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# Do Consumers Perceive Impulsive Buying and Pain of Payment? E-Commerce Transactions Using Pay Later, E-Wallet, and Cash-On-Delivery

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**Abstract:** This study investigates how modern payment options, pay-later, e-wallets, and COD affect online shopping behavior, specifically on impulsive purchases and the feeling of regret after spending, known as the pain of payment. While numerous studies have individually assessed the impact of these payment modalities, there was a paucity of research examining the combined effect of these three contemporary payment methods within experimental frameworks. This study also examines whether buying groceries or fashion items influences these behaviors. The research involved 162 consumers divided into 6 groups based on the type of payment method (pay-later, e-wallet, cash-on-delivery) and type of products (grocery and fashion). The study found that the chosen payment method has no significant impact on impulsive buying behavior. However, customers are more likely to purchase fashion items impulsively than groceries. The pay-later option, especially for fashion items, led to the most impulsive buying and the strongest feeling of payment regret. On the other hand, using COD for fashion items was the least popular, and e-wallets generally led to lower overall spending. The study also found that people spend more time shopping for groceries than fashion. Both thought processes and emotions influenced the decision to buy. Interestingly, paying with COD helped improve self-control and reduce negative feelings. Based on the control theory of self-regulation, this research provides insights into managing spending and achieving customer financial goals, highlighting the connection between payment options, impulsive buying, and consumer well-being.

**Keywords:** pay-later, e-wallet, cash-on-delivery, impulsive buying, pain of payment
**JEL Classification:** D91, C91, M310

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# Introduction

The advent of e-commerce has revolutionized consumer buying and selling behaviors, transitioning from traditional in-person transactions to digital platforms. This shift has been significantly accelerated by the global COVID-19 pandemic, which imposed social restrictions and reduced face-to-face interaction, thereby enhancing consumer reliance on e-commerce (Ansori & Nugroho, 2024; Donthu & Gustafsson, 2020; Hall et al., 2021). For instance, Walmart's grocery e-commerce saw an increase of around 74%. Significant growth on several global e-commerce websites, including Amazon.com (USD 4,059 billion), Ebay.com (USD 1,227 billion), and Rakuten.co.jp (USD 804 billion). More than 50% of consumers have avoided visiting stores and expressed concerns about shopping in person in crowded places (Bhatti et al., 2020). E-commerce businesses in developing countries, such as Indonesia, have also experienced an increase in sales. Surveys in Indonesia have shown that during the COVID-19 pandemic, direct buying and selling (face-to-face) outside of e-commerce decreased to only around 30% (Fachrizal, 2021).

Post-COVID-19, the business world has begun to recover from the economic downturn. Consumer shopping behavior in the post-COVID-19 era has remained unchanged, even though social restrictions set by the government have been lifted. The increasing popularity of e-commerce can be attributed to the benefits it offers over traditional commerce (Wilson et al., 2019). Consumers have continued to use e-commerce to buy and sell goods and services, driven by cost and time efficiency considerations. Rizi et al. (2023) suggested that enterprises should switch to using into the digital platform e-commerce to transform their business. Factors such as parking and transportation costs and the time spent visiting the store have been the main reasons for the continued use of e-commerce, even after the pandemic has ended (Turban et al., 2015). E-commerce offers advantages because it is easier, more practical, and more efficient, providing promotional and cashback options and various payment methods. Indonesia has been ranked first in e-commerce usage in the ASEAN region, with almost 90% of Indonesian internet users preferring to shop for their needs using e-commerce services (Setiawan et al., 2022).

**Table 1.** Top 10 The Most Internet Users in Asian Country

| Rank | Country | Users |
|---|---|---|
| 1 | China | 989.08 M |
| 2 | India | 755.82 M |
| 3 | Indonesia | 212.35 M |
| 4 | Japan | 118.63 M |
| 5 | Bangladesh | 116.14 M |
| 6 | Pakistan | 100.68 M |
| 7 | Philippines | 89.10 M |
| 8 | Vietnam | 74.75 M |
| 9 | Thailand | 57.00 M |
| 10 | South Korea | 49.42 M |

The convenience of e-commerce, with its vast array of product choices in terms of price and brand, presents a downside: it can easily distract consumers and potentially encourage impulsive purchases. Our survey reveals that over 80% of female consumers make purchases based on desire rather than necessity, indicating impulsive behavior. This trend of e-commerce's positive growth contrasts with consumer behavior that potentially fosters negative, impulsive buying habits.

Impulsive buying may lead to financial issues by disrupting budgets with unplanned purchases. Yi and Baumgartner (2011) associate consumers' impulsive buying behaviors with a lack of self-regulation, resulting in negative emotions like guilt and shame. Impulsive buying is a common phenomenon where people purchase items without considering their necessity or value. While this behavior may lead to the acquisition of useful products, it can also have negative consequences. Further, Verplanken et al. (2005) and Silvera et al. (2008) links impulsive buying to negative moods and low self-esteem. This behavior, while sometimes leading to the acquisition of useful products, can have adverse effects, including the development of unhealthy snacking habits and eating disorders. Impulse buyers are more likely to purchase unhealthy snacks, contributing to health issues like weight gain and diabetes. Moreover, impulsive buyers often experience post-purchase regret, especially with secondary, non-essential products bought for their perceived value or novelty (Kivetz et al., 2006).

Previous studies have investigated the impact of credit and debit cards on impulsive buying behavior (Baumeister, 2002; Thomas, Desai & Seenivasan, 2011) and the pain of payment (Raghubir & Srivastava, 2008; Chatterjee & Rose, 2012; Lee, Morewedge, Hochman, & Ariely, 2019). Credit and debit cards tend to facilitate impulsive buying more than cash due to the less tangible flow of money. Although many studies have used credit and debit card methods, there has been limited experimental research exploring the effects of payments via pay-later, e-wallet, and COD on impulsive buying and the pain of payment, particularly in the context of virtual application purchases. This study also aims to determine if the type of product purchased—whether groceries or fashion—affects impulsive buying and the pain of payment differently.

Payment methods are a critical factor in consumer behavior and decision-making processes. Research has shown that the design and implementation of payment methods can significantly impact customers experience and purchase decisions (Wu et al., 2020; Yu et al., 2022). Different payment methods, such as screen-based methods, can evoke specific feelings in consumers, although not necessarily lead to large tips or increased spending (Goh et al., 2021). Artificial intelligence payment methods can affect consumer product preferences and purchasing decisions (Bai, 2022). Additionally, the impact of payment methods on healthcare indicates that different payment methods can influence the quality of service received (Yang et al., 2022).

