

MOBILE PROMOTION: PUSH-NOTIFICATION BY E-COMMERCE APPS, ARE YOU BEING IMPULSIVE WHEN YOU GET A PROMO?

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ABSTRACT

Mobile promotions are becoming increasingly important to marketers. Never before have marketers had instant access to so many people, as more and more people use their phones as remotes for their everyday lives. As a result, marketing through mobile promotion can be a way for marketers to take advantage of this technology. One way to use mobile promotion can be done through push notifications to reach interaction and engagement with consumers. This study describes the effect of price discounts and scarcity on impulse buying tendencies which are moderated by availability of money and availability of time. Data was collected from 236 respondents who are consumers of five e-commerce applications in Indonesia. In evaluating our proposed research, we used SEM to validate hypotheses, CFA and the Alpha Cronbach Coefficient to evaluate item validity and reliability. The results of the study show that discount prices and scarcity have a positive effect on impulse buying tendencies. Although discounts and scarcity have a positive effect on impulse buying tendencies, situational characteristics through availability of money and availability of time do not moderate the positive effect of impulse buying tendencies. These findings provide theoretical implications and understanding of patterns of impulse buying tendencies in mobile promotions through the use of push notifications.

Keywords: *mobile promotions, push notifications, impulse buying tendency, SEM, CFA, Alpa Cronbach.*

INTRODUCTION

In this digital age, e-commerce is advancing, and cellular networks are significantly altering consumer behavior and marketing patterns. Operators can engage consumers by providing a pleasurable shopping experience and by running promotional campaigns on mobile applications that can be accessed at any time and from any location. Thus, consumers have

the freedom to shop as they please, which results in an increase in impulse purchases and a pattern of change in cellular shopping behavior. According to Oberlo The number of online shoppers has increased in recent years. There will be 80 million more digital buyers in 2023 than there were in 2022, a 3.1% year-over-year growth (Oberlo, 2023).

When compared to traditional methods of shopping, the appearance of that kind of

information technology innovation enables opportunity to grow and achieve a ten- to twentyfold increase in potential (Lestari, 2019). Due to its large buyer, Indonesia appears to be the Southeast Asian country with the most online shopping transactions (Anggraeni, 2018). Indonesia currently has 167 million smartphone users, or 89 percent of the total population (Media Indonesia, 2021). Indeed, as mobile internet permeation exceeds that of computer internet, some consumers are shifting away from computers and toward mobile devices. In the broadest sense, mobile promotion is any information sent via a mobile device that involves a value exchange in order to influence certain behaviors in the near term. Mobile promotions can be sent to consumers via short message services (SMS), email, in-app messages, social media, and push or pull notifications.

Notifications are a commonly used technology that enables direct interaction with users within a mobile application (Bidargaddi, 2018). Thus, when consumers are contemplating a purchase, mobile promotion enables a more effective option of encouraging unplanned purchases or eliciting the finished impulse to purchase a product (Andrews et al,

2016). Research found, more than half of consumers have downloaded apps from their favorite

brands and 68% have enabled push notification alerts (Relander, 2014). As a result, push notifications are intended to boost not only customer loyalty, but also spontaneous purchasing (Hoffman 2014).

Previous study has shown that push notifications boost the number of active users, or at the very least the number of people who utilize mobile applications (Bidargaddi, 2018).

Push notifications can persuade 65% of active users and 48% of inactive users to perform transactions within the application (Shukairy, 2020). When push notifications are used for marketing and promotion, e-commerce businesses can benefit (McLean, 2020). On the other hand, marketing stimulation discovered that external environmental factors have an effect on consumers' personal characteristics and emotional status. Impulsive purchasing via e-commerce is gradually being recognized as a legitimate practice (Chan et al. 2017; Chih et al. 2012; Lee et al. 2012; Lin and Lo 2016; Liu et al. 2013). As a result of impulsive buying, environmental factors influence their consumers' behaviors (Liu et al., 2013; Verhagen and van Dolen, 2011).

