

Advancing the understanding of consumer behavior in social media marketing: An extended S–O–R perspective



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Abstract The utilization of social media platforms as marketing tools has become an essential strategy that must be carefully formulated by marketers due to the numerous benefits they offer, both in acquiring new customers and maintaining existing ones. As digital interactions increasingly influence consumer behavior, understanding the mechanisms behind these interactions becomes vital. This study aims to examine the direct and indirect effects of social media marketing, customer engagement, hedonic shopping motivation, and impulse buying behavior using the Stimulus-Organism-Response (S-O-R) theoretical framework. A quantitative approach was employed, utilizing Structural Equation Modeling–Partial Least Squares (SEM-PLS) with the support of SmartPLS 4.0 softwares. The research sample consisted of 210 respondents who had previously made transactions through social media platforms, including WhatsApp, Facebook, Instagram, and TikTok. The findings indicate that social media marketing exerts a positive and significant influence on impulse buying behavior. Moreover, this relationship is mediated by customer engagement and hedonic shopping motivation, highlighting the psychological and emotional processes that shape consumer purchasing decisions in digital environments. The study provides empirical evidence that engaging content and emotionally resonant experiences on social media can significantly enhance both engagement and impulse-driven purchases. These results emphasize the strategic importance of designing interactive and stimulating marketing content to foster stronger consumer relationships and increase spontaneous purchasing behavior. The research contributes to the growing body of knowledge on digital marketing and offers practical insights for businesses seeking to optimize their social media strategies.

Keywords: social media marketing, impulse buying behaviour, S-O-R

1. Introduction

In 2024, Indonesia's internet penetration rate reached 74.6%, marking an 8.7% increase compared to the previous year. This indicates that approximately 212 million individuals are connected to the internet out of a total population of 285 million (Hootsuite-We Are Social, 2025). One of the primary uses of the internet is product and brand discovery, accounting for 44.6% of users (Datareportal.com, 2023). Online shopping has become one of the most popular internet applications and is widely accepted as a common method for purchasing goods and services (Ha et al., 2021). E-commerce platforms operate 24 hours a day without incurring the overhead costs typically associated with physical retail stores (Kumar, 2018). During the New Normal period, the use of social media increased significantly as a tool for identifying products, gathering product information, evaluating options, and making purchase decisions (Mason et al., 2021). In the previous year, user rates for WhatsApp were 88.7%, Instagram 84.8%, Facebook 81.3%, and TikTok 63.1% (We Are Social Indonesia, 2025).

The various features of social media platforms offer unique opportunities for brands to engage with users on a personal level. As a result, marketers must adapt to each platform's characteristics to effectively reach consumers (Dwivedi et al., 2021). Social media also facilitates easier connections and product promotion for businesses (Phuong, 2019), and it is frequently used by customers to gather essential information about companies (Kar & Kushwaha, 2023). The use of social media as a promotional tool is referred to as Social Media Marketing (SMM), which is defined as a social and managerial process through which individuals and groups obtain what they need and want by creating and exchanging products and value with others (Kotler & Armstrong, 2021). From a business perspective, SMM involves using social media platforms to promote products and services (Hung & Khoa, 2022).

SMM plays a key role in driving Customer Engagement (CE), which refers to customers' interactions with a brand, product, or service beyond the act of consumption—such as reading articles, collaborating with employees, and contributing to enhanced experiences (Evans & McKee, 2010). CE denotes the level of connection between customers and a business, with higher levels associated with improved performance and competitiveness (Kumar & Nanda, 2019). SMM is considered an

essential tool for fostering CE, especially as many people spend significant time on social media (Simbolon & Law, 2022). CE can take various forms, such as purchasing products featured on followed accounts, liking posts, resharing content, and leaving comments (Rebecca Dolan et al., 2019). Tafesse and Wood (2021) found that the number of followers and the amount of content had a negative effect on follower engagement, while the number of followees had a positive influence. Kircova et al. (2018) noted that younger generations prefer Instagram, followed by Twitter and Facebook. The stronger the emotional connection to a social media account, the greater the interest in making a purchase. Account popularity on platforms such as Instagram and Twitter encourages CE, although Twitter followers tend to be more neutral, whereas Instagram posts elicit higher engagement when positive (Pouyan et al., 2022).

The ease of shopping and processing online transactions significantly contributes to impulse buying, particularly among younger consumers who are more prone to such behavior compared to older age groups (Ardiansyah et al., 2023). For decades, impulsive buying has been recognized as a major driver of sales growth for many brands (Kaur et al., 2021). The availability of product information and promotional discounts on social media accounts increases the likelihood of impulse purchases (Nabil & Cahyati, 2021). Additionally, website quality also affects impulse buying behavior (IBB) (Rahman & Hossain, 2023). However, Karim & Chowdhury (2021) found that website-related stimuli do not significantly influence consumer impulse buying behavior.