Moreover, studies by Hassan et al. (2020), Hossain (2019), Purwandari et al., (2022) have examined security perceptions, electronic payment technology adoption, and factors influencing switching intentions between payment methods. The researchers em-

phasize the evolving nature of payment systems, the role of trust in technology adoption, and the impact of external factors like the COVID-19 pandemic on payment preferences. Additionally, research by Su et al., (2021), Suryani et al., (2022), Zhang et al., (2019) has explored the antecedents of trust, security perceptions, and customer loyalty in the context of mobile payments and e-wallet transactions, underlining the importance of trust, security, and customer satisfaction in fostering loyalty and continuous use of mobile payment services.

Several studies have tested impulsive buying behavior in Indonesian e-commerce, including e-payment (Kusmaharani & Halim, 2020), pay-later (Cuandra, 2022; Parameswari & Ginny, 2022), and e-wallets (Tewu et al., 2022). It should be noted that the studies conducted only tested individual payment methods separately and did not evaluate their performance when combined. In previous research, payment methods were primarily studied using survey research methods, with limited experimentation. The systematic literature review results suggest that future research should examine how payment method plays a role in the pain of payment variable (Reshadi & Fitzgerald, 2023). With the rise of online shopping, choosing the right payment method is crucial. We can better understand the most effective by examining the differences between pay-later, cash-on-delivery, and e-wallet payment methods. Using an experimental method, this research promises to provide valuable insights that could help customers make informed decisions when shopping online.

This research aims to understand how the tangibility and immediacy of different payment methods and product types affect consumer behavior, especially regarding impulsivity and the emotional response to payments. By integrating insights from customer psychology, financial technology, and retail management, this multidisciplinary study seeks to provide a comprehensive understanding of payment methods' implications. It will evaluate both traditional and digital payment systems in e-commerce, analyzing their impact on consumer purchasing patterns and psychological responses within the retail sector.

# Literature Review

## *Impulsive Buying*

Consumer behavior characterized by spontaneous or unplanned purchases is referred to as impulsive buying. Impulsive buying refers to a consumer's tendency to make spontaneous, unreflective, and immediate purchases driven by emotional impulses and the promise of immediate gratification Chen et al., (2022), Aquino et al., (2020), Han et al., (2021). This behavior is characterized by a lack of rational self-control, leading individuals to buy items without thoughtful consideration of consequences. Impulsive buying is often prompted by emotional stimulation, the desire for immediate satisfaction, and the inability to resist sudden urges to purchase (Han et al., 2021; Sofi, 2018; Zaki & Hamid, 2021). Rook and Hoch (1985) introduced a seminal framework for understanding impulsive buying be-

havior, a cornerstone of impulsive buying research. They identified five elements in the impulsive buying process: (1) sudden or spontaneous desires, (2) a state of psychological imbalance, (3) psychological conflict and struggle, (4) reduced cognitive evaluation, and (5) a lack of consideration for the consequences. This aligns with the view of Verplanken and Herabadi (2001), who described impulsive buying as an unplanned purchase marked by immediate pleasure and desire, often followed by regret. Rook and Fisher (1995) noted that impulsive buying arises when consumers act on spontaneous and impulsive purchase ideas, typically triggered by the physical proximity to a product. Sharma et al. (2010) and Verhagen and Van Dolen (2011) discussed hedonic impulsive buying, characterized by a disregard for the post-purchase consequences and a lack of product information. According to Vohs and Baumeister (2004), impulsive buying behavior stems from weak consumer self-control, leading to negative psychological effects such as guilt and self-blame (Yi & Baumgartner, 2011). Impulsive buying is associated with hedonic shopping values such as fun, social interactions, novelty, escapism, and immediate gratification (Khan, 2022). It is driven by a strong urge or desire to acquire something immediately, often fulfilling emotive and hedonic desires (Zaki & Hamid, 2021).

The psychological underpinnings of impulsive buying encompass cognitive and affective dimensions. Cognitively, consumers display a diminished capacity for planning, deliberation, and spontaneous decision-making, including a failure to contemplate post-purchase consequences. Affectively, impulsive purchases are driven by overwhelming desire and excitement for the product, culminating in immediate gratification but often followed by regret.

In summary, impulsive buying is a complex phenomenon driven by emotional impulses, immediate gratification, and a lack of self-control. It encompasses various dimensions such as personality traits, emotional responses, cultural influences, and environmental factors that shape consumer behavior in the context of spontaneous and unreflective purchases. Impulsive buying, characterized by unplanned purchases, feelings of guilt, and financial waste, is a widespread phenomenon. These purchases inevitably lead to the payment process, where the psychological aspect of the pain of paying becomes significant. Understanding how consumers perceive the cost of products or services is crucial for developing effective marketing strategies. By investigating the pain of payment, we can gain deeper insights into consumer behavior, enabling us to tailor our offerings more appropriately.

## *Pain of Payment*

Zellermayer (1997) wrote that a consumer's decision to buy an item or service is not only influenced by considerations of the economic benefits that occur but also by unpleasant or painful feelings when paying. Negative psychological and emotional conditions when making payments are called the pain of payment. When spending money, negative feelings arise that affect consumer decisions and behavior. These negative feelings have been called pain of payment or a psychological reaction to parting with money (Zellermayer,

1997). Guilt and regret that occur can cause consumers to spend even more money (Prelec & Loewenstein, 1998).

Several factors contribute to the pain of payment. One such factor is the perceived fairness of the transaction, where a transaction is deemed unfair if a product or service is excessively expensive or does not offer sufficient value for its cost (Zellermayer, 1997). Another contributing factor is the concept of opportunity costs (Frederick, Novemsky, Wang, Dhar, & Nowlis, 2009), which refers to the perceived loss of potential gain from other alternatives when one option is chosen. The more consumers dwell on opportunity costs, the greater the pain of payment they perceive.

The impact of the pain of payment on consumer behavior and decision-making has been extensively researched in various contexts. Thomas et al. (2011) explored how credit card payments can increase unhealthy food purchases by influencing the pain of payment, particularly through chronic sensitivity to this pain. Shah et al. (2016) examined how increasing the psychological pain of payment can enhance post-transaction connections with products and brands. Gu and Chen (2023) investigated how payment notifications can trigger the pain of payment, leading to reduced subsequent shopping amounts. Kamleitner and Erki (2013) explored how different payment methods can influence the pain of payment, affecting price sensitivity and consumer behavior. Reshadi and Fitzgerald (2023) provided an overview of the pain of the payment construct and its effects on consumer behavior, highlighting the negative psychological effect experienced by consumers when they realize financial losses.