Previous research has discovered that the availability of time and money might impact consumer behavior, leading to a

proclivity to make impulsive purchases (Beatty and Ferrell,

1998). As environmental variables impact online platforms, several sorts of marketing stimuli in the consumer environment (such as hungry marketing methods, various sorts of incentives,

and discounts) all lead to the development of impulsive purchase behavior. On the other hand, environmental variables affecting online platforms, as well as numerous sorts of marketing stimuli in the consumer environment (discounts and different sorts of incentives), can all contribute to impulsive purchasing behavior among consumers (Dawson and Kim, 2009; Campbell and Diamond, 1990). Both of these strategies can be used as marketing stimuli to assess the effect of these promotions on the impulse purchasing trend. Promotions are classified as either "price promotions" or "non-price promotions." The term "price discount" refers to a temporary reduction in the price of a service or product. (Chen et al., 1998). In other words, scarcity is a form of strategic limitation that refers to the deliberate restriction of an offer, time period, or other terms of purchase for a product in order to communicate to consumers that their ability to purchase the product is limited (Aggarwal et al., 2011). Andrews et al (2016) Consumer interest is piqued through messages approximately product shortage and

reductions, according to a study of impulsive buying on social industrial structures. This promotion strategy has an effect on the product's attractiveness for consumers.

This study uses promotional tools classified as "non-price promotion" and "price promotion". This field of study has research gaps, particularly in the context of e-commerce impulse purchases. Nusair et al (2010) use the term price promotion that emphasizes discount price in this study and it employs promotional incentives that emphasize value and scarcity in the non-price promotion section. (Parker and Lehmann, 2011) The key goals of this research are as follows: the effect of scarcity and discount prices on the impulse buying tendency in e-commerce, and the role of situational factors such as money and time availability as moderators. (Zhou and Wong, 2004). This study is described in a way the literature is reviewed together with the formation hypothesis and research framework. After that, the research methodology consists of sampling procedures and analysis techniques. Additional results, conclusions, and testing reports for preview considerations. The final section consists of a dialogue of the findings, managerial and theoretical implication.

LITERATURE REVIEW & HYPOTHESIS DEVELOPMENT

1. Mobile promotion-Push notification

Mobile promotions are messages sent to a mobile user in return for a value exchange, with the objective of inducing a desired action in the short term (M. Andrews et al, 2016). One of the critical components of mobile ads is that it offers an instantaneous trade of value to the consumers (Sankar & Balasubramanian, 2009). A value exchange, such as a price reduction, differs from mobile commercials, which, like a mobile banner ad displaying merely a brand name, aim to affect brand perceptions and build brand equity over time (Grewal et al., 2016).

Mobile ads, by hitting customers, provide a more convenient alternative method of inducing unplanned transactions or triggering the final drive to buy. It can be communicated to customers via social media, short messaging, in app-messaging, email, pull or push notifications. Especially, push notifications are becoming a more popular choice for marketers, as they appear to trigger impulse purchases in the consumer mindset. Asian customers are more used to advertisers sending push notifications than consumers in Europe or the Americas (M. Andrews et al, 2016).

2. Impulse Buying Tendency

In keeping with Beatty and Ferrell (1998), impulsive shopping occurs "without purpose prior to buying, both to purchase a

selected product category or to complete a selected shopping challenge." Adelaar et al (2003) investigated the impact of several media formats on consumer impulsive buy intentions (textual content, nevertheless photos, and track motion pictures). Moreover, there is compelling proof that customers' proclivity for impulse purchases varies by individual (Hausman, 2000; Herabadi and Verplanken, 2001). Along with previous studies and discussion, approximately impulse buying tendency may be defined as a man or woman's proclivity to make immediate, accidental, and irrational purchases (Rook and Fisher, 1995; Rook and Gardner, 1993; Beatty and Ferrell, 1998).

3. Promotional Campaigns

Marketing stimuli in consuming contexts, according to Dholakia's (2000) consumption impulse generation and enhancement model, increase the chance of consumers engaging in impulsive purchase behaviors. If the discount is bigger or the salesmen and experts sound more convincing, consumers are more inclined to make an impulse buy. Kim et al. (2016) and Park et al (2012) are two examples. Regulations on the purchase of sure items and promotions that are not unexpected are factors that may have an effect on clients to shop for so one can bring about purchases (Aggarwal, Huh, and Jun, 2011; Nusair et al., 2010;).

