The Effect of Online Shopping and E-Wallet on Consumer Impulse Buying

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Abstract
This research examines the influence of On-line Shopping and E-wallet on Impulse Buying. The existence of an online shopping phenomenon using digital wallet payments (e-wallets) is prevalent among the public recently. This study adopted a survey method with 200 respondents selected purposively from two large cities in East Java, Indonesia namely malls located in Malang and Surabaya. Using variables that consist of shopping variables consisted of: variety of choices, price level, sensory attribute, utilitarian browsing, and hedonic browsing. Moreover, the E-wallet variables consist of: effect of service features, advertising, benefit perceptions, perceived usefulness, consumer attitude, security, risk, and discount. Findings revealed that price level, hedonic browsing, benefit perceptions, perceived usefulness, consumer attitude, security, risk, and discount had a significant positive correlation with impulse buying; while the variety of choices, utilitarian browsing, effect of service features, and advertising had a significant negative correlation with impulse buying. Online shopping and e-wallet variables simultaneously affect impulse buying. Practical implications are also discussed in this article.

Keywords
Industrial Revolution 4.0; hedonic behavior; impulse buying; e-wallet; online shopping; perception

Introduction
Indonesia entered the era of the Industrial Revolution 4.0 in which digitalization became an important part of people's daily activities. The Industrial Revolution 4.0 embraces the latest trend of automation and data exchange in factory technology. This has changed the behavior of people specifically dealing with their business transactions. The International Data Corporation Indonesia reports that overall spending for Information and Communication Technology (ICT) in

Indonesia is expected to increase by 16% from USD 9.6 billion in 2017 to USD 11.9 billion in 2020 (Ali, 2019).

The development of the digital age is increasingly inevitable, where every company must choose the right strategy to sell its products through an online platform with the help of an application.

Shopee, Tokopedia and Bukalapak are the most widely used applications among
Indonesians in the second quartal of 2020

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(Iprice, 2020). Previous studies have reported that the online purchasing behavior of consumers in Indonesia is highly varied. For enterprises, information on consumer behavior in the purchase of products becomes important information before the products are placed on the market. Online shopping has become a common behavior for some people due to its utility and convenience. Consumers believe that online shopping is a way to find the right products. Results from previous research have revealed numerous factors that influence this behavior. The findings of several previous research may be adopted as references and considerations in the development of marketing strategies. There are several reasons why people are inclined to use online shopping apps. The further report supported the finding (Lo et al 2016). Hedonic and utilitarian web browsing have a positive impact on impulse buying (Sahetapi et al 2020). Another study, however, stated a different result, because the use of discount indicators did not affect impulse buying (Kusnawan et al. 2019).

Park et al (2012) revealed that several variables influence impulse buying includes a variety of choices, price level, sensory attribute, utilitarian browsing, and hedonic browsing. A form of commercial transactions performs through an online shopping system operated by several platforms such as Lazada, Shoppe, Tokopedia, etc. In 2019, online shopping has been widely used by the community as an alternative to real market-based shopping. To support this system, some providers released cashless transactions through digital wallets or also known as e-wallets (Dalimunte et al. 2019). It estimated about 38 e-wallet services received official licenses. Within the last two years (2018-2019), e-wallet transactions in Indonesia have increased by 14% per year (detiknet.com).

In 2020, GOPAY, OVO, Dana, and LinkAja were the most common e-wallets used by people. A pandemic situation followed by several social and physical restrictions has further increased e-wallet transactions. This indicated that people in Indonesia have been gradually adapted to the new era and switch their behavior to use cashless transactions. Perceived ease of use and perceived usefulness are among two important factors that support consumer decisions to use e-wallets (Prakosa & Wintaka, 2020; Kusuma & Syahputra, 2020). Other influential factors include the influence of service features, advertising, consumer attitudes, security, and risks (Koranti & Putri 2019). Online shopping has attracted a lot of consumer interest in the cashback and point award method, which allows the consumers to buy products of interest. This situation may encourage frequent behavior of spending money without proper planning. This behavior is known as impulse buying refers to direct purchases with immature planning to purchase certain product categories or to meet the consumer needs.

Buyers choose online shopping for several factors. First, the public's perception of the benefits or advantages of online shopping for buyers. According to Kim et al (2008; 544) public's perception of the benefits of online shopping caused by their belief that the system is better than direct shopping.