## *Payment Method*

A meta-analytic review by (Iyer et al., 2020) indicated that impulsive buying behavior is affected by several factors, including personality traits, motives, available resources, and marketing stimuli. This study explores the impact of payment methods as marketing stimuli on consumer comfort and convenience while shopping. Building on this, George and Krishnan (2022) proposed a conceptual model incorporating the pain of payment as a significant factor in consumer payment preferences, specifically regarding payment modes (methods). Research on payment methods covers a broad range of topics and disciplines, reflecting the diverse nature of how payments are made and their consequences. Studies have explored various areas such as consumer adoption of mobile payments (Patil et al., 2020) the impact of payment methods on market performance in mergers and acquisitions (Feng & Xie, 2020) the effect of payment schema on hospital efficiency (Zhang et al., 2019) and the relationship between payment methods and perceptions of ownership (Kamleitner & Erki, 2013). Moreover, investigations have been carried out on how the corpus of mobile payment service research (Verma et al., 2020), information disclosure and credit card repayment (Hamid & Loke, 2021) and how payment methods predict daily distress (Peña-Sánchez et al., 2014).

A survey by iPrice involving 1,000 Indonesian consumers revealed that bank transfers, e-wallets, and cash-on-delivery (COD) were the most commonly utilized pay-

ment methods for transactions (Devita, 2020). The preference for digital wallets stood out, with approximately 80% favoring this service and the pay-later method being chosen by about 50% more. This indicates that pay-later, e-wallets, and COD are more popular among Indonesian consumers today than credit cards.

Pay-later, a payment method allowing deferred payment, shares similarities with credit cards. Its advantages over credit cards include a simpler administrative process, accessibility to consumers aged 21 and above, and the requirement of only an Indonesian identity card for registration. The registration process for pay-later services is streamlined, omitting the need for bank verifications. The pay-later method, often associated with e-commerce transactions, has gained popularity due to technological advancements in payment systems (Kaihatu, 2023). This method allows consumers to make purchases and defer the actual payment to a later date, influencing consumer behavior and hedonics (Prelec & Loewenstein, 1998). The "book now, pay later" phenomenon, commonly seen in hotel bookings, has implications such as an increase in last-minute cancellations (Jang, Miao, & Chen, 2023).

The e-wallet, or digital wallet, is a financial technology that employs server-based electronic media as a means of non-cash payment (Mulyana & Wijaya, 2021). This concept mirrors that of a physical wallet, albeit in a digital format. E-wallets are more practical than physical wallets because transactions can be effortlessly conducted using a cellphone or another gadget (Shin, 2009). The study of Ming and Jais (2022) confirms that perceived usefulness, perceived risk, government support, and social influence are all positively related to users' attitudes toward e-wallets. The study recommends that governments collaborate with e-wallet providers to offer more incentives to attract new users and guide effective strategy implementation.

Cash-on-delivery is a payment method that enables consumers to pay at their doorstep. This method is also often described as post-payment, allowing consumers to receive goods before payment is made (Rouibah, 2015). Halaweh (2017) noted that the high risk associated with online purchases is a prevalent reason consumers opt for COD. Factors of trust and security concerning ordered goods also underpin the preference for COD. Unlike credit cards, which involve sharing user information, COD is considered more private since it does not require comprehensive data.

However, at this time, consumers can experience impulsive buying and the pain of payment even without dealing with real money (actual payments). Thomas et al., (2011), in one study on payment modes and shopping cart health - a field study, suggested that the use of non-cash payments has an effect on impulsive buying and shopping cart unhealthiness. Consumers have the potential to buy unhealthy food when using non-cash when shopping. This is because non-cash payments create less negative feelings than using cash. Consumers who use non-cash payments have higher impulsive responses than consumers who use cash using cash.

The impact of pay-later payment methods on impulsive buying behavior has garnered attention in academic and market research, revealing significant insights into con-

sumer spending patterns. According to studies, the pay-later option lowers the immediate psychological barrier to spending by deferring the payment, which can lead to an increase in impulsive purchases (Mehta, Chen, & Narasimhan, 2020). This separation between the acquisition of goods and the financial outlay required to obtain them manipulates the consumer's cost perception, making it easier to rationalize impulse buys. Compared to traditional credit mechanisms, the convenience and minimal procedural requirements associated with pay-later services further reduce the cognitive load on consumers, encouraging quicker and potentially less deliberate decision-making processes (Shah et al., 2016).

Furthermore, the psychological dynamics underpinning the pay-later method—such as the allure of immediate gratification—exacerbate the propensity for impulsive buying by allowing consumers to postpone confronting the economic consequences of their purchases (Narasimhan, Mehta & van Ittersum, 2019). Marketing strategies that promote pay-later options often play on the consumer's desire to access or own more expensive goods immediately, without the immediate financial burden, leading to aspirational purchases that may exceed their means. While these methods offer apparent short-term benefits by enhancing consumer access to goods and services, they may contribute to long-term financial stress and increased indebtedness, underlining the need for consumer education and regulation in the use of pay-later services (Dittmar, 2007; Thomas et al., 2011). Based on the description above, we propose the hypothesis one:

**H1a**: There are differences in impulsive buying among payment methods. Con sumers using pay-later have higher impulsive buying than e-wallet and COD users.

**H1b**: There are differences in impulsive buying between the grocery and product purchase types. Fashion shoppers are more impulsive than grocery shoppers.

**H1c**: There is an interaction effect of payment method and product type on impulsive buying.

When purchasing goods and services using e-commerce, consumers can experience the pain of payment before checking out from the chart and before making actual payments (Sheehan & Van Ittersum, 2018). Several studies have shown that paying using a credit card or cash impacts pain (Raghubir & Srivastava, 2008) and impulsive buying (Tinne, 2010; Thomas, Desai & Seenivasan, 2011).

The pay-later payment method significantly influences the pain of payment experienced by consumers. As detailed by Prelec and Loewenstein (1998), the concept of the pain of payment revolves around the immediate discomfort or negative emotions felt when parting with money. The deferred payment feature inherent in pay-later services tends to mitigate this discomfort, as it allows consumers to delay the financial impact of their purchases. This separation between the acquisition of goods and the realization of their cost can reduce the immediate psychological resistance to spending, potentially

leading consumers to underestimate their spending and overestimate their ability to pay in the future. As a result, the pay-later method can mask the true cost of transactions, leading to a reduced pain of payment at the time of purchase but possibly resulting in financial stress when the payment is due (Prelec & Loewenstein, 1998; Soman, 2001).

