

IMPLEMENTATION OF ONLINE IMPULSIVE PURCHASING WITH DIGITAL PAYMENT METHODS AS A MODERATOR IN NORTH SULAWESI

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Abstract

This study aims to analyze the influence of digital promotion and local culture on digital impulsive buying, with digital payment methods as a moderating variable. This study uses the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach with primary data collected from e-commerce users in North Sulawesi, Indonesia. The results show that digital promotion has the most significant influence on impulsive purchasing behavior, followed by local culture, which also contributes positively. However, digital payment methods do not significantly moderate the relationship between the variables studied. These findings highlight that personalized digital promotion strategies and the integration of local cultural values effectively increase consumers' emotional engagement in online purchases. This study provides practical implications for e-commerce players, digital MSMEs, and fintech developers to strengthen digital promotion strategies and financial literacy throughout Eastern Indonesia.

Keywords: Digital promotion, local culture, digital payment methods, impulsive buying, e-commerce

1. INTRODUCTION

The development of the digital economy in the era of the Fourth Industrial Revolution has fundamentally changed global consumption patterns, particularly through the digitization of transactions based on e-commerce platforms, marketplaces, and interactive social media. This transformation has not only accelerated transaction processes but also shifted how consumers process information, evaluate products, and make purchasing decisions online. The United Nations Conference on Trade and Development report (United Nations Conference on Trade and Development (UNCTAD), 2023) shows that the value of global e-commerce transactions continues to increase significantly, with developing countries experiencing the fastest growth alongside increased internet access and digital technology adoption.

In Indonesia, the acceleration of the digital economy is occurring at a rapid pace and has a direct impact on changes in consumer behavior. Data from the Central Statistics Agency (Statistika, 2024) shows that more than 88% of internet users in Indonesia have made online purchases, with a significant increase in unplanned purchases triggered by digital promotions. This phenomenon indicates that online impulsive purchases are increasingly becoming a dominant characteristic in the digital consumption behavior of Indonesian society, especially in areas with continuously increasing technology penetration.

Online impulse purchases are a form of consumption behavior triggered by spontaneous urges without prior planning, and are often influenced by emotional stimuli and situational contexts. From a digital consumer behavior perspective, digital promotions serve as the primary stimulus

that triggers this response. The Stimulus–Organism–Response (S–O–R) framework explains that external stimuli, such as visual promotions, time-limited discounts, and real-time notifications, can influence consumers' internal conditions (emotions, affections, and perceptions of urgency), which in turn drive behavioral responses in the form of impulsive purchases (Mehrabian & Russell, 1974). Recent empirical studies show that personalized and time-limited digital promotions significantly increase consumer impulsivity in e-commerce environments (Lyu et al., 2025).

However, consumer responses to digital promotions are not homogeneous. Social and cultural factors play an important role in shaping perceptions, interpretations, and meanings attached to promotional messages. Based on Cultural Dimensions Theory, societies with a collectivist orientation tend to adjust consumption behavior to social norms and group expectations (Hofstede, 2001). Consumption in this context not only serves to fulfill utilitarian needs, but also as a means of expressing social identity and status symbols. Social Identity Theory asserts that individuals use symbolic consumption to strengthen group affiliation and build self-image in their social environment (Tajfel & Turner, 1986).

In the context of Eastern Indonesia, particularly North Sulawesi, this dynamic becomes increasingly relevant. The people of North Sulawesi are known for their *mapalus* cultural values, which emphasize togetherness, social solidarity, and mutual assistance in community life. These cultural values have the potential to strengthen consumers' emotional engagement with products and digital promotions that align with local identities. Data from the 2023 Population and Housing Census shows that more than 80% of the productive-age population in North Sulawesi has used digital services, with a significant increase in digital wallet-based transactions and non-cash payments in the last two years. This reflects the integration of technological modernization and local social values in digital consumption behavior.

In addition to digital promotion and local culture, digital payment methods are also seen as a factor that can influence impulsive purchasing behavior. Based on the Technology Acceptance Model, ease of use and perceived usefulness of digital payment systems can reduce transaction barriers and accelerate the decision-making process (Davis, 1989). A number of studies show that the use of e-wallets and digital payments can reduce the perception of financial sacrifice and increase the tendency for impulsive purchases in certain contexts (Redine & Jebarajakirthy, 2023). However, recent empirical findings also indicate that the influence of digital payment methods is contextual and does not always trigger impulsivity, especially among consumers with high levels of financial prudence.