Campbell and Diamond (1990) say that two types of promotional tools: "price promotions" and "non-price promotions". In relation to pricing strategies, this study uses the term "price promotion" as Nusair has defined et al (2010). For promotions that are not related to price, this study uses promotional incentives that emphasize "value" and "scarcity" (Song et al., 2017; Parker & Lehman, 2011). These methods are regarded as advertising triggers that induce impulsive purchases with the assistance of customers while shopping online in e-commerce.

The term discount price refers to a marketing strategy in which a seller reduces the price of a particular item in order to attract customers. Consumers' emotional responses to discount prices are altered in such a way that customers who believe they will benefit feel happy, and this increased sense of positivity motivates them to spend more (Song et al., 2017; Park and Noh, 2012). This sort of direct stimulation economy causes customers to change their pricing reference point for their items, influencing their propensity to buy (Nusair et al., 2010). In other words, when the product is offered at a discount, the consumer responds positively and the tendency for impulsiveness increases.

Store owners often limit product availability or promotional periods in an attempt to pressure consumers and shorten

their doubts. shorten the time of promotion or limit product availability in an effort to suppress consumers and shorten the time for consumer doubts, aiming to provide a sense of urgency and trigger their purchase intentions (Vaidyanathan and Aggarwal, 2003). Scarcity refers to the limited supply of the product, time, or other purchase conditions, implying to consumers that their chances of purchasing the product are slim. (Aggarwal et al., 2011).

Resource scarcity acts as a powerful stimulant. which can encourage consumers to make choices, consequently accelerating them in making options, which in turn encourages clients to make purchases. Lin and Lin (2013) Researchers have found that a limited inventory or product promotion that is only available for a limited time can elicit strong positive responses from consumers. According to Song et al. (2017), messages about product scarcity and discounts reduce consumer interest in social commercial platforms. This promoting strategy influences the attractiveness of consumer products. Clients contemplate popular and in moderate demand items while demanding for more transportation, causing them to shift their normative judgements and make purchases today. When demand exceeds supply, customers agree that the product is in high demand and well-known, leading them to make a purchase (Parker and Lehmann, 2011).

Based on the literature, this study investigates the influence of scarcity and discount pricing on impulse purchasing behavior, and consequently formulates the following hypotheses:

H1. Scarcity positive affectively impulse buying tendency regarding e-commerce by push notification.

H2. Discount positive affectively impulse buying tendency regarding e-commerce by push notification.

4. Moderating Effects of Situational Factors

Consumer purchasing decisions can be influenced by the situational characteristics of the apparel retail environment (Turley and Milliman, 2000). In other words, shopping at the end of the month or shopping at lunch, a situation in which the consumer finds himself, can influence impulsive buying behavior (Sharma et al., 2010). The contextual characteristics of the moments encountered often influence consumer behavior and perceptions (Grewal et al., 1996). As a result, this study takes into account the availability of time and money as moderating variables for situational characteristics Wong and Zhou, 2004).

a. Money Availability

The availability of money is considered to have an effect on the purchasing power of individual consumers (Foroughi et al., 2012).

As a result, it is widely considered to be a vital facilitator of the impulsive buying process (Beatty and Ferrell, 1998). Previous study has found a relationship between money availability and impulsive purchasing. Furthermore, they describe it in terms of the positive emotional arousal that customers may experience as a result of a perceived increase in money availability (Luo, 2005). Thus, it is reasonable to hypothesize that the availability of money acts as a moderator of the relationship between scarcity and impulsive buying behavior.