Moreover, the impact of the pay-later method on the pain of payment extends beyond the temporal dissociation between purchase and payment. It also interacts with psychological factors such as self-control, instant gratification, and financial planning. The ease of accessing credit through pay-later options may appeal particularly to those with a higher tendency towards impulsivity and a preference for immediate rewards, further diluting the pain of payment at the moment of purchase. However, this can lead to a cycle of spending and debt that exacerbates financial stress over time. Studies suggest that while pay-later schemes can enhance consumer purchasing power and immediate satisfaction, they also require careful management to avoid long-term negative consequences on financial well-being (Shah et al., 2016; Thomas et al., 2011).

Based on the pain of payment proposed by Zellermayer (1997) the concept refers to the discomfort consumers experience during financial transactions. Those who utilize the pay-later option experience lower payment pain than e-wallet users. This difference is attributed to cash flow visibility with e-wallets, which can be directly monitored through smartphones. E-wallet users tend to be more cautious in their spending. In contrast, consumers using pay-later services tend to spend more liberally, increasing their propensity for impulsive buying. Based on the description above, we propose hypothesis two:

**H2a**: There are differences in pain of payment in the pay-later, e-wallet, and COD payment methods. Consumers who use the COD method have lower pain of payment than those who use pay later and e-wallet.

**H2b:** There are differences in pain of payment for the groceries and fashion product purchase types. Consumers making fashion purchases have less pain of payment than those buying groceries.

**H2c**: There is an interaction effect of payment method and product type on pain of payment.

The conceptual framework of this study can be seen in Figure 1.

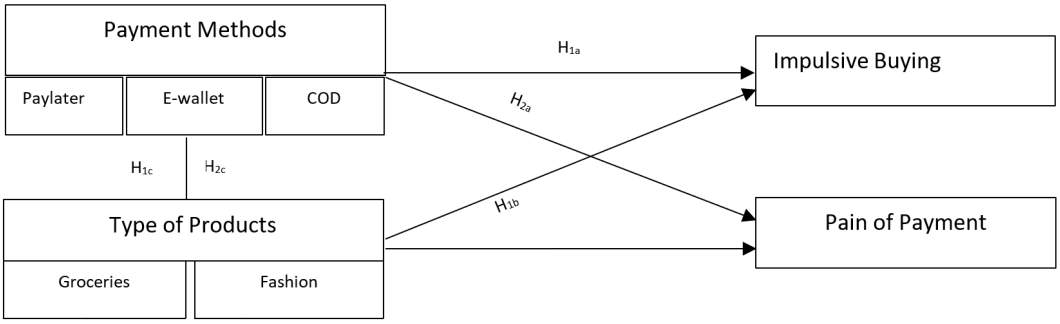


**Figure 1.** Conceptual Framework

# Methodology

This experimental study aims to provide valuable insights into consumer behavior by simulating real-life situations and combining self-reported data with behavioral measurements. The findings of this research could help businesses better understand their customers and optimize their strategies to meet their needs effectively. The purpose of this experimental study was to examine the differences in the effect of payment method and product type on impulsive buying and the pain of payment. The research questions of this study were:

1. Do different payment methods have different effects on impulsive purchases and pain-of payment?
2. Do different types of products have different effects on impulsive buying and pain of payment?
3. Is there an interaction effect of payment method and product type on impulsive purchases and pain of payment?

## *Variables and Experiment Design*

This study measures the effect of payment method and product type on impulsive buying and pain of payment. The independent variables consist of payment method and product type. The payment method experimental stimulus consists of three group variations: pay later, e-wallet, and COD. Product type experimental stimulus consists of two variations: groceries and fashion. The variables measured are impulsive purchases and pain of payment. This study also controls for gender variables and has experience in paying cashless or paying later. Participants included in this study were only female because men were considered less impulsive when shopping. Based on the research of Dittmar et al. (1995), Verplanken and Herabadi (2001), Wood (1998), Kurt et al. (2022), Cavazos-Arroyo and Máynez-Guaderrama (2022), Zaman et al., (2023), Chetioui and El Bouzidi (2023) the data suggests that women tend to exhibit a higher tendency towards impulsive buying than men. The experimental design in this study was a between-participants design. This experimental research used a 3 x 2 between-participants design. Participants were randomly assigned to one of six groups: pay later for groceries, e-wallet for groceries, COD for groceries, pay later for fashion, e-wallet for fashion, and COD for fashion.

## *Participants*

Participant recruitment was carried out through manual announcements and social media. Before beginning data collection, we used G*Power 3.1.9.6 analysis to determine the appropriate sample size for our study. Assuming a medium effect size of 0.4, a power of 0.95, a significance level of 0.05, and six groups for an ANOVA analysis. The results of our analysis indicate that a minimum of 130 participants is the minimum sample size. Participants who agreed and confirmed their participation in the experiment were randomly assigned to six experimental groups. One hundred eighty participants participated in this study, but only 162 could be analyzed. Eighteen participants who did not comply with

the manipulation check were excluded from this study. Participants were divided into six groups: pay-later groceries (N = 23), e-wallet groceries (N = 25), COD groceries (N = 28), pay-later fashion (N = 30), e-wallet fashion (N = 28), and COD fashion (N = 28).

### *Procedures*

This experimental study divided the experimental group into six groups: pay-later groceries, e-wallet groceries, COD groceries, pay-later fashion, e-wallet fashion, and COD fashion. Experiments were carried out in an experimental room. When they arrived, participants read the informed consent sheet first and filled out the identity sheet. After filling in the identity sheet, participants were directed to shop online via cell phone by clicking on one of the six application links provided according to the participant's experimental group. Participants were asked to shop and select items available online to the total shopping screen. After shopping online, participants were asked to fill out an impulsive buying scale. At the end of the experiment, participants filled out pain of payment and manipulation check sheets. Participants were asked to shop on the Alfamidi grocery shopping and Shopee fashion products applications. The instructions on the initial screen for each group are shown below:

### *Pay-Later Group: Groceries/Fashion*

"Please select grocery/fashion product items in the online application. You can choose these fashion products because your account has a non-cash balance of IDR 250,000. Because you chose the pay-later facility, you can spend more than IDR 500,000."

### *E-Wallet Group: Groceries/Fashion*

"Please select grocery/fashion product items in the online application. You are free to choose these fashion products because you have an e-wallet balance of IDR 250,000 in your account."

### *COD Group: Groceries/Fashion*

"Please select grocery/fashion product items in the online application. You are free to choose these fashion products because you have IDR 250,000 in cash. The products you buy will be paid for when you get home using COD."

### *Pilot Study*

The purpose of the first pilot study was to determine the limit of balance on pay-later and e-wallet accounts, as well as the most frequently used product categories for online purchases. The pilot study, conducted with 33 participants, revealed that the account balance limit is Rp 250,000. The product categories that are most commonly used for online purchases are groceries (45.5%), fashion (42.4%), electronic devices (3%), household appliances (6.1%), and books (3%).

