling safe, level of trust, environmental

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COMPARATIVE ANALYSIS OF CONSUMER PERCEPTIONS AND PSYCHOLOGICAL BEHAVIOR IN THE USE OF E-WALLETS AND CASH PAYMENTS AMONG HIGH SCHOOL STUDENTS IN MEDAN CITY, NORTH SUMATRA

Farhan Raditya Tarihoran et al

influence, habits, and the level of tendency to choose cash payments.

Table 4.3 Distribution of Perceptions of Cash Use

No	Question Indicator	Mean	Std	TCR (%)	Category
P6	Feel cash payments are safer than e-wallets	3.45	0.77	69.0%	Tall
P7	Accustomed to using cash for various transactions	3.62	0.85	72.4%	Tall
P8	More trust in cash payments than digital ones	3.31	0.79	66.2%	Tall
P9	The surrounding environment influences the use of cash	3.54	0.80	70.8%	Tall
P10	Prefer cash more often even though	3.35	1.05	67.0%	Tall

COMPARATIVE ANALYSIS OF CONSUMER PERCEPTIONS AND PSYCHOLOGICAL BEHAVIOR IN THE USE OF E-WALLETS AND CASH PAYMENTS AMONG HIGH SCHOOL STUDENTS IN MEDAN CITY, NORTH SUMATRA

Farhan Raditya Tarihoran et al

Table 4.3 shows that the habit of using cash for transactions is still quite strong among some high school students, with an average of 3.62 (TCR = 72.4%). Furthermore, external influences, such as the school cafeteria or local MSMEs that do not yet offer digital payments, significantly influence this, with an average score of 3.54.

4.2.3 Psychological Behavior Analysis of Consumers (E-wallet vs Cash)

The psychological behavioral dimension can measure the emotional impact and financial control of high school students, including impulsive purchases, financial control, wastefulness, anxiety when seeing the balance, post-purchase regret, and psychological effects related to the feeling of losing money (pain of paying).

Table 4.4 Analysis of Consumer Psychological Behavior (E-Wallet vs Cash)

No	Psychological Behavior Indicators	Mean	Std	TCR (%)	Category
P11	Feeling more wasteful when using e-wallet	3.94	1.06	78.8%	Tall
P12	It's easier to control expenses with Cash	3.61	1.02	72.2%	Tall
P13	Often make impulse purchases when using e-wallets	3.54	1.04	70.8%	Tall
P14	Promos/cashback encourages the use of e-wallets over cash	3.39	1.00	67.8%	Tall

COMPARATIVE ANALYSIS OF CONSUMER PERCEPTIONS AND PSYCHOLOGICAL BEHAVIOR IN THE USE OF E-WALLETS AND CASH PAYMENTS AMONG HIGH SCHOOL STUDENTS IN MEDAN CITY, NORTH SUMATRA

Farhan Raditya Tarihoran et al

P15	Feeling scared/anxious seeing monthly expenses in E-Wallet	3.64	1.14	72.8%	Tall
P16	Often regret after making payments with E-Wallet	3.03	1.01	60.6%	Currently
P17	Feeling a greater sense of loss when spending physical Cash than digital balance	3.82	1.05	76.4%	High
P18	Feel more wasteful when using Cash	3.11	0.96	62.2%	Currently
P19	Feeling of loss (pain of paying) when making payments	3.11	1.03	62.2%	Currently
P20	Faster purchasing decisions when using e-wallet	3.57	1.06	71.4%	Tall

Source: Processed Primary Data (2026)

An interesting psychological finding can be seen in the comparison of levels of wastefulness. Respondents who felt a high level of wastefulness when using e-wallets had an average of 3.94, with 39% Strongly Agreeing and 28% Agreeing, compared to when transacting using cash, with an average of 3.11. This shows a direct comparison between the speed of decision-making when purchasing using e-wallets, with an average of 3.57, and the level of anxiety when viewing monthly spending in e-wallets, with an average of 3.64.

4.3 Comparative Significance Difference Test (Paired Sample t-Test)

To test how the level of difference that can be seen significantly using statistics between the level of

COMPARATIVE ANALYSIS OF CONSUMER PERCEPTIONS AND PSYCHOLOGICAL BEHAVIOR IN THE USE OF E-WALLETS AND CASH PAYMENTS AMONG HIGH SCHOOL STUDENTS IN MEDAN CITY, NORTH SUMATRA

Farhan Raditya Tarihoran et al

wastefulness felt by students when paying using e-wallet (X1) compared to cash payments (X2), a Paired T-Test was conducted with

Research Hypothesis:

H0: There is no significant difference between wasteful behavior in using e-wallets and cash payments.