H3. Money availability will positively moderate the relationship between discount price and impulse buying tendency.

b. Time Availability

When consumers experience the final touch of the purchase, they are considered to be influenced by the availability of time (Gehrt and Yan, 2004). People who spend more time having fun are believed to be in a higher level of high-quality emotional arousal than those who are irritated with their restricted time availability. This is especially true in the context of impulsive purchasing, which has grown as purchasing times have decreased. (Foroughi et al., 2012). Ferrell and Beatty (1998) discovered a positive correlation between a customer's time availability and his or her likelihood to make

a purchase. Impulse purchase made by means of the customer. As a result, it is proposed that consumers with more time availability in particular shopping situations are more likely to make a purchase. in comparison to those

pressed for time in comparable shopping situations.

H4. Time availability will positively moderate the relationship between discount price and impulse buying tendency.

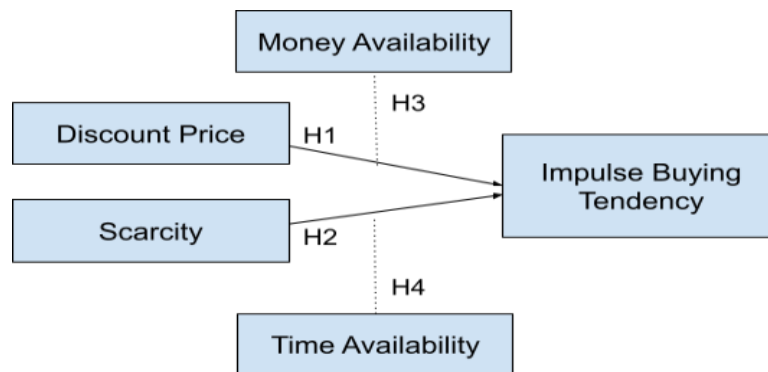


Figure 1. Research Structure

Table 1. Definition of Constructs

Constructs	Definition	Reference
Discounted Price (DP)	The price is lower than usual.	Hsu et al. (2006), Wells et al. (2011)
Scarcity (SC)	Techniques Used to increase a product's attractiveness and value by limiting its quantity and/or availability	Prebensen, et.al. (2016), Aggarwal et al. (2011)
Money Availability (MA)	The purchasing power of a consumers.	Foroughi et al., 2012
Time Availability (TA)	Individual customers' available time for other activities.	Gehrt and Yan, 2004
Impulsive Buying Tendency (IBT)	The tendency to make spontaneous	Mittal et al. (2018), Liu et al. (2013)

Constructs	Definition	Reference
	and unexpected purchases on-site, Act without regard for the consequences or consideration.	

RESEARCH METHOD

This study proposed to find the impactness between promotional campaigns as stimulants that consisted of discounted price and scarcity to impulse buying tendency in context of mobile push notification in e-commerce apps. Money availability is a moderating effect between discounted price and impulse buying tendency. While time availability plays a moderating effect between scarcity and impulse buying tendency.

1. Research Design

We organized the questionnaire into five components for data collection based on the hypothesis. To assess our survey, we employed a five-point likert scale. Respondents answered questions 1 through 5, with 1 indicating strongly disagree and 5 indicating strongly agree. Reference questions are in Appendix A. The definitions for construct operations are in Table 1. Shim and Altmann (2016) and Tang et al. (2016) were used to develop the discounted price (DP). The scarcity (SC) items were based on Wu et al. (2011) and Chang et al (2014). Beatty and Ferrell

(1998) developed situational variables as moderating effects for money availability (MA) and time availability (TA). Finally, the items for impulse buying tendency (IBT) were developed in accordance with Verhagen and Van Dolen (2011).

2. Sample

We conducted an online survey that was created in a link which can be shared via social media to gather the data in May 2021. The following criteria were used to select sample considerations:

- a. Respondents had received push notifications from e-commerce applications.
- b. Respondents studied tend to impulse buying by receiving mobile push-notification from e-commerce apps.

DATA ANALYSIS AND RESULTS

The proposed model and hypotheses were validated using Structural Equation Modeling (SEM) in this study using SmartPLS software. Prior to confirming the assumptions, we utilized Confirmatory Factor Analysis (CFA) to test reliability and

validity. Factor analysis was used to ensure reliability and discriminant validity by reducing the number of questions in each dimension.