Based on the results of the first pilot study, the researcher created a stimulus design in the form of an application display for the second pilot study. The objective of the second pilot study was to test if the participants well understood the instructions and appearance of the application. On a scale of 1 to 5, the average participant rated the instructions as easy to understand (M = 4.4) and the appearance of the application as easy to understand (M = 4.0).

### *Material Informed Consent*

The consent form from the participants for voluntarily participating in the experiment was included in the informed consent sheet. This sheet included an explanation to participants about the objectives, procedures, and participants' rights to participate in experimental research or not. This section also conveyed the responsibility of the researcher in case the experimental stimulus received had an uncomfortable effect on the participants.

### *Experiment Stimulus: Payment Methods and Product Type*

The experimental stimulus was provided to participants in manipulating the payment methods of pay later, e-wallet, COD, and the product types of groceries and fashion. The experimental stimulus was presented in the Alfamidi and Shopee shopping application links. The initial screen was a welcome screen, the second screen gave experiment instructions, and the third screen entered the Alfamidi or Shopee application. This experimental stimulus study pilot was tested on several participants to measure their understanding of the instructions displayed.

In the payment method experimental stimulus, participants were instructed to shop using the pay-later, e-wallet, or COD method. Participants were given a specific price limit and the autonomy to select the grocery or fashion product of their preference.

### *Impulsive Buying Scale*

Assessment of impulsive buying was done after experimental manipulation in each group. This scale consisted of nine items based on the cognitive and affective aspects of impulsive buying developed by Verplanken and Herabadi (2001). Responses ranged from 1 (strongly disagree) to 5 (strongly agree). The process to evaluate the content validity of the scale involved seeking the professional judgment of three experts in industrial psychology and psychometrics. The experts used Aiken's V score to measure the scale's content validity. A score of 0.75 to 0.83 indicates a high level of content validity. The impulsive buying scale had good internal consistency at $\alpha = 0.87$. An example of item is: "I cannot hold back when choosing grocery/fashion products."

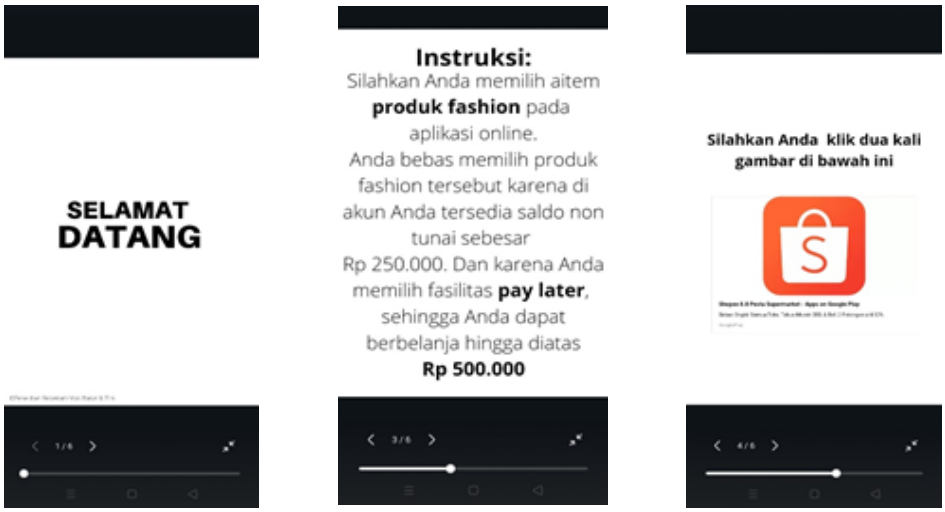


**Figure 2.** Example Screen Display on the Pay-later Fashion Group

### *Pain of Payment Scale*

Measurements were conducted to assess the pain of payment among the participant group using the pain of payment scale. The scale captured participants' emotional responses following a purchase, with responses ranging from 1 (very unhappy) to 5 (very happy). This range provides ample flexibility in capturing response variations and effectively distinguishes different reaction levels to the pain of payment variable. Higher scores indicate greater pleasure, whereas lower scores signify increased pain in payment. There was one item in this section, for example: "How did you feel after spending money while shopping?".

## Results

### *Demographic*

Participants were online consumers who were 21-34 years old (23.8% aged 22). Participants came from various work backgrounds: employees (17%), entrepreneurs (18%), nurses (46%), teachers (29%), students (31%), and civil servants (3%). The participants' monthly income varied from less than 1.5 million to above 4.5 million IDR. The special characteristics of participants in this study were that they had experience making online purchases and had made payments in the form of pay later, e-wallet, or COD.

### *Manipulation Check*

A manipulation check is an essential procedure that verifies the appropriateness of the independent variable administered to each participant group. By conducting a manipulation check, researchers can enhance the study's internal validity, ensuring that the manipulation of the independent variable causes changes observed in participants' responses. The manipulation check in this study comprised a single item designed to confirm whether participants perceived and assessed the manipulation as intended, according to

the experimental conditions established by the researcher. The specific question asked in the manipulation check was, "What kind of payment did you use earlier?" The response options provided were: (1) pay later, (2) e-wallet, and (3) COD (Cash-On-Delivery).

### *Impulsive Buying Based on Payment Method and Product Type*

An ANOVA test showed that there was no difference in impulsive purchases based on the payment method ($F(2, 161) = 1.477$, $p = 0.231$). The three types of payment methods did not show a significant average difference (Mpaylater = 3.15, SD = 0.764; Me-wallet = 2.91, SD = 0.667; MCOD = 2.91, SD = 0.64). This result rejects the H1a hypothesis. There were differences in the participants' impulsive scores based on the type of product ($F(1, 161) = 29.370$, $p = 0.001$), with fashion showing an average score of impulsive purchases higher than that of grocery products (Mfashion = 3.24, SD = 0.641; Mgroceries = 2.70, SD = 0.644). Thus, H1b is accepted. An interaction test of differences in impulsive purchases seen from the payment method and product type showed significant results ($F(2, 162) = 3.4$, $p = 0.036$); thus, Hypothesis H1c is accepted. The average impulsive buying in each group showed differences (see Table 2).