For businesses, SMM functions as a form of online advertising that leverages social interaction—among family, friends, colleagues, or even strangers, unconstrained by time and distance. Through the use of engaging content—such as images and videos—social media can effectively capture followers' attention, especially when trending topics are featured. Nurazizah (2022) found that TikTok, as an SMM platform, has a positive and significant influence on hedonic shopping motivation. Kananukul (2017) observed that Twitter tends to stimulate utilitarian motives, while Facebook caters more to hedonic motivations, offering users pleasure and entertainment. In contrast, Twitter provides utilitarian value through information and convenience. Deborah et al. (2022) also confirmed a positive and significant relationship between social media use and hedonic shopping motivation. Alimudin et al. (2023) examined the connection between hedonic shopping motivation and shopping lifestyle in relation to impulse buying, moderated by SMM. Their findings showed that SMM did not significantly affect impulse purchases when moderated by hedonic shopping motivation, indicating that consumers driven by hedonic motives are more influenced by factors beyond SMM.

Consumers who shop based on hedonic motivations often experience pleasure when visually browsing through products on social media, particularly in categories like fashion and electronics. The ease of online shopping and payment enhances the likelihood of impulse buying, with younger consumers being more susceptible (Ardiansyah et al., 2023). Therefore, hedonic shopping motivation can be said to influence online consumer impulse buying behavior (Cinjarevic et al., 2011; Dwikayana & Santika, 2021; Putu et al., 2022; Wahyuni & Rachmawati, 2018).

This study adopts the Stimulus-Organism-Response (S-O-R) approach. Stimulus (S) refers to external environmental cues encountered by individuals, including products, brands, logos, advertisements, packaging, prices, stores, retail environments, word-of-mouth, television, and various other influencing factors (Jacoby, 2002). The Organism (O) represents the subconscious processes through which stimuli are interpreted, encompassing perceptions and emotions. Response (R) denotes the individual's behavioral reaction to the stimulus (Jacoby, 2002). In this study, Social Media Marketing serves as the stimulus variable. Previous studies have also positioned SMM as the stimulus in the S-O-R framework (Hidayah & Astuti, 2023; Khoa & Huynh, 2023; Ric & Benazić, 2022; Segson & Tan, 2018; Sohaib et al., 2022; Vidyanata, 2022). Other studies classify Customer Engagement and Hedonic Shopping Motivation as part of the Organism (Islam & Rahman, 2017; Naqvi et al., 2020; Ndhlovu & Maree, 2023; Chang et al., 2011; Corbishley et al., 2022; Widagdo & Roz, 2021). Impulse Buying Behavior is considered the Response variable, as evidenced in the studies by Chen & Yao (2018), Huo et al. (2023), Karim & Chowdhury (2021), and Li et al. (2022).

Based on the discussion above, this study aims to investigate social media marketing from the perspective of the Stimulus-Organism-Response (S-O-R) model. Accordingly, the research questions are formulated as follows: (1) Is there a direct and indirect relationship between Social Media Marketing (SMM), Customer Engagement (CE), and Impulse Buying Behavior (IBB)? (2) Is there a direct and indirect relationship between Social Media Marketing (SMM), Hedonic Shopping Motivation (HSM), and Impulse Buying Behavior (IBB)?

1.1. Social media marketing

Direct marketing has evolved rapidly in recent years, particularly through digital and social media marketing channels (Kotler & Armstrong, 2021). Social Media Marketing (SMM) refers to the process by which organizations utilize social networking sites to enhance their corporate presence and visibility, often linked to their official websites. In addition, organizations use social media platforms to communicate with potential customers, providing updates on internal developments, product or model launches, and the latest organizational news (Khan & Jan, 2015). The widespread adoption of the internet and digital technologies has significantly influenced both consumer behavior and the strategies employed by marketers to engage their audiences.

SMM encompasses a range of activities, including online communities, social networking, and blog-based marketing (Singh & Attarwala, 2019). It involves leveraging social media platforms to attract public attention. These programs typically

focus on creating engaging content that captures user interest and encourages sharing across their personal social networks (Chandwani, 2018). According to Choi et al. (2016), SMM offers several advantages to firms, such as generating positive word-of-mouth (WOM), enhancing customer equity, increasing brand loyalty, and positively influencing purchase intentions for both products and services.

SMM provides three distinct advantages over traditional marketing strategies (Singh & Attarwala, 2019). First, it enables marketers not only to present products and services but also to receive feedback, including customer complaints and suggestions. Second, it facilitates the identification of peer groups or influencers within various audience segments, who can develop emotional connections with brands and contribute to organic brand growth. Third, it is cost-effective, as registration and usage of social media platforms generally involve no financial cost.

According to Kim and Ko (2012), as elaborated by Godey et al. (2016), the core dimensions of social media marketing include Entertainment, Interaction, Trendiness, Customization, and Word of Mouth. This study focuses on four major social media platforms widely used in Indonesia: WhatsApp, Facebook, Instagram, and TikTok.