Based on the above description, there are still gaps in research related to how digital promotion and local culture simultaneously influence online impulse buying, and to what extent digital payment methods play a role as a moderating variable, particularly in the context of Eastern Indonesian society. Therefore, this study aims to analyze the influence of digital promotion and local culture on online impulse buying, with digital payment methods as a moderating variable, among e-commerce consumers in North Sulawesi. The integration of the S–O–R framework, Cultural Dimensions Theory, and Technology Acceptance Model is expected to provide theoretical and empirical contributions to understanding digital consumption behavior based on the local socio-cultural context

2. RESEARCH METHOD

This study uses a quantitative approach with the Partial Least Squares–Structural Equation Modeling (PLS-SEM) method. The PLS-SEM method was chosen because it is capable of analyzing complex relationships between latent variables simultaneously without requiring

multivariate normal data distribution. In addition, PLS-SEM is suitable for use in predictive and exploratory research, particularly in the development of digital consumer behavior models with a relatively moderate sample size (Hair Jr. et al., 2017).

This research approach is explanatory, with the aim of explaining the direct influence of digital promotion (X1) and local culture (X2) on online impulse buying (Y), as well as testing the role of digital payment methods (M) as a moderating variable. The research model is designed to capture the direct effects and interaction effects between latent variables in the context of digital consumption behavior among the people of North Sulawesi. The research population includes consumers who actively shop online through the main e-commerce platforms in Indonesia, namely Tokopedia, Shopee, Lazada, and Bukalapak, who reside in North Sulawesi Province. Based on data from the Central Statistics Agency (Statistika, 2024), the number of e-commerce users in this region is estimated to reach around 620,000 people, with the largest concentration in the cities of Manado, Bitung, Tomohon, and Kotamobagu. The sampling technique used was purposive sampling, with the following criteria: (1) at least 17 years of age and able to conduct online transactions independently; (2) had made an online purchase in the last six months; and (3) had used a digital payment method such as a digital wallet, pay later, or cash on delivery (COD).

The sample size was determined based on general recommendations in PLS-SEM analysis, namely a minimum of ten times the number of indicators used in the research model (Hair Jr. et al., 2017). With a total of 23 indicators, the minimum recommended sample size was 230 respondents. This study involved 275 respondents to anticipate invalid data and increase the statistical power and stability of the model estimation.

This study involved four main variables, namely digital promotion (X1), local culture (X2), online impulse buying (Y), and digital payment methods (M). Digital promotion was measured through indicators of content personalization, digital system-based product recommendations, the use of chatbots or automated features, and time-limited promotions that create a sense of urgency (Tang et al., 2023). Local culture represents the distinctive values of the North Sulawesi community, such as social orientation, status symbols, and consumptive lifestyle tendencies influenced by group norms and social solidarity (Hofstede, 2001). Online impulse buying is measured through indicators of sudden urges, unplanned purchasing decisions, emotional satisfaction, ease of transaction, and the visual appeal of digital platforms (Puntoni et al., 2021). Digital payment methods include the use of digital wallets, QRIS, pay later services, debit/credit cards, online transfers, and COD (Djuuna et al., 2024).

Data analysis was performed using SmartPLS software version 3.3.7. An evaluation of the measurement model (outer model) was conducted to assess the validity and reliability of the indicators. Convergent validity was tested through factor loading values (>0.70) and Average Variance Extracted (AVE >0.50). Discriminant validity was evaluated using the Fornell–Larcker criteria, cross loading checks, and the Heterotrait–Monotrait (HTMT) ratio with a value below 0.85. Construct reliability was assessed using Cronbach's Alpha and Composite Reliability with a minimum value of 0.70 (Hair Jr. et al., 2017).

The structural model (inner model) was evaluated by assessing the level of multicollinearity through the Variance Inflation Factor (VIF < 5), the coefficient of determination (R^2), and the effect size (f^2). The significance of the relationship between variables was tested using the bootstrapping procedure with a t-statistic value criterion > 1.645 for a significance level of 5% and > 2.326 for a significance level of 1%. Through this approach, the study is expected to

comprehensively and predictively explain the influence of digital promotion and local culture on online impulse buying, as well as the moderating role of digital payment methods in the context of North Sulawesi society.

Table 1. Relationships between constructs

RELATIONSHIP BETWEEN VARIABLES	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Value	Results
Digital Promotion (X1) -> Online Impulsive Purchases (Y)	0.390	0.396	0.066	5.922	0.000	Significant
Local Culture (X2) → Online Impulsive Purchasing (Y)	0.244	0.234	0.065	3.773	0.000	Significant
Digital Payment Method (M) -> Online Impulsive Purchasing (Y)	0.110	0.128	0.061	1.809	0.072	Not Significant
Moderating Effect 1 -> Online Impulsive Purchasing (Y)	-0.013	-0.009	0.035	0.377	0.706	Not Significant

Researcher's Data Analysis Results 2025

The Local Culture variable (X2) also shows a positive and significant effect on Online Impulsive Purchasing (Y) with a *path coefficient* value of 0.244, a *t-statistic* of 3.773, and a *p-value* of 0.000 (< 0.05). This means that the stronger the local cultural values attached to individuals, the greater their tendency to make impulsive purchases. In North Sulawesi, consumptive behavior is often influenced by social values such as the desire to maintain social image, show economic status, and group solidarity through consumption.