### *Pain of Payment Based on Payment Method and Product Type*

An ANOVA test showed that there were differences in pain of payment based on the payment method ($F(2, 161) = 8.936$, $p = 0.001$). Using COD was considered less painful (Mpaylater = 2.06, SD = 0.818; Mewallet = 2.55, SD = 0.992; MCOD = 2.79, SD = 0.948). This result supports Hypothesis H2a. There were also differences in participants' pain of payment scores based on product type ($F(1, 161) = 6.886$, $p = 0.010$). When viewed from the type of product, fashion showed a lower average pain of payment score than grocery products did (Mfashion = 2.63, SD = 0.934; Mgroceries = 2.29, SD = 0.977). Therefore, H2b is accepted. An interaction test of differences in pain of payment by payment method and product type together showed significant results ($F(2, 162) = 4.523$, $p = 0.012$); thus, Hypothesis H2c is accepted. Using the COD payment method to purchase fashion products was considered the lowest pain of payment, while pay-later payments of fashion products were considered the highest pain of payment. The mean pain of payment in each group showed a difference (see Table 3).

**Table 2.** Mean Difference in Impulsive Buying

| Payment Methods | Type of Products | M | SD |
|---|---|---|---|
| Pay-later | Groceries | 2.64 | 0.629 |
| | Fashion | 3.54 | 0.621 |
| E-wallet | Groceries | 2.77 | 0.744 |
| | Fashion | 3.04 | 0.572 |
| Cash-on-Delivery | Groceries | 2.69 | 0.575 |
| | Fashion | 3.13 | 0.634 |

**Table 3.** Mean Difference of Pain of Payment

| Payment Methods | Type of Products | M | SD |
|---|---|---|---|
| Pay-later | Groceries | 2.17 | 0.778 |
| | Fashion | 1.97 | 0.850 |
| E-wallet | Groceries | 2.12 | 1.054 |
| | Fashion | 2.93 | 0.766 |
| Cash-on-Delivery | Groceries | 2.54 | 1.036 |
| | Fashion | 3.04 | 0.793 |

## *Total Consumer Spending*

We have carried out supplementary analysis to determine whether there were any variances in the total online shopping expenditure across multiple payment methods and product types. An ANOVA test showed that there were differences in total spending based on the payment method ($F(2, 161) = 47{,}092$, $p = 0.001$). The payment method using pay later shows the highest total spending (Mpaylater = Rp 319,000; Mewallet = Rp 148,683; MCOD = Rp 154,522). The different types of products showed a difference in the total expenditure of participants ($F(1, 161) = 48{,}542$, $p = 0.001$), with fashion showing a higher total expenditure than grocery products (Mfashion = Rp 256,362; Mgroceries = Rp 149,915). An interaction test of differences in total spending by method of payment and type of product together showed significant results ($F(2, 162) = 27.419$, $p = 0.001$). The average total spending in each group showed a difference (see Table 4).

**Table 4.** Mean Difference of Pain of Payment

| Payment Methods | Type of Products | M | SD |
|---|---|---|---|
| Pay-later | Groceries | 175.004 | 120266.21 |
| | Fashion | 429.403 | 135907.69 |
| E-wallet | Groceries | 128.584 | 63375.49 |
| | Fashion | 166.629 | 83761.72 |
| Cash-on-Delivery | Groceries | 148.351 | 69509.57 |
| | Fashion | 160.694 | 48258.01 |

## *Consumer Shopping Time*

Additional analysis was also carried out to see whether there was a difference in shopping time spent regarding payment method and product type. An ANOVA test showed no difference in shopping time based on the payment method ($F(2, 161) = 1.642$, $p = 0.197$). The three types of payment methods did not show significant differences in shopping time (Mpaylater = 252.47 seconds; Mewallet = 205.75 seconds; MCOD = 246.83 seconds). There was a difference in the participants' shopping time ($F(1, 161) = 12.67$, $p = 0.001$), with grocery products showing a longer shopping time than fashion products (Mfashion = 198.31 seconds; Mgroceries = 277.02 seconds). The difference in shopping time between grocery and fashion products was around 78 seconds. An interaction test of differences in

shopping time by payment method and product type together showed significant results ($F(2, 162) = 4.929$, $p = 0.008$). The average spending time in each group showed a difference (see Table 5).

**Table 5.** Mean Difference of Pain of Payment

| Payment Methods | Type of Products | M | SD |
|---|---|---|---|
| Pay-later | Groceries | 250.39 | 204.68 |
| | Fashion | 254.06 | 86.88 |
| E-wallet | Groceries | 244.40 | 148.11 |
| | Fashion | 171.25 | 139.69 |
| Cash-on-Delivery | Groceries | 328.03 | 178.66 |
| | Fashion | 165.64 | 64.04 |

**Table 6.** ANOVA Test of Hypothesis

| Independent Variable | Dependent Variable | F | p | Results |
|---|---|---|---|---|
| Payment Methods | Impulsive buying | 1.477 | 0.231 | Rejected |
| Type of Products | Impulsive buying | 29.370 | 0.001 | Accepted |
| Payment Methods & Type of Products | Impulsive buying | 3.4 | 0.026 | Accepted |
| Payment Methods | Pain of payment | 8.936 | 0.001 | Accepted |
| Type of Products | Pain of payment | 6.886 | 0.010 | Accepted |
| Payment Methods & Type of Products | Pain of payment | 4.523 | 0.012 | Accepted |
| Payment Methods | Total spending | 47.092 | 0.001 | Accepted |
| Type of Products | Total spending | 48.542 | 0.001 | Accepted |
| Payment Methods & Type of Products | Total spending | 27.419 | 0.001 | Accepted |
| Payment Methods | Shopping time | 1.642 | 0.197 | Rejected |
| Type of Products | Shopping time | 12.67 | 0.001 | Accepted |
| Payment Methods & Type of Products | Shopping time | 4.929 | 0.008 | Accepted |

# Discussion

This study examined differences in the effects of pay later, e-wallet, and COD payment methods and in the groceries and fashion product types on impulsive buying and pain of payment. The experimental results showed that differences in payment method had no significant effect on impulsive buying, whereas differences in product type had a significant effect on impulsive buying. The interaction effect between payment method and product type on impulsive buying was shown to be significant. Consumers who made payments

using the pay later, e-wallet, or COD method showed no difference in impulsive buying. The results of this study are different from research conducted by Omar, Rahim, Wel, and Alam (2014), who argued that non-cash payments are easier and can eliminate the use of money directly when buying goods, thereby influencing consumer impulsive behavior. The difference in the results of this study is probably because the pay later, e-wallet, and COD payment methods are only channels that provide convenience for consumers but do not affect the behavior of participants in planned buying or impulsive buying. Participants' impulsive behavior was above average when using these three payment methods. In other words, these results are influenced by the characteristics of the participants. Zhang et al. (2020) argued that consumers with rational characteristics will be low in impulsive purchases because they tend to evaluate needs.