1.2. Customer Engagement

Customer engagement refers to the intensity of an individual's participation in and connection with an organization's offerings and activities, initiated either by the customer or the organization itself (Vivek et al., 2012). Due to the interactive and innovative nature of social media, the effects of customer engagement can be observed through social media indicators such as expressions of approval, ratings, feedback, and content sharing (Barger & Labrecque, 2013). Social media users who engage in actions such as rating, voting, commenting, liking, or endorsing content demonstrate a moderate level of engagement. Meanwhile, those who add friends, build fan bases, or develop networks on social platforms display the highest levels of engagement (Sinha et al., 2011; Weitzl & Einwiller, 2018).

The most commonly identified dimensions of customer engagement include cognitive, emotional, and behavioral components (Kuvykaite & Tarute, 2015), along with activation (Hollebeek et al., 2014). The cognitive and affective dimensions encompass customers' thoughts and emotional experiences during brand interactions (Vivek et al., 2012), involving the levels of thought, processing, and elaboration related to a brand, which reflect the emotional side of engagement (Hollebeek et al., 2014). The behavioral dimension considers potential customer participation both within and beyond the context of direct exchange (Vivek et al., 2012). Activation reflects the level of energy, effort, and time that consumers are willing to invest in a brand, indicating deliberate customer engagement (Hollebeek et al., 2014).

Online customer engagement differs significantly from offline engagement due to the nature of interaction between customers, brands, and other users. When social media is utilized, influencers—as strategic partners of marketers—can become valuable assets by fostering strong emotional and behavioral attachment among their followers (Risafani et al., 2022).

1.3. Hedonic Shopping Motivation

In Tauber's (1972) seminal study, several foundational premises were developed to explain consumer shopping motivation. The core premise posits that consumers are driven not only by utilitarian needs directly related to product acquisition, but also by a variety of psychosocial needs. These motives can be categorized into personal motives—such as role-playing, diversion, self-gratification, learning about new trends, engaging in physical activity, and seeking sensory stimulation—and social motives, which include social experiences, communication with others, peer group attraction, status and authority, and the pleasure of bargaining. Shopping occurs not only when consumers need a particular product and are willing to allocate time and money to travel to a store, but also when they seek attention, wish to be with friends, want to meet like-minded individuals, feel the need for physical activity, or simply have leisure time available.

Hedonic motivation is associated with pleasure, excitement, and the alleviation of negative emotions, and it has been found to enhance the likelihood of online purchase intentions (Johannes et al., 2017; Santoso et al., 2019). According to Babin and Attaway (2000), hedonic shopping reflects the value derived from the shopping experience itself. The general principle underlying hedonic motivation is that individuals are inclined to initiate actions aimed at enhancing positive experiences and reducing negative ones (Kaczmarek, 2018). Positive experiences are often expressed through a willingness to prolong or repeat the activity. Individuals driven by hedonic motives tend to devote considerable time to engaging in such activities.

Arnold and Reynolds (2003) identify six major categories of hedonic shopping motivation: (1) Adventure shopping, (2) Social shopping, (3) Gratification shopping, (4) Idea shopping, (5) Role shopping, and (6) Value shopping.

1.4. Impulse Buying Behaviour

Impulse buying is defined as a purchase made without prior planning, in which consumers make decisions without evaluating the product in advance (Faber & Vohs, 2010; Parboteeah, 2005). This behavior is characterized by sudden, unplanned, and spontaneous purchases (Karim & Chowdhury, 2021). The rapid development of technology has created numerous conveniences in online purchasing. As stated by Greenfield (1999) and La Rose (2001) in Aragoncillo and Orús (2018), online shopping channels tend to induce more impulse buying compared to offline ones. This is due to factors such as a broader

variety of products, the ability to make purchases 24/7 from any location, and the use of personalized marketing strategies. When shopping online, consumers are more likely to act impulsively, motivated by simplified purchasing procedures and the ease of accessing products that require only a few clicks to order, along with fast delivery services and the absence of social pressure (Rahman & Hossain, 2023). Zhao et al. (2022) found that external stimuli are strongly influenced by website characteristics and functionalities, which include website security, ease of navigation, and visual design. According to Stern (1962), impulse buying can be categorized into four types. Pure impulse buying refers to behavior that entirely departs from planned or rational shopping, driven purely by emotional reaction. Reminder impulse buying arises when consumers are reminded of their needs upon encountering a product display. Suggestion impulse buying occurs when consumers are influenced by promotional programs or visual stimuli, even if they are unfamiliar with the product being offered. Lastly, planned impulse buying refers to purchasing decisions that are somewhat premeditated but ultimately triggered by promotional campaigns, such as special discounts, new product features, or substitute product offers.