The use of e-wallets offers wider shopping transaction amount from small to large scale (Punwatkar, et al., 2018). This method is one of the most popular payment services using an electronic system because it does not depend on cash or credit cards. Customers can easily buy many products from plane tickets to groceries using digital wallets (Chandra, 2017). There are also almost non-existent security threats to e-wallets (Upadhayaya, 2012). Unlike debit or credit cards, electronic wallets do not go through a third party directly. Mobile payments are not a substitute for cash transactions but as a complement to cash. The e-wallets that are not yet perfect for now provide opportunities to compete between competing banks to reach the e-wallet electronic payment market. In competing, several banks install competitive methods through promotions.
and the lure of cashback when shopping using certain e-wallets. This is what causes consumers to become interested and even have various types of e-wallets with various offers. Researchers want to reveal how the effect of e-wallet promotion on impulse buying (unplanned purchases).

Payment of e-wallet is considered to be one of the most prominent transaction methods because of the advantages of convenience, protection, and flexibility (Uddin, et al., 2014). This is also recognized for its innovative benefits such as instant communication and customization (Osakwe, et al., 2016). As the number of electronic payment systems has increased, e-wallets have gained notoriety by providing a large number of services in the sectors of equestrian, bill payment, and food ordering (Rosnidah et al., 2019). In a study conducted in Bandung, it shows that the application e-wallets make it easy and provide many benefits for consumers in doing their daily work. This application is also accessible to most people regardless of their social level. The existence of this convenience has a significant effect on the variable the attitude of the user to continue to use this technology application (Kusuma & Syahputra, 2020).

Previous research from Koranti & Putri (2019) and Kusnawan et al (2019) stated that the repeated use of e-wallets is affected by the following factors: influence of service features, the attractiveness of advertisements, perceived benefits, perceived usefulness, consumer attitudes, security, risks, and discounts. Utility and capability factors are two important things in determining the intention of consumers in Surabaya to use e-wallets (Mahwadha, 2019). Studies in Malaysia show that consumers’ intention to use e-wallets has a positive and significant correlation with usage convenience, privacy, and behavioral security (Karim et al 2020).

Abdolvand et al. (2011) stated that impulse buying is an important aspect of consumer behavior and an important concept for retailers. According to Hatane (2007), it is estimated that 65 percent of purchasing decisions in supermarkets are made in stores with more than 50 percent being previously unplanned purchases. This explains that unplanned purchases made by customers contribute to the sales turnover obtained by a store. Impulse buying generally occurs due to strong motivation which turns into a desire to purchase a certain commodity (Ahmad, 2011:1704). This behavior is commonly related to the ease of purchasing a product (Khandai et al. 2012).

Purchasing behavior, including impulse buying, is influenced by internal or external factors, which are introduced as internal and external locus of control (Widawati 2011). Based on the opinion of Verplanken and Herabadi (2001), personal factors are one of the determinants of purchasing behavior, where the locus of control as a personality variable is related to internal consumer factors. Consumers with external behavior control are more easily stimulated by external factors, so that the role of family, friends, expert advice, advertisements, product packaging displays, product samples, etc. be a determinant of their purchasing behavior. In contrast, individuals with internal behavior control are more selective in accepting stimulation from outside themselves, resulting in efforts, memories, motives, etc. it is more a reflection of their buying behavior (Widawati 2011). Of these two factors, research conducted in Bandung shows that external locus of control, for example, family, friends, expert advice, advertisements, product packaging displays, product samples, etc. can influence consumer impulse buying behavior (Widawati 2011). Impulse buying is very likely to occur when shopping due to the ease of shopping. factors that influence impulse buying include window displays, credit cards, and promotional activities (discounts and free products) (Karbasivar et al. 2011). Base on the above problem statements, this study formulate a research question as follows: what is the effect of
online shopping and e-wallet variables on impulse buying? This study aims to analyze the effect of online shopping and e-wallet promotion on impulse buying.

**Research Methods**

This research applied a quantitative approach that works with the data in the form of numbers. The hypotheses or answer specific research questions were tested by using a statistical tool to predict the effect of independent variables on dependent variables. This research adopted purposive samplings. This is due to the quantitative of the variables studied, so the data collection in this study used a perceptual approach (Creswell et al., 2010). The respondents were selected with certain characteristics as follows: (1) aged between 17 and 55 years old; (2) possessing gadgets with an internet connection, (3) having one or more personal e-wallet accounts, and (4) purchasing products through online shopping less than six months before the survey (Putri, 2020).