Impulsive or unplanned buying behavior tends to occur more in products that are secondary in nature or lifestyle-oriented, such as fashion, than in primary products. Thomas, Desai, and Seenivasan, (2011) found a similar result, showing that impulsive buying occurs more with unhealthy foods than with healthy foods. The consumers will continue to prioritize daily necessities because they are essential needs that must be met and planned for regularly. The results of the current study showed that there is an interaction effect of payment method and product type on impulsive buying, with the highest effect occurring in the pay later method for fashion products. Pay-later fashion products provide convenience in delaying payments, thus providing convenience for consumers, which results in low self-control.

The results of the second hypothesis showed that there were differences in pain of payment between the pay-later payment method and e-wallet and COD. Pay later was considered by participants to cause higher pain in paying because the characteristics of pay later are similar to credit cards, namely, encouraging consumers to accumulate bills, which has an impact on pain in paying at the end of a payment cycle. The lower the self-control in using the pay-later method, the higher the pain of payment. On the other hand, the COD method was considered the lowest in pain in paying, because it allows buyers to check product quality before paying. Halaweh (2018) wrote that COD is a payment method that has the lowest level of risk for consumers, without restrictions on the price of goods. In terms of product type, participants rated grocery products as having a higher pain of payment compared to fashion because of the nature of grocery products, which are primary needs and constitute basic needs. Spending money for basic needs is an obligation that must be fulfilled by every individual, as opposed to fashion products, which are secondary in nature and whose purchase is driven by hedonic motives. Hedonic motives in shopping allow individuals to be more emotionally positive than shopping for utilitarian grocery products.

The additional analysis results in this study showed that the highest average total spending occurred in the participant group who purchased fashion products using the pay-later method. This is in line with the highest impulsive buying score on the fashion product pay-later method. Impulsive buying, measured using self-reports, showed results

that are consistent with the results of the total shopping contained in the shopping application basket. The pay-later method was shown to influence impulsive buying and to have a higher pain level than other payment methods. The data highlight significant differences in consumer spending based on payment methods. Research indicates that consumers who use pay-later services are more inclined to purchase non-essential items (like fashion), which can lead to patterns of unsustainable consumption (Fook & McNeill, 2020). E-wallets are equipped with features designed to help users monitor their spending and manage their finances efficiently. Many of these applications offer tools such as transaction histories, budgeting aids, and spending alerts, which can encourage users to develop better financial habits (Nalurita et al., 2022).

In addition to total spending, the additional analysis also tested the time to complete purchases. This study showed that payment method and product type interacted with shopping time. The longest average shopping time occurred in the grocery product group. Because grocery products are a primary need with a wider variety of sub-products, it can take more time for consumers to choose than secondary products like fashion. COD is the most time-consuming method for grocery transactions, which could reflect the physicality and verification processes involved in such transactions. In contrast, COD for fashion purchases is the most efficient, possibly indicating better logistical streamlining for higher-value items.

The control theory of the self-regulation model, developed by Carver and Scheier (1998), can explain the impulsive behavior experienced by consumers while shopping. This theory explains how consumers regulate their actual and desired circumstances. Impulsive happens whenever there is a mismatch between the actual and desired states. The payment company provides flexible options for consumers to achieve their desired state. Pay-later with fashion products is the payment method that most indulges consumers in using hedonic products to achieve the desired state first, rather than the actual state. The difference between the actual self and the ideal self is called self-discrepancy. The presence of self-discrepancy causes consumers to feel pain while paying because the ideal self is perceived first than the actual self. The results of the study contribute to e-commerce businesses in Indonesia by showing the differences in various payment methods. When companies make it easier for consumers to use pay-later methods, it will be easy to influence consumers' decisions to buy secondary products such as fashion.

# Conclusion

This study found varying results in testing the effect of payment method and product type on impulsive buying, pain of payment, total consumer spending, and shopping time. The pay-later method for fashion products was shown to have the highest impulsive buying score because it allows consumers to maximize spending on products with hedonic value, such as fashion products. This also supports the result that using pay later to purchase fashion products affected not only consumers' impulsive buying but also caused partici-

pants to exceed the spending limit or total spending planning that had been determined in the experimental stimulus. Regarding positive emotional impact, the COD method for fashion products was considered the most pleasant and least painful in payment because COD for fashion products is not only driven by hedonic motives in buying and provides convenience and security for consumers in making payments after the goods are received.

An interesting result of this study was that the COD method for grocery products was shown to have a joint effect on shopping time. Grocery products involving basic needs have several variations from head to toe, causing consumers to spend more time shopping. The COD method for groceries was shown to cause participants to spend more time shopping, even though COD in this study was also shown to be the lowest in causing pain in paying. This result may have been influenced by the fact that COD is a payment method available for consumers who are not interested or who are not yet familiar with online payment types such as e-wallets. Several participants in the COD groceries group were over 26 years old, which was older than the average age of the participants in the pay later and e-wallet groups, so they were not as familiar with online payment technology.

## Limitation

In future research, it is important to control for demographic differences. It would also be useful to consider the impact of different generations on online shopping habits and explore other payment methods, such as debit cards. It is important to consider the limitations of using self-report when measuring pain of payment. This method can introduce subjectivity bias and social desirability. Future research should consider non-self-report methods such as physiological measurements to improve the accuracy of the pain of payment measurements.

These findings contribute to the growing body of literature on impulsive buying and pain of payment, suggesting that the context of payment methods and type of product, significantly affects these dynamics. Future research could explore these dynamics in other product categories or real-world settings to validate and extend these findings. Future research should continue exploring the psychological underpinnings of consumer behavior in the digital age, providing insights that can benefit both retailers and consumers.

## The Implication of the Study

The results of this study have implications for e-commerce, showing the need to focus on appropriate payment methods and product types. Understanding that payment methods can significantly influence consumer behavior, retailers should consider offering various payment options to cater to different consumer preferences. Tailoring marketing strategies to highlight the convenience and security of COD for high-hedonic-value or flexibility of pay-later options could enhance consumer satisfaction and potentially increase

sales. Impulsive shopping behavior increases profits for companies but not for consumers. Several payment methods are available for consumers to shop conveniently without paying in person. However, consumers should also be aware of the potential negative impacts associated with these methods. These include increased debt, additional costs, impulsive buying, dependency, and the potential misuse of personal data. It is important for consumers to consider these factors before using alternative payment methods, without having to pay in person. Companies should encourage the pay-later payment method by paying more attention to bonuses, rewards, and shopping points for consumers who use pay-later. Bonuses, rewards, and shopping points can compensate for the perceived cost of purchases, thereby minimizing the pain consumers feel when making purchases. Policymakers and consumer advocates might be interested in this finding, highlighting the potential for certain payment methods to encourage overspending. This could lead to calls for clearer regulation of the pay-later schema and more transparent marketing to ensure consumers know the implications of their payment choices.