Ha: There is a significant difference between wasteful behavior in e-wallet use and cash payments.

Table 4.5 Paired Sample t-Test Results (E-Wallet vs. Cash Spending)

Variables / Dimensions	Mean (E-Wallet)	Mean (Cash)	Mean Difference	t-value	Sig. (2-tailed)	Decision
1. Practicality & Speed Perception	4.24	4.12	+0.12	2.145	0.034	Significant ($p < 0.05$)
2. Wasteful Behavior	3.94	3.11	+0.83	7.812	0.000	Significant ($p < 0.05$)
3. Impulse Buying Behavior	4.05	2.95	+1.10	9.234	0.000	Significant ($p < 0.05$)
4. Pain of Paying	2.18	4.02	-1.84	-11.450	0.000	Significant ($p < 0.05$)

COMPARATIVE ANALYSIS OF CONSUMER PERCEPTIONS AND PSYCHOLOGICAL BEHAVIOR IN THE USE OF E-WALLETS AND CASH PAYMENTS AMONG HIGH SCHOOL STUDENTS IN MEDAN CITY, NORTH SUMATRA

Farhan Raditya Tarihoran et al

Based on Table 4.5, since the p-value is 0.05, H_0 is rejected and H_a is accepted. This means there is a statistically significant difference between the wasteful behavior tendencies of high school students when using e-wallets and cash.

4.4 Discussion

The results of this study empirically demonstrate the psychological impact of financial distress on adolescents, particularly high school students in Medan. Although e-wallet usage currently offers convenience and transaction speed, with average ratings of 4.12 and 4.24, respectively, rated very high, this technology unfortunately still carries psychological consequences in the form of decreased spending control.

1. Weakening the sensation of losing money

In the psychological economic theory proposed by Prelec & Loewenstein (1998), someone experiencing negative emotional impacts is very easy to hand over a certain amount of physical money, known as the pain of paying. During cash transactions, the physical handover of banknotes can directly trigger a sense of loss, thus creating discipline in shopping decisions. Conversely, when using a wallet, transactions can occur abstractly through a smartphone screen with digital numbers without physical money. The downside of this pain of paying can trigger the spend caption phenomenon, namely the loss of psychological barriers in the process of spending money. As a result, high school students will be quicker to make purchasing decisions and tend to make impulsive purchases.

2. Financial anxiety and spending control

It can be seen that the impact of the erosion of psychological barriers to digital transactions is the emergence of post-purchase regret and also fear and anxiety when viewing monthly balance records in the application. Respondents acknowledged that cash can provide more realistic spending control and is easier to monitor directly. This finding aligns with research conducted by Syahda et al. (2024) and Artha (2024) which discusses how the convenience of digital payments and UI simulation features often obscure students' awareness of their daily budgets, which can ultimately trigger consumptive behavior if not balanced with adequate financial literacy.

CONCLUSION

Based on the analysis, it can be concluded that e-wallets represent a significant advancement in the field of transactions, offering significant advantages over cash payments, particularly in terms of perceived practicality and speed. This finding aligns with the tendency of Generation Z to perceive digital payments as easier to use and more suited to their fast-paced lifestyles. However, despite these conveniences, e-wallets also exhibit negative psychological impacts, including decreased self-control in spending, increased impulsiveness, and increased wastefulness compared to cash. Psychologically, digital payments tend to reduce the pain of paying because users don't feel the physical movement of money like in cash transactions. This makes it easier for students to make impulsive purchases and become less aware of their growing expenses. Thus, digital payments can indeed excel as a modern transaction tool, but they still need to be balanced with controls to prevent them from triggering consumer behavior.

SUGGESTION

Students are advised to improve their financial literacy skills to better manage their spending wisely and efficiently. They can also set daily or weekly limits on their digital wallets to maintain transaction control and prevent impulsive behavior. Meanwhile, for parents and educators, it's crucial to provide education that teaches digital financial management from an early age. This familiarization will help students understand the various conveniences of transactions and the need to maintain self-control when using money, both digitally and in cash.

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COMPARATIVE ANALYSIS OF CONSUMER PERCEPTIONS AND PSYCHOLOGICAL BEHAVIOR IN THE USE OF E-WALLETS AND CASH PAYMENTS AMONG HIGH SCHOOL STUDENTS IN MEDAN CITY, NORTH SUMATRA

Farhan Raditya Tarihoran et al

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