The population is defined as people applying an online system, having an e-wallet, and frequently visiting the mall. A total of 220 targeted respondents were found incidentally in 5 malls in Malang and 6 malls in Surabaya to be asked for their willingness to contribute for responding. Among them, 200 respondents willing to participate and fulfill the questionnaire online. The questionnaire consisted of 5 questions about on-line shopping, 8 questions about e-wallet, and a question about impulse buying. Online shopping consisted of 5 predictors: the variety of choices (X1a), price level (X1b), sensory attribute (X1c), utilitarian browsing (X1d), and hedonic browsing (X1e); while e-wallet consisted of 8 indicators: effect of service features (X2a), the advertising (X2b), benefit perceptions (X2c), perceived usefulness(X2d), consumer attitude (X2e), security (X2f), risk (X2g) and discount (X2h). Data were grouped and tabulated using Excel. Statistical analysis of the relationship between indicators was performed by simple regression using SPSS version 23.0.

**Hypothesis**

This study tested three main hypotheses including (1) H1 On-line shopping has a significant effect on impulse buying partially, (2) H2 E-Wallet has a significant effect on impulse buying partially, (3) H3 Online shopping and e-wallet has a significant effect on impulse buying simultaneously. Online shopping consisted of 5 indicators: the variety of choices, price level, sensory attribute, utilitarian browsing, and hedonic browsing; while e-wallet consisted of 8 indicators: effect of service features, the advertising, benefit perceptions, perceived usefulness, consumer attitude, security, risk and discount (Figure 1).
Results

Respondents' characteristics
The result showed that the respondent had a high education level. Overall, 41% of respondents graduated from senior high school, 14% graduated from a bachelor's level, and 45% post-graduate degree holder. Females were more dominant (57.5%) than males (42.5%). The respondents have the employment in private sectors (27%), housewives (23.5%), lecturers (11.5%), students (12.5%), civil servants (18%), entrepreneur (7.5%). The average age ranged from 21 to 45 years. All respondents in this study have confirmed that they have purchased products online and have and use e-wallet facilities, so the results of the characteristics of the respondents described in the table above are following the objectives of this study. For purchase expenses per 1 month, it is known that most respondents (66%) spend less than IDR. 1 million, while the others spend more than IDR 1 million for online purchases or purchases using e-wallets (Table 1).

<table>
<thead>
<tr>
<th>Profile</th>
<th>Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>42.5%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>57.5%</td>
</tr>
<tr>
<td>Education</td>
<td>Senior High School</td>
<td>41%</td>
</tr>
<tr>
<td></td>
<td>Under Graduate</td>
<td>14%</td>
</tr>
<tr>
<td></td>
<td>Graduate</td>
<td>45%</td>
</tr>
<tr>
<td>Occupation</td>
<td>Private service</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td>Housewife</td>
<td>23.5%</td>
</tr>
<tr>
<td></td>
<td>Lecture</td>
<td>11.5%</td>
</tr>
<tr>
<td></td>
<td>Student</td>
<td>12.5%</td>
</tr>
<tr>
<td></td>
<td>Gov't service</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td>Entrepreneur</td>
<td>7.5%</td>
</tr>
<tr>
<td>Age (years)</td>
<td>&lt; 20</td>
<td>27.5%</td>
</tr>
<tr>
<td></td>
<td>21-45</td>
<td>68%</td>
</tr>
<tr>
<td></td>
<td>&gt; 45</td>
<td>4.5%</td>
</tr>
<tr>
<td>Number of using Online shopping on a month</td>
<td>1-5</td>
<td>83%</td>
</tr>
<tr>
<td></td>
<td>6-10</td>
<td>17%</td>
</tr>
<tr>
<td></td>
<td>&gt;10</td>
<td>0%</td>
</tr>
<tr>
<td>A budget used for online shopping within one month</td>
<td>&lt;1,000,000</td>
<td>66%</td>
</tr>
<tr>
<td></td>
<td>1,000,000-3,000,000</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td>&gt;3,000,000</td>
<td>16%</td>
</tr>
</tbody>
</table>

*Source: Process Data, 2020
For achieving valid results, and before testing the hypothesized relationship, tests for indicator validity and reliability of the measurement model were conducted. The results showed that 6 items were invalid and excluded from further analysis.

Hypothesis Results
Among the 13 indicators, 12 had a significant effect (P < 0.05), while one hypothesis (X1c) was statistically not significant (P>0.05) (Table 2). Indicator X1b, X1e, X2c, X2d, X2e, X2f, X2g, X2h, had a positive correlation with impulse buying, while the rest had negative correlations. The regression analysis result showed that online shopping indicators and e-wallet have a simultaneous effect on impulse buying in the revolution industry 4.0 era; hence H1, H2, H3 were accepted.