1. Respondent Demography

This study looks on consumers' unplanned purchases in mobile push-notification e-commerce apps. We stated some e-commerce apps which are familiar and have a big customer base in Indonesia such as Shopee, Tokopedia, Blibli, Bukalapak and Lazada to make the respondent easy getting the point. The questionnaires were opened 5 days from May 13 to May 17 via a shared google form link. The link distributed to social media

whatsapp, instagram, and twitter. Two questions based on point 3.2 are used to filter the respondent. From a total 334 samples collected, 236 valid ones. Table 2 shows statistical results that frequency males and females are roughly balanced. 62% respondents mostly were 17-25 years of age which are millennials. High school and Bachelor degree were the top two respondents education. The largest portion of monthly income respondents were under IDR500k. Mostly respondents have online experience more than equal to 1 month which totals 91.9%. Lastly, respondents shopping online under 3 times as much 43.2%.

Table 2. Demography of Respondents

Measure	Items	Frequency	Percent
Gender	Male	104	44.1%
	Female	132	55.9%
Age (years old)	17 - 25	146	61.9%
	26 - 35	79	33.5%
	36 - 45	9	3.8%
	46 - 55	2	0.8%
Education	Elementary School	1	0.4%
	High School	112	47.4%
	Associate's Degree	9	3.8%

Measure	Items	Frequency	Percent
	Bachelor Degree	108	45.7%
	Master Degree	6	2.5%
Monthly Income (IDR)	< 500.000	80	33.9%
	500.000 - 1.000.000	32	13.5%
	1000.000 - 2.500.000	16	6.8%
	2.500.000 - 5.000.000	32	13.0%
	5.000.000 - 10.000.000	48	20.3%
	> 10.000.000	8	11.9%
Online Shopping Experience (month)	< 1	16	6.8%
	- 12	115	48.7%
	> 12	105	44.5%
Online Shopping Frequency (monthly)	< 3 Times	102	43.2%
	3 - 5 Times	89	37.7%
	> 5 Times	45	19.1%

2. Reliability & Validity Analysis

Chronbach's alpha coefficient was used to determine reliability in this study. To ensure a high level of reliability for survey questions, the chronbach's alpha must be greater than 0.7 (Fornell and Larcker, 1981). Furthermore, three indicators were used to assess validity in this study: factor loading, extracted average variance (AVE), and composite reliability (CR). According to Fornell and Larcker (1981) and Hair et al (2010), the overall CR and AVE must be larger than 0.6, and the

loading factor of each item must be larger than 0.5. A summary of the findings can be found in Table 3. In determining the relative importance of these elements using the discriminant validity test, the coefficient judges that all elements need to be extra than the alternative elements (Fornell and Larcker, 1981). As illustrated in table four, the square root of AVE for everything is extra than the correlation coefficient for the opposite factors, indicating that this questionnaire has appropriate discriminant validity.

Table 3. Results of Reliability and Validity Analysis

Constructs	Items	Factor Loading	Cronbach's α	CR	AVE
Discounted Price	DC 1 DC 2 DC 3	0.817 0.799 0.783	0.719	0.842	0.640
Scarcity	SC 1 SC 2 SC 3	0.808 0.876 0.849	0.776	0.840	0.533
Money Availability	MA 1	1.000	1.000	1.000	1.000
Time Availability	TA 1	1.000	1.000	1.000	1.000
Impulse Buying Tendency	IBT 1 IBT 2 IBT 3 IBT 4	0.694 0.632 0.601 0.802	0.835	0.874	0.501

Table 4. Analysis of Discriminant Validity

	Discounted Price	Impulse Buying	Money Availability	Scarcity	Time Availability
Discounted Price	0.800				
Impulse Buying Tendency	0.481	0.708			
Money Availability	0.312	0.386	1.000		

	Discounted Price	Impulse Buying	Money Availability	Scarcity	Time Availability
Time Availability	0.343	0.496	0.200	0.526	1.000
Scarcity	0.403	0.514	0.205	0.730	