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# Appendix

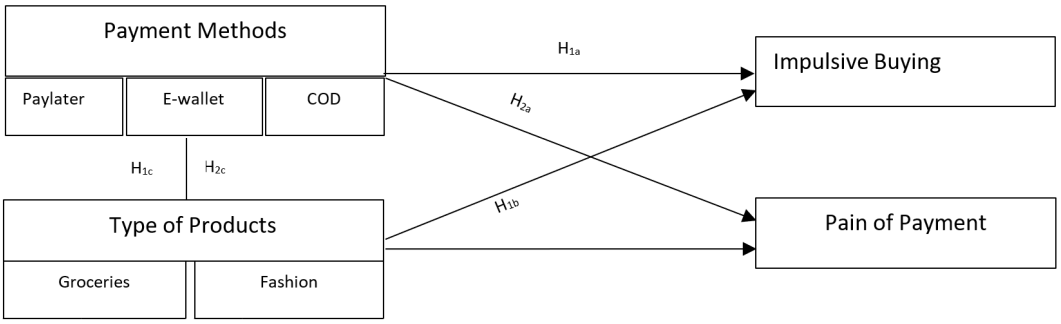


**Figure 1.** Conceptual Framework

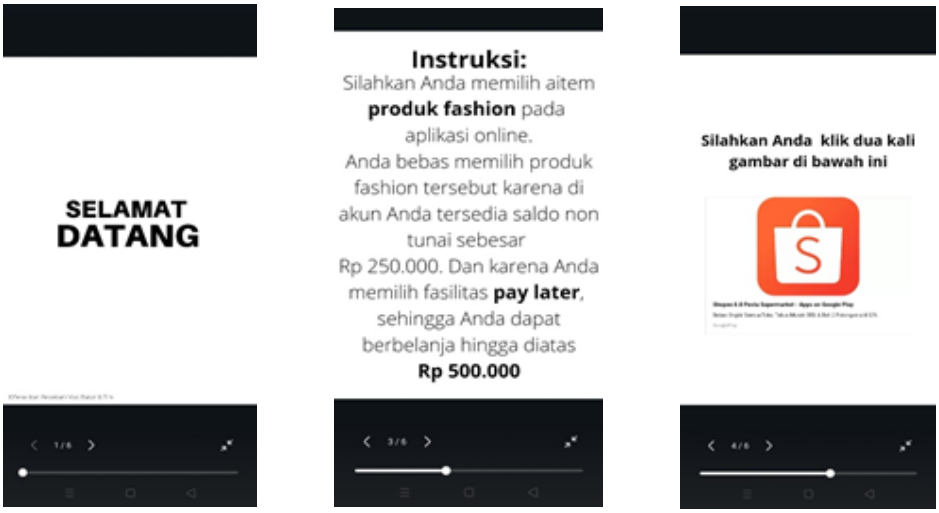


**Figure 2.** Example Screen Display on the Pay-later Fashion Group

**Table 1.** Top 10 The Most Internet Users In Asian Country

| Rank | Country | Users |
|---|---|---|
| 1 | China | 989.08 M |
| 2 | India | 755.82 M |
| 3 | Indonesia | 212.35 M |
| 4 | Japan | 118.63 M |
| 5 | Bangladesh | 116.14 M |
| 6 | Pakistan | 100.68 M |
| 7 | Philippines | 89.10 M |
| 8 | Vietnam | 74.75 M |
| 9 | Thailand | 57.00 M |
| 10 | South Korea | 49.42 M |

**Table 2.** Mean Difference in Impulsive Buying

| Payment Methods | Type of Products | M | SD |
|---|---|---|---|
| Pay-later | Groceries | 2.64 | 0.629 |
| | Fashion | 3.54 | 0.621 |
| E-wallet | Groceries | 2.77 | 0.744 |
| | Fashion | 3.04 | 0.572 |
| Cash-on-Delivery | Groceries | 2.69 | 0.575 |
| | Fashion | 3.13 | 0.634 |

**Table 3.** Mean Difference of Pain of Payment

| Payment Methods | Type of Products | M | SD |
|---|---|---|---|
| Pay-later | Groceries | 2.17 | 0.778 |
| | Fashion | 1.97 | 0.850 |
| E-wallet | Groceries | 2.12 | 1.054 |
| | Fashion | 2.93 | 0.766 |
| Cash-on-Delivery | Groceries | 2.54 | 1.036 |
| | Fashion | 3.04 | 0.793 |

**Table 4.** Mean Difference of Pain of Payment

| Payment Methods | Type of Products | M | SD |
|---|---|---|---|
| Pay-later | Groceries | 175.004 | 120266.21 |
| | Fashion | 429.403 | 135907.69 |
| E-wallet | Groceries | 128.584 | 63375.49 |
| | Fashion | 166.629 | 83761.72 |
| Cash-on-Delivery | Groceries | 148.351 | 69509.57 |
| | Fashion | 160.694 | 48258.01 |

**Table 5.** Mean Difference of Pain of Payment

| Payment Methods | Type of Products | M | SD |
|---|---|---|---|
| Pay-later | Groceries | 250.39 | 204.68 |
| | Fashion | 254.06 | 86.88 |
| E-wallet | Groceries | 244.40 | 148.11 |
| | Fashion | 171.25 | 139.69 |
| Cash-on-Delivery | Groceries | 328.03 | 178.66 |
| | Fashion | 165.64 | 64.04 |

**Table 6.** ANOVA Test of Hypothesis

| Independent Variable | Dependent Variable | F | p | Results |
|---|---|---|---|---|
| Payment Methods | Impulsive buying | 1.477 | 0.231 | Rejected |
| Type of Products | Impulsive buying | 29.370 | 0.001 | Accepted |

| Independent Variable | Dependent Variable | F | p | Results |
|---|---|---|---|---|
| Payment Methods & Type of Products | Impulsive buying | 3.4 | 0.026 | Accepted |
| Payment Methods | Pain of payment | 8.936 | 0.001 | Accepted |
| Type of Products | Pain of payment | 6.886 | 0.010 | Accepted |
| Payment Methods & Type of Products | Pain of payment | 4.523 | 0.012 | Accepted |
| Payment Methods | Total spending | 47.092 | 0.001 | Accepted |
| Type of Products | Total spending | 48.542 | 0.001 | Accepted |
| Payment Methods & Type of Products | Total spending | 27.419 | 0.001 | Accepted |
| Payment Methods | Shopping time | 1.642 | 0.197 | Rejected |
| Type of Products | Shopping time | 12.67 | 0.001 | Accepted |
| Payment Methods & Type of Products | Shopping time | 4.929 | 0.008 | Accepted |