Based on the result, online shopping and e-wallet indicators were the basis for Impulse Buying which has an average value of 3.91. The majority of respondents agree that online shopping and e-wallets significantly affected impulse buying with an R-square value is 0.998. The R-square value showed that 99.8% variation of impulse buying can be explained by Online Shopping and E-wallet, while 0.2% is explained by other factors.

Between indicators X1 and X2, price level (X1b) and security (X2f) have a positive correlation with impulse buying, on the other hand, the effect of service features (X2a), the advertising (X2b) has a negative correlation with impulse buying (Table 2).

### Table 2. Result of Regression Analysis between the Variables and Impulse Buying

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Coef</th>
<th>SE Coef</th>
<th>T</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-80.784</td>
<td>2.494</td>
<td>-32.39</td>
<td>0.000</td>
</tr>
<tr>
<td>X1a</td>
<td>-0.77762</td>
<td>0.08044</td>
<td>-9.67</td>
<td>0.000</td>
</tr>
<tr>
<td>X1b</td>
<td>5.3056</td>
<td>0.1300</td>
<td>40.81</td>
<td>0.000</td>
</tr>
<tr>
<td>X1c</td>
<td>-0.01127</td>
<td>0.01419</td>
<td>-0.79</td>
<td>0.428</td>
</tr>
<tr>
<td>X1d</td>
<td>-0.16904</td>
<td>0.08399</td>
<td>-2.01</td>
<td>0.046</td>
</tr>
<tr>
<td>X1e</td>
<td>4.59757</td>
<td>0.05022</td>
<td>91.55</td>
<td>0.000</td>
</tr>
<tr>
<td>X2a</td>
<td>-9.37471</td>
<td>0.09120</td>
<td>-102.79</td>
<td>0.000</td>
</tr>
<tr>
<td>X2b</td>
<td>-6.37477</td>
<td>0.09104</td>
<td>-70.02</td>
<td>0.000</td>
</tr>
<tr>
<td>X2c</td>
<td>1.00046</td>
<td>0.06408</td>
<td>15.61</td>
<td>0.000</td>
</tr>
<tr>
<td>X2d</td>
<td>1.9686</td>
<td>0.1089</td>
<td>18.08</td>
<td>0.000</td>
</tr>
<tr>
<td>X2e</td>
<td>4.4720</td>
<td>0.2625</td>
<td>17.03</td>
<td>0.000</td>
</tr>
<tr>
<td>X2f</td>
<td>8.59338</td>
<td>0.08165</td>
<td>105.25</td>
<td>0.000</td>
</tr>
<tr>
<td>X2g</td>
<td>3.83506</td>
<td>0.02463</td>
<td>155.72</td>
<td>0.000</td>
</tr>
<tr>
<td>X2h</td>
<td>2.5186</td>
<td>0.1707</td>
<td>14.76</td>
<td>0.000</td>
</tr>
</tbody>
</table>

S = 0.391972  R-Sq = 99.8%  R-Sq(adj) = 99.8%

**Discussion**

The present new era has changed people's online shopping habits, which were more common to use online shopping accompanied by the use of e-wallets. Empirically, the findings from this study suggest that online shopping has had a dominant effect on impulse buying by purchasing the product online. A positive and significant relationship between online purchases and impulse purchases means that this buying method provides a variety of products, choices, prices that have been seen as friendly to consumers. This can encourage consumers to purchase products on-line. This result was in line with the objective of this study, which stipulates that online purchases affect impulse purchases.

The study found a positive and meaningful relationship between e-wallets and impulse buying. This means that the e-wallet provides convenient payment services when purchasing products online. This method is also considered secure to perform payment
transactions and can be recorded, and gets a discount when buying online transactions via e-wallets.

The results showed that the indicators for online shopping and e-wallet were positively correlated with impulse buying. This means that online shopping with an e-wallet makes it easy to purchase and pay online. The majority of respondents rated online purchases with the e-wallet as very attractive and secure. This method has also been considered safe for making payment transactions and can be accounted for, and obtains a discount when buying online transactions through e-wallets. Furthermore, the effect of the service characteristics and the attractiveness of advertising was regarded as having a strong influence on impulse buying. This indicates that the characteristics of the service and the attraction of advertising are attractive and encourage impulse buying.

Among the indicators, price level, hedonic browsing, benefit perceptions, perceived usefulness, consumer attitude, security, risk, and discount had a significant and positive correlation with impulse buying; while the variety of choices, utilitarian browsing, effect of service features, and advertising had a significant negative correlation with that.