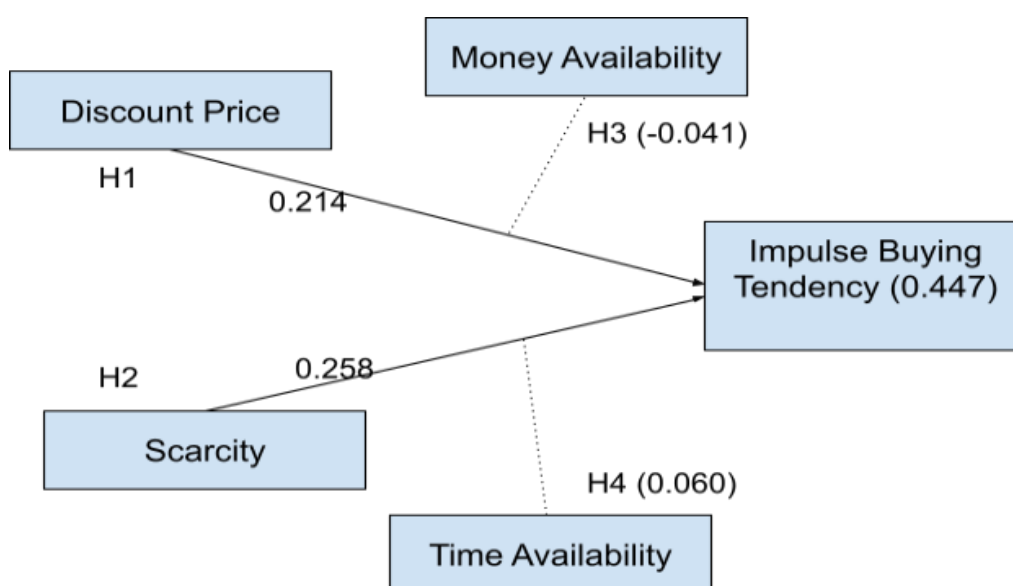


Figure 2. Results of path analysis for research model

3. Hypothesis Testing

This study based on the research model of mobile push-notification e-commerce applications, the results of the analysis are as follows. We discovered that discounted price ($\beta = 0.214$, $p < .001$), scarcity ($\beta = 0.258$, $p < .00004$), all have an impact on impulse buying tendency. However, we found no

evidence to support the idea that money availability ($\beta = -0.041$, $p = .402$) negatively moderates impulse buying tendency. Lastly, the data said that time availability ($\beta = 0.60$, $p = .279$) doesn't support the moderate impulse buying tendency.

DISCUSSION & CONCLUSION

1. Research Implications

- a. Promotional campaigns and mobile push-notification is a match.

The findings of this study indicate various implications for internet marketers. To begin, it emphasizes the importance of promotional marketing in influencing customers' online impulsive purchases. According to the findings, discount and scarcity play the most crucial influence in influencing online impulse buying tendency. Purchasers will purchase goods whilst there may be a reduction instead of needing its (Park et al., 2012; Özer and Zheng, 2016). They become an urge to obtain what they require, except that they may also arise as an impulse when the supply of the unit being offered becomes limited. In order to increase purchase penetration on mobile promotion, discount price and scarcity should be taken into consideration at push- notification.

- b. Situational characteristics don't take much effect on mobile push-notification.

The results of the distributed questionnaire show that the situational characteristics do not really affect mobile promotion. When customers get push notifications, they are not particularly impacted by the availability of money or time. It means providers can flood the consumers with their promotion in this way. In note, they need to be aware of the consumer's privacy

value because it could be an intrusive way (Li and Pavlou, 2014).

2. Research Limitation & Future Studies

First, the short writing time was due to several factors that hindered the process of writing and the distribution of questionnaires coincided with Muslim holidays thus the authors had difficulty getting the ideal number of questionnaires on time which caused data processing to be carried out at the end of time. This article seeks to create an agenda for investigating these challenges by creating a framework for push notifications in mobile applications. These issues can be investigated using a variety of research methods and routes. The most promising of these require large-scale field studies, which are becoming more feasible with the widespread use of cellphones. We believe that this paper will serve as a useful reference on push notifications in mobile applications, as well as a springboard for future push notification.

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