1.5. Stimulus-Organism-Response (S-O-R)

The Stimulus-Organism-Response (S-O-R) model was originally proposed by Mehrabian and Russell (1974) within the field of environmental psychology (Jacoby, 2002). The model comprises three core components: the stimulus, which serves as the independent variable, refers to any object or situation capable of eliciting human behavior (Chan et al., 2017); the organism, acting as the mediating variable, encompasses internal processes such as emotions, perceptions, feelings, and cognitive states; and the response, which functions as the dependent variable, is the outcome of an individual's cognitive evaluations and emotional reactions to environmental stimuli (Sherman et al., 1997). Cognitive reactions involve the process of handling and interpreting available information (Fang, 2014), while affective reactions reflect an individual's emotional responses—such as satisfaction and happiness—that ultimately influence behavioral outcomes (Kamboj et al., 2018; Zhang et al., 2022).

The S-O-R model has been widely used to explain consumer behavior phenomena, particularly during online shopping festivals, where stimuli such as sales promotions are shown to trigger specific consumer responses (Yulianto et al., 2021). In the context of this study, social media marketing functions as the stimulus, which influences impulse buying behavior as the response variable. This relationship is mediated by two organism-level constructs: customer engagement and hedonic shopping motivation, which represent the internal emotional and cognitive mechanisms through which external stimuli shape consumer responses.

1.6. Social media marketing and customer engagement

Dolan et al. (2017) found that social media marketing has a positive and significant effect on customer engagement, with consumer involvement on social media driven by both rational and emotional appeals. Rational appeals on social media were shown to have a stronger impact in generating both active and passive customer engagement, while emotional appeals were more effective in engaging passive users than active ones. These findings are supported by several other studies (Balathandayutham & Anandanatarajan, 2020; Bororing & Dwianto, 2023; Dissanayake et al., 2019; Muchardie et al., 2016; Muda et al., 2023; Pouyan et al., 2022; Ulya et al., 2015).

Hypothesis 1: Social media marketing has a positive and significant effect on customer engagement.

1.7. Social media marketing and impulse buying behaviour

Advertisements on social media must present information that is easily understood by consumers, as the content of such advertisements has been shown to positively and significantly influence impulse buying behavior (Al-Khalifa et al., 2021). Marketing strategies that leverage social media platforms can stimulate impulse buying tendencies (Rahayu et al., 2020). These findings are supported by previous studies conducted by Bansal and Kumar (2019), Kazi et al. (2019), and Reddy and Azeem (2022). However, Kazi et al. examined factors such as social network marketing, electronic word of mouth (E-WOM), hedonic motivation, and trust as key variables influencing social media marketing. All four variables were found to significantly affect impulse buying behavior. Similarly, Bansal and Kumar (2019) identified several factors influencing social media marketing, including hedonic motivation, website quality, trust and ethical values, situational variables, and variety seeking. Each of these factors was found to have a positive and significant impact on impulse buying.

Hypothesis 2: Social media marketing has a positive and significant effect on impulse buying behavior.

1.8. Customer engagement and impulse buying behaviour

Customer engagement is fostered through the presentation of informative and appealing content by social media account holders. Forms of customer engagement include commenting, liking, and resharing content from one account to another. A high level of customer engagement on a social media account has been shown to trigger consumer impulse buying behavior (Nabil & Cahyati, 2021). This finding is supported by the studies of Fitri and Mujasih (2021) and Maulana (2022). However, there remains a limited body of research specifically examining the relationship between customer engagement and impulse buying behavior.

Hypothesis 3: Customer engagement has a positive and significant effect on impulse buying behavior.

1.9. Social media marketing, customer engagement and impulse buying behaviour

To date, no studies have been identified that specifically examine the relationship between social media marketing (SMM) and impulse buying behavior (IBB) through the mediating role of customer engagement (CE). However, previous research has explored these relationships individually. The link between SMM and CE has been investigated in several studies (Balathandayutham & Anandanatarajan, 2020; Bororing & Dwianto, 2023; Dissanayake et al., 2019; Muchardie et al., 2016; Muda et al., 2023; Pouyan et al., 2022; Ulya et al., 2015). Similarly, the relationship between SMM and IBB has been established by Bansal and Kumar (2019), Kazi et al. (2019), and Reddy and Azeem (2022). In addition, the influence of CE on IBB has been demonstrated in the studies by Fitri and Mujiasih (2021) and Maulana (2022).

Hypothesis 4: Social media marketing, mediated by customer engagement, has a positive and significant effect on impulse buying behavior.

1.10. Social media marketing and hedonic shopping motivation

For businesses, social media marketing serves as a form of online advertising that leverages the cultural practice of socializing with family, friends, colleagues, or new acquaintances, unconstrained by time or geographic boundaries. By utilizing content in the form of information, images, and videos, social media accounts can effectively capture the attention of followers—especially when trending topics are featured. Nurazizah (2022) found that TikTok, as a social media marketing platform, has a positive and significant effect on hedonic shopping motivation. This finding is supported by previous studies conducted by Deborah et al. (2022), Kananukul (2017), Parker and Wang (2016), and Sani et al. (2024).