Generally, impulse buying is influenced by internal and external factors. A study in China showed that impulse buying emotion is significantly influenced by online shopping mood, online store stimuli, recommendations, and personal impulse character (Chen and Zhang, 2015). Contrary to a study by Widawati (2013), this study indicates that the internal factor has a strong positive influence, while external factors have a negative impact. This shows that the impulse buying model is largely determined by the hedonic buying need and lifestyle independent of the advertising offered by the online stores or provider. Moreover, the study also revealed the trend of online shoppers and e-wallet users to use this system for their hedonic needs rather than browsing and shopping utilities. However, they still considered price levels, benefits, usefulness, and discount. The positive relationship between price level and hedonic shopping was consistent with other studies (Park et al. 2012; Koranti and Putri 2019; Dalimunte et al. 2019). Hedonic web browsing has a positive and significant effect on impulse buying. The influence of a positive shopping lifestyle on impulse buying may mediate the effect of hedonic shopping on impulse buying. A hedonistic browsing positively and significantly affects consumer reactions to impulse purchases (Putri 2020). This result is also consistent with research by Dalimunte et al. (2019). Dalimunte's study found that social influences, performance expectations, habits and price values significantly affected behavioral intent in the use of e-wallets for online and in-store transactions.

Another study showed when the product is hedonic price discounts generate more impulse purchase intentions than bonus packages, while bonus packages are a more effective sales promotion than price discounts when the product is useful. Besides, price discounts generate more impulsive purchase intentions than bonus packages when the product is a low cost, whereas bonus packages are a more effective sales promotion than price discounts if the product is expensive (Xu and Huang, 2014).

Generally, respondents to this study have a good level of education and sufficient expenses to make online purchases. Individuals with increased revenue and awareness levels are generally willing to pay a high price for comfort and quality. Even branded products typically have some appeal. Besides, aspects such as quality, comfort, expectations and demographic characteristics also significantly affect purchasing decisions (Upadhyay and Joshi 2014).

This study shows that a variety of choices, utilitarian browsing, the effect of service
features, and advertising had a significant negative correlation with impulse buying. This shows that respondents did not take advantage of online shopping for their utilitarian needs. Therefore, the number of choices and advertising has a negative effect. This meant that the respondents may more focus on utilizing online shopping for their hedonic shopping needs. There are three possible explanations for this phenomenon. First, some of the hedonic product types are only available in Jakarta or other big cities so that online shopping expands the selection of products that users can buy. Second, utilitarian needs are generally easy to find anywhere at similar or lower prices than offered by the online platform. Third, the amount of advertising is annoying for users who are more focused on certain product targets.

In this study, sensory attributes did not correlate with impulse buying. A similar result was also conveyed by Maharani and Darma (2018); hedonic shopping motivation and visual merchandise had no direct effect on impulse buying, but through positive emotions as moderating indicators. This showed that a person's hedonism did not affect his desire to shop impulsively, rather influenced by his positive emotional nature. Price discounts can have a significant effect on impulsive purchases because they can affect one's emotions for shopping.

The results of this study differed from the previous study by Kusnawan et al (2019) where e-wallet discounts do not affect impulse buying. Kusnawan’s research used the same analytical tool but held in different cities. This study is different from the results of Koranti and Putri’s research (2019). A different indicator is consumer attitudes, where Koranti and Putri’s research (2019) shows that consumer attitudes do not affect repurchasing of the use of OVO e-wallets, while in this research consumer attitude has a positive effect on impulse buying. This study also showed that a variety of choices, utilitarian browsing, the effect of service features, and advertising had a significant negative correlation with impulse buying. Another study by Park et al (2012) has different results where the utilitarian indicator of web browsing was not significant. The difference in the results of this study is considered to have novelty because with the same analysis tool, namely multiple linear regression but has different results.

The results of this study have two implications the increase use of e-wallet and shift consumer behavior purchasing to online shopping. Therefore, marketers also have to penetrate the online world.

**Conclusion**

This study showed that price level, hedonic browsing, benefit perceptions, perceived usefulness, consumer attitude, security, risk, and discount had a significant positive correlation with impulse buying; while the variety of choices, utilitarian browsing, effect of service features, and advertising had a significant negative correlation with impulse buying. The sensory attribute indicator is the only indicator that does not affect impulse buying. Online shopping and e-wallet indicators simultaneously affect impulse buying in consumers in the current era. This shows that the phenomenon of online shopping and the development of e-wallets as virtual payments increases impulse buying in consumer behavior.

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