The relationship between digital payment methods (M) and online impulse buying (Y) shows a positive but insignificant direction (*path coefficient* = 0.110, *t-statistic* = 1.809, *p-value* = 0.072). These results indicate that the convenience of digital payment systems, such as *digital wallets*, QRIS, or *PayLater* services, can indeed increase shopping convenience, but is not yet strong enough to directly trigger impulsive purchasing behavior (). The moderator variable of digital payment methods in the relationship between digital promotions and online impulsive purchasing also showed insignificant results (*path coefficient* = -0.013, *t-statistic* = 0.377, *p-value* = 0.706). This means that the presence of digital payment methods does not strengthen or weaken the influence of digital promotions on online impulsive purchasing.

Table 2. Construct Validity and Reliability

VARIABLE	Cronbach's Alpha	rho_A	Composite Reliability	Average Extracted Variance (AVE)	Interpretation
Digital Promotion (X1)	0.787	0.798	0.854	0.542	Trusted
Local Culture (X2)	0.898	0.912	0.921	0.660	Highly Reliable
Online Impulsive Purchases (Y)	0.871	0.876	0.903	0.607	Very Reliable
Digital Payment Method (M)	0.677	0.686	0.780	0.380	Fairly Reliable
Moderating Effect 1	1.000	1.00	1	1	Trusted

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The *Composite Reliability* (CR) value for all constructs is greater than 0.70, indicating that internal reliability is met. This means that each indicator in the construct is able to consistently measure the intended latent variable. *Cronbach's Alpha* and rho_A are also mostly greater than 0.70, confirming that variables such as digital promotion, local culture, and online impulse buying are internally stable. However, the CR value (0.780) and *Cronbach's Alpha* (0.677) for digital payment methods are slightly below ideal (0.70), indicating that one or more indicators are inconsistent. AVE values ≥ 0.50 indicate good convergent validity. The three main constructs (digital promotion, local culture, and online impulse buying) have met the convergent validity requirements, meaning that the indicators within them are able to explain most of the variation in the latent constructs. Meanwhile, the digital payment method construct (AVE = 0.380) has not met convergent validity, indicating that most of its indicators are not strong enough to represent the construct theoretically. Revision or elimination of weak indicators is necessary.

Table 3. Determination coefficients

VARIABLE	R-Squared	Adjusted R Square
Online Impulsive Purchasing (Y)	0.351	0.341

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An R^2 value of 0.351 means that the variables of digital promotion (X1), local culture (X2), digital payment methods (M), and moderating effects together explain 35.1% of the variation in online impulse purchases (Y). An Adjusted R^2 value of 0.341 indicates that the model remains stable even when the number of predictors is controlled. Based on the criteria of Hair et al. (2019), an R^2 value between 0.33 and 0.67 is categorized as moderate, which means that this model has sufficient predictive power for social and consumer behavior research.

Based on the results of the structural model estimation that has been formulated, the following equation is obtained:

$$Y = 0,390 X1 + 0,244 X2 + 0,110 M - 0,013 (X1 \times M) + \zeta$$

This equation shows the direction and magnitude of each variable's influence on digital impulse buying (Y). In general, the coefficient values indicate a positive and significant relationship between digital promotion and local culture on impulse buying behavior, while the effects of digital payment methods and their interactions are still not statistically significant.

3. RESULTS AND DISCUSSION

The results indicate that digital promotions have a positive and significant influence on online impulsive purchasing behavior. These findings suggest that the more intensive, attractive, and relevant the digital promotions received by consumers, the greater their tendency to make spontaneous purchases without prior planning. Theoretically, these results reinforce the Stimulus–Organism–Response (S–O–R) framework, which explains that external stimuli in the form of digital promotions can affect consumers' affective states (organism), such as excitement, urgency, and emotional interest, which in turn trigger behavioral responses in the form of impulsive purchases (Mehrabian & Russell, 1974).