Hypothesis 5: Social media marketing has a positive and significant effect on hedonic shopping motivation.

1.11. Hedonic shopping motivation and impulse buying behaviour

When consumers possess hedonic motivation, it often leads directly to impulse buying (Evangelin et al., 2021). Consumers who shop with hedonic motives tend to search for and purchase products impulsively simply because they enjoy the experience, without concern for the outcome (Jarboe & McDaniel, 1987). This finding is supported by previous studies (Dwita & Retsi, 2019; Ustanti, 2018; Yap, 2022). In the context of e-commerce, both hedonic and utilitarian motivations have been identified as key drivers of impulse buying behavior, with hedonic motivation exerting a direct and positive influence (Zheng et al., 2019). However, this conclusion is not supported by Brabo et al. (2021), who found that while price and positive emotions significantly influence impulse buying, hedonic shopping motivation does not have a significant effect.

Hypothesis 6: Hedonic shopping motivation has a positive and significant effect on impulse buying behavior.

1.12. Social media marketing, hedonic shopping motivation and impulse buying behaviour

The more appealing the marketing programs presented on social media, the more likely they are to shift consumer behavior toward a hedonic orientation, ultimately leading to impulse purchases—even when consumers are aware that the products they buy do not meet their actual needs (Evangelin et al., 2021). This finding is supported by previous research (Baladini et al., 2021; Deborah, 2022; Nurazizah, 2022; Yaprak & Çoban, 2023).

Hypothesis 7: Social media marketing, mediated by hedonic shopping motivation, has a positive and significant effect on impulse buying behavior.

To address the research questions, this study adopts the Stimulus–Organism–Response (S-O-R) framework. The conceptual framework and hypothesized relationships among variables are illustrated in Figure 1.

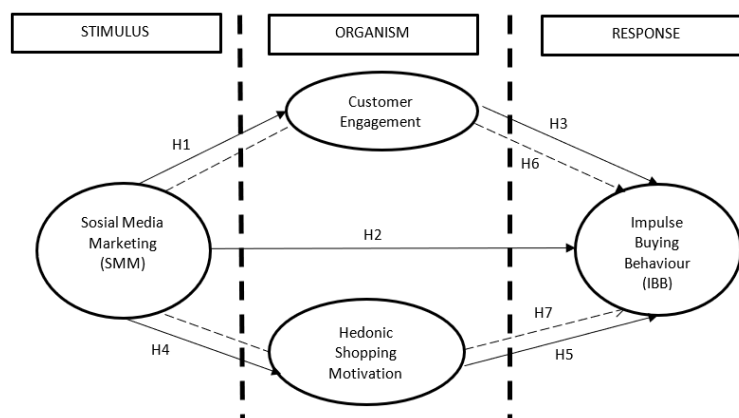


Figure 1 Research Model.

2. Materials and Methods

This study employs a quantitative research design, collecting numerical or statistical data based on responses from consumers who have social media accounts and have previously made purchases through those platforms. The population targeted in this study consists of consumers who have accounts on social media platforms (Facebook, Instagram, TikTok, and WhatsApp) and have engaged in purchases via these platforms. As the total population is unknown, the sample size was determined using the guideline provided by Joseph Hair et al. (2017), which recommends a range of 5 to 10 times the number of indicators. In this study, with 21 indicators, a sample size of 210 respondents was determined using the 10-times rule. The sampling technique applied is non-probability sampling with a purposive sampling approach, selecting respondents who meet the criteria of having social media accounts (Facebook, Instagram, TikTok, WhatsApp) and having previously made purchases through social media accounts.

2.1. Questionnaire Design

Based on the objective of this study, which is to analyze the influence of social media marketing (SMM), customer engagement (CE), hedonic shopping motivation (HSM), and impulse buying behavior (IBB) using the Stimulus-Organism-Response (S-O-R) framework, the questionnaire was developed by adopting indicators from several previous studies. The indicators for SMM were adapted from Kim and Ko (2012), CE from Kuvykaite and Tarute (2015), HSM from Arnold and Reynolds (2003), and IBB from Verhagen and Dolen (2011).

The questionnaire consists of two main sections. The first section includes general demographic questions such as gender, age, monthly income, average expenditure on online shopping over the past three months, the social media platforms most actively used, the average time spent browsing social media per day, the frequency of online purchases made through social media accounts in the last three months, and the type of products most frequently purchased via social media accounts.

The second section measures respondents' perceptions of each variable using a series of statements derived from the selected indicators. Responses were recorded using a five-point Likert scale, where 1 indicates "strongly disagree" and 5 indicates "strongly agree."

2.2. Validity dan reliability

Validity is used to measure the correlation between indicators and the variables being assessed, while reliability evaluates the consistency of the variables employed in this study. Validity was assessed using loading factors, Average Variance Extracted (AVE), and the Fornell & Larcker criterion. Reliability was measured using Cronbach's alpha and composite reliability.

Convergent validity was evaluated through standardized loading factors, which represent the degree of correlation between each indicator and its corresponding construct. An indicator is considered valid if it has a loading factor greater than 0.7. However, some scholars argue that a loading factor value above 0.5 is acceptable (Cheung et al., 2024). In this study, the researcher adopted the threshold of standardized factor loading > 0.5.

The loading factor values for each indicator are presented as follows Table 1:

Table 1 Loading Factor Values for Each Indicator.

Variable	Indicator	Loading Factor	Remark
Social Media Marketing (SMM)	SMM1	0,774	Valid
	SMM2	0,778	Valid
	SMM3	0,769	Valid
	SMM4	0,682	Valid
	SMM5	0,766	Valid
Customer Engagement (CE)	CE1	0,824	Valid
	CE2	0,867	Valid
	CE3	0,833	Valid
Hedonic Shopping Motivation (HSM)	HSM1	0,714	Valid
	HSM2	0,765	Valid
	HSM3	0,734	Valid
	HSM4	0,727	Valid
	HSM5	0,745	Valid
	HSM6	0,685	Valid
Impulse Buying Behaviour (IBB)	IBB1	0,766	Valid
	IBB2	0,733	Valid
	IBB3	0,739	Valid
	IBB4	0,713	Valid
	IBB5	0,668	Valid
	IBB6	0,734	Valid
	IBB7	0,578	Valid

Based on the data presented above, it can be observed that all loading factor values for the indicators used in this study are greater than 0.5. This indicates that each indicator has a positive correlation with the variable it is intended to measure. In addition to the loading factor values, the validity of each construct can also be assessed using the Average Variance Extracted (AVE). A construct is considered valid if it has an AVE value greater than 0.5 (Hair et al., 2011). The AVE values for each variable are presented in the following table 2:

Table 2 Average Variance Extracted (AVE), Cronbach’s Alpha, and Composite Reliability Values

Variable	AVE	Cronbach’s Alpha	Composite Reliability
Sosial Media Marketing (SMM)	0,569	0,813	0,868
Customer Engagement (CE)	0,708	0,794	0,879
Hedonic Shopping Motivation (HSM)	0,531	0,825	0,872
Impulse Buying Behaviour (IBB)	0,503	0,831	0,874

As shown in Table 2, the AVE values for all variables in this study are greater than 0.5. These results further support the assessment of convergent validity described earlier, indicating that the indicators used in this study effectively represent their respective constructs. According to Joseph Franklin Hair et al. (2022), a construct is considered reliable if the values of composite reliability and Cronbach’s alpha fall within the range of 0.60 to 0.90. The table above shows that both composite reliability and Cronbach’s alpha values are above 0.70, suggesting that the variables used in this study are reliable and demonstrate a high level of internal consistency.

To further support the validity testing, the Fornell-Larcker Criterion is employed in addition to loading factor values. According to this criterion, a construct should have the square root of its Average Variance Extracted (AVE) greater than the correlations with any other construct in the model. Once this condition is satisfied, discriminant validity is considered to be established. The Fornell-Larcker results are presented in the following table 3:

Table 3 Fornell-Larcker Criterion.

Research Variables	Customer Engagement (CE)	Hedonic Shopping Motivation (HSM)	Impulse Buying Behaviour (IBB)	Sosial Media Marketing (SMM)
Customer Engagement (CE)	0,841			
Hedonic Shopping Motivation (HSM)	0,611	0,729		
Impulse Buying Behaviour (IBB)	0,483	0,611	0,707	
Sosial Media Marketing (SMM)	0,487	0,526	0,345	0,754

Based on the data presented above, it can be observed that the square root values of the AVE for each construct are greater than the correlations between constructs. This indicates that the constructs possess good discriminant validity. In other words, the set of indicators grouped within the model are expected to measure distinct dimensions, rather than being unidimensional (i.e., where a single indicator would measure more than one construct).

3. Results

The majority of respondents in this study were female, comprising 129 individuals or approximately 61.43%, while the remaining 81 respondents (39.57%) were male. The largest age group was 21–25 years, totaling 79 respondents (37.78%), followed by those aged 16–20 years with 65 respondents (30.74%), respondents over 36 years old with 36 individuals (17%), those aged 26–30 years with 17 individuals (8.15%), and finally, respondents aged 31–35 years comprising 13 individuals (6.30%).

In terms of actively used social media platforms, all respondents reported using WhatsApp (100%, n = 210). Additionally, 151 respondents (72.20%) used Instagram, 106 respondents (50.70%) used TikTok, and 65 respondents (31.10%) used Facebook.