In the context of e-commerce, promotional features such as flash sales, time-limited discounts, real-time notifications, and interactive visual content act as psychological stimuli that increase perceptions of scarcity and time pressure. These conditions significantly reduce consumers' rational consideration process and accelerate purchasing decisions. These findings are consistent with research (Lyu et al., 2025) showing that time-based promotions have a strong influence on consumer impulsivity in digital shopping environments. Additionally, the study (Lyu et al., 2025) found that interactive and immersive digital promotions can increase emotional engagement, thereby increasing the likelihood of impulsive online purchases.

Apart from digital promotions, local culture has also been proven to have a positive and significant influence on online impulse buying. These results indicate that digital consumption behavior is not only driven by rational and technological factors, but also by social and cultural values that shape consumers' perceptions of the symbolic meaning of a product. In the context of North Sulawesi, local cultural values that emphasize social prestige, togetherness, and self-image have the potential to strengthen consumption drives, especially when products or promotions are associated with symbols of status and social acceptance.

These findings are consistent with Symbolic Consumption Theory, which states that consumption is not solely intended to fulfill functional needs, but also to express social identity and certain symbolic meanings. More broadly, the results of this study reinforce Hofstede's Cultural Dimensions Theory and Tajfel & Turner's Social Identity Theory, which emphasize that group norms and social affiliations play an important role in shaping individual consumption behavior. Empirical research by (Redine & Jebarajakirthy, 2023) shows that the cultural value of collectivism significantly strengthens consumers' emotional involvement and increases the tendency for impulsive purchases in the context of online shopping. Thus, local culture functions as an affective context that strengthens consumer responses to digital promotional stimuli.

Unlike the two main variables, digital payment methods show a positive but insignificant effect on online impulsive buying. This finding indicates that although digital payment technologies such as e-wallets, QRIS, and pay-later services increase transaction convenience and speed, these factors are not yet strong enough to directly trigger consumer impulsivity. These results support the concept of pain of payment, which explains that consumers remain conscious of financial expenditures, even when payments are made non-cash or digitally (In the context of North Sulawesi, these results can be explained by the socio-economic characteristics of consumers who are relatively cautious in managing their finances. Several previous studies have shown that digital payment methods function more as transaction facilitators than as triggers for impulsive purchases. (through their systematic review, concluded that the convenience of digital payments does not always increase impulsivity, especially among consumers with high self-control and financial awareness. Thus, transaction convenience plays a greater role after the purchase decision has been made, rather than at the stage of forming the impulsive urge itself.

The moderation analysis in this study also shows that digital payment methods do not moderate the relationship between digital promotions and online impulsive purchases. These

findings indicate that the influence of digital promotions on impulsive behavior is more emotional than functional. Visual stimuli and urgency-based promotional messages tend to trigger rapid affective reactions before consumers consider cognitive aspects such as the payment method used. These results reinforce the view that emotional stimuli play a dominant role in shaping online impulsive purchasing compared to instrumental technological stimuli.

Overall, the PLS-SEM model in this study shows that digital promotion and local culture are the main determinants of impulsive online purchasing behavior, while digital payment methods play a supporting role in facilitating the transaction process. These findings indicate that impulsive purchasing behavior in North Sulawesi is the result of an interaction between digital modernization and local cultural values. Technology functions as an enabler, while cultural values remain the main foundation for consumption decisions. Thus, digital consumers in Eastern Indonesia can be understood as socio-emotional consumers, where impulsive decisions are triggered not only by promotional stimuli, but also by the symbolic meaning and social values inherent in the local cultural context.

4. CONCLUSION

Overall, this study shows that digital promotion and local culture are dominant factors that shape impulsive buying behavior in the digital age. Conversely, the method of digital payment has not become a major driver because consumer trust and caution are still strong. Further research is recommended to refine the construct of digital payment methods, particularly by adding indicators that describe perceived security, trust, and financial control to strengthen convergent validity and improve the explanatory power of the model for impulsive purchasing behavior. Additionally, the research model can be expanded by incorporating psychological variables such as hedonistic motivation, self-control, mood state, and trait impulsivity to provide a more comprehensive explanation of digital consumer behavior. Future research also needs to explore the socio-cultural context through cross-cultural studies in various regions of North Sulawesi, as well as use longitudinal designs to capture the dynamics of impulsive digital behavior changes across generations (Gen Z, Millennials, and Gen X) in line with technological developments and online consumption trends. For e-commerce players and digital MSMEs, it is necessary to strengthen AI algorithm-based promotion strategies and personalized content, as well as integrate local cultural elements to build emotional bonds with consumers.

For local governments and fintech developers, it is important to improve digital financial literacy and public trust in non-cash payment systems through education and inter-agency collaboration. For local brand managers in North Sulawesi, it is recommended to implement cultural branding strategies that highlight distinctive local social values such as togetherness and solidarity in order to strengthen the emotional appeal of local products.

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