Regarding the average time spent browsing social media each day, the majority of respondents (103 individuals or 48.94%) reported spending more than 4 hours daily. This was followed by 47 respondents (22.21%) who spent 3–4 hours, 44 respondents (21.12%) who spent 1–2 hours, and the remaining 16 respondents (7.81%) who spent less than 1 hour per day.

As shown in Table 4, the Standardized Root Mean Square Residual (SRMR) values for the saturated and estimated models were 0.093 and 0.113, respectively. SRMR values range from 0 to 1.0, with values below 0.05 generally considered to indicate a good model fit. SRMR values tend to be lower when the number of parameters in the model is high and the sample size is large (Hooper et al., 2008).

The R-squared (R²) value ranges from 0 to 1, with higher R² values indicating that a greater proportion of variance in the dependent (endogenous) variable is explained by the independent (exogenous) variables.



The R-squared (R^2) value for Customer Engagement (CE) is 0.237, indicating that the variables Social Media Marketing (SMM), Hedonic Shopping Motivation (HSM), and Impulse Buying Behavior (IBB) collectively explain 23.7% of the variance in CE. The Hedonic Shopping Motivation (HSM) variable has an R^2 value of 0.277, meaning that SMM, CE, and IBB explain 27.7% of the variance in HSM. Meanwhile, Impulse Buying Behavior (IBB) has an R^2 value of 0.392, suggesting that SMM, CE, and HSM together account for 39.2% of the variance in IBB.

Table 4 Goodness of Fit.

	Saturated model	Estimated model
SRMR	0,093	0,113
d_ ULS	2,001	2,972
d_ G	0,560	0,625
Chi-square	667,888	707,035
NFI	0,686	0,668

To evaluate the explanatory power of the model, the coefficient of determination (R-square) for each endogenous variable was calculated. The results are summarized in Table 5.

Table 5 Nilai R-Square.

Variables	R-square	R-square adjusted
Customer Engagement	0,237	0,233
Hedonic Shopping Motivation	0,277	0,274
Impulse Buying Behaviour	0,392	0,383

Hypothesis testing was conducted using the bootstrapping procedure on the proposed model, utilizing the SmartPLS 4.0 analysis tool. Bootstrapping provides the significance levels (p-values) for both direct and indirect effects within the model. The results of the bootstrapping analysis are presented in the following table 6:

Table 6 Hypothesis Testing Results.

No.	Relationships Between Variables	Original Sample (O)	t-Statistics (t /STDEV)	P-Values
1.	SMM -> CE	0,487	6,718	0,000
2.	SMM -> IBB	0,345	3,907	0,000
3.	CE -> IBB	0,176	2,214	0,027
4.	SMM -> CE -> IBB	0,086	2,079	0,038
5.	SMM -> HSM	0,526	6,628	0,000
6.	HSM -> IBB	0,507	6,862	0,000
7.	SMM -> HSM -> IBB	0,267	5,408	0,000

4. Discussions

The principal findings of this study empirically affirm that Social Media Marketing (SMM) significantly influences Impulse Buying Behavior (IBB) both directly and indirectly, through the mediating roles of Customer Engagement (CE) and Hedonic Shopping Motivation (HSM). These results directly address the research objectives and questions, which sought to determine the extent to which SMM shapes impulsive consumer behavior in digital environments. By adopting a quantitative field methodology using SEM-PLS, the study successfully quantified and validated the relationships between the constructs, thus offering a data-driven explanation for the psychological and behavioral processes triggered by social media interactions.

The interpretation of the findings within the Stimulus-Organism-Response (S-O-R) theoretical framework further reinforces the structural coherence of the model. The results confirm that SMM, as an external stimulus, activates internal psychological mechanisms—represented by CE and HSM—which subsequently generate behavioral responses in the form of impulse buying. This aligns with Jacoby’s (2002) assertion that consumer behavior is not solely a direct outcome of external stimuli but is mediated by cognitive and affective processing within the organismic stage. The significant path from SMM to HSM particularly underscores the emotional resonance of social media content, highlighting its power to stimulate hedonic motives such as pleasure, novelty-seeking, and escapism (Chan et al., 2017). These organismic reactions ultimately culminate in impulsive purchase decisions, consistent with the premises of environmental psychology embedded in the S-O-R model.

In comparing these findings with prior research, the current study’s results are largely consistent with existing literature, although they also diverge in certain areas. The strong relationship identified between SMM and CE corroborates the work of Balathandayutham and Anandanatarajan (2020), who observed that interactive content on digital platforms fosters deeper consumer involvement and brand resonance. Similarly, the link between CE and IBB supports the assertions of Risyafani et al. (2022), who found that emotional attachment to social media accounts increases impulsive tendencies, especially in visually driven categories like cosmetics and fashion. However, this study contrasts with Brabo et al. (2021), who argued that CE alone may not be sufficient to influence IBB unless combined with motivational or contextual triggers. This deviation may stem from differences in measurement constructs, demographic profiles, or platform-specific user behaviors.



The positive and significant influence of SMM on HSM also aligns with the results of Nurazizah (2022), who found that TikTok-based marketing campaigns heightened hedonic responses among young consumers. However, it diverges from the findings of Alimudin et al. (2023), who reported that the moderating role of SMM was negligible when hedonic motives were already strong, suggesting a possible threshold effect. Such contradictions underscore the need for contextual sensitivity in modeling digital consumer behavior, as cultural and platform-specific nuances may moderate the strength of these relationships.

This article makes several theoretical contributions to the literature. First, it extends the S-O-R framework by empirically validating a dual-mediation model in which both CE and HSM act as organismic variables, thereby offering a more integrated explanation of digital impulse buying behavior. While previous applications of the S-O-R model have predominantly focused on single mediators or linear relationships, this study demonstrates a more complex mechanism in which emotional and cognitive pathways operate concurrently (Kamboj et al., 2018). Second, the study bridges gaps in digital marketing literature by explicitly connecting consumer engagement and hedonic motivation—two constructs often examined in isolation—within a single behavioral model (Naqvi et al., 2020). This integration highlights the dual-process nature of consumer decision-making in online contexts, where both affective gratification and relational commitment play critical roles.

From a practical standpoint, the study provides actionable insights for marketers seeking to leverage social media as a catalyst for impulse buying. The results suggest that SMM strategies should be designed to simultaneously trigger both affective and behavioral responses. For instance, brands can increase hedonic appeal through visually stimulating and emotionally evocative content, while fostering engagement through interactive features like polls, Q&As, and influencer collaborations. This dual approach not only enhances consumer satisfaction but also increases conversion potential. Furthermore, the significance of indirect effects through CE and HSM implies that marketers must go beyond product-centric advertising to focus on emotional storytelling and community-building efforts (Kim & Ko, 2012).

The novelty of this research lies in both its conceptual and contextual contributions. Conceptually, the integration of CE and HSM as parallel mediators in the S-O-R framework is an innovative contribution that advances the theoretical modeling of digital consumer behavior. To the best of the authors' knowledge, no previous studies have simultaneously tested this configuration using SEM-PLS in the context of multi-platform social media usage. This model offers a more nuanced understanding of how marketing stimuli are internalized and acted upon in real time by consumers. Contextually, the study provides rare empirical evidence from Indonesia—a market characterized by rapid digital adoption and diverse social media engagement patterns (We Are Social, 2025). By analyzing data from users of WhatsApp, Instagram, Facebook, and TikTok, this research captures a wide spectrum of user behaviors and preferences, thus enhancing the generalizability of the findings to other emerging economies.

Moreover, this study addresses a notable gap in the empirical literature on impulse buying by focusing on the mediating mechanisms that connect external stimuli to consumer responses. Unlike traditional studies that rely solely on direct effects, this research uncovers the underlying psychological structures that facilitate impulsive decision-making, thereby offering a more holistic view of the consumer decision process in digital environments (Fang, 2014). This nuanced approach contributes to the growing body of knowledge on consumer psychology and e-commerce by emphasizing the importance of affective and interactive dimensions in shaping purchase behavior.

5. Conclusions

This study has empirically demonstrated that social media marketing plays a significant role in influencing consumer impulse buying behavior, both directly and indirectly through customer engagement and hedonic shopping motivation. By employing a quantitative field approach and utilizing the S-O-R (Stimulus–Organism–Response) theoretical framework, the findings confirm that marketing stimuli presented through social media platforms activate emotional and cognitive responses that subsequently drive spontaneous purchasing actions. Each of the proposed hypotheses was supported, indicating a robust relationship among the observed constructs and offering strong empirical evidence to answer the research questions concerning the mechanisms through which social media influences consumer decision-making in online environments.

Theoretically, this study extends the application of the S-O-R model by incorporating dual mediators—engagement and hedonic motivation—within a comprehensive structural framework. This dual-path analysis adds conceptual depth to existing behavioral models by illustrating how digital content not only captures consumer attention but also stimulates internal psychological processes that influence behavior. Practically, the findings offer valuable insights for marketers, particularly those operating in digitally saturated markets, by emphasizing the importance of interactive and emotionally resonant content in fostering deeper consumer involvement and encouraging unplanned purchases. The integration of multiple social media platforms also provides a more holistic view of digital consumer dynamics, reinforcing the need for platform-specific content strategies.

Future research could benefit from examining generational differences in digital impulse buying or exploring the moderating effects of product categories and content types. Additionally, longitudinal studies may be useful to assess how sustained exposure to social media marketing influences consumer behavior over time. For practitioners, investing in the

personalization of content and fostering long-term consumer engagement may serve as effective strategies to strengthen brand-consumer relationships and enhance the efficacy of social media marketing in driving behavioral outcomes.

Ethical considerations

This study was conducted with strict adherence to ethical research principles. All participants provided informed consent, and their anonymity and confidentiality were fully protected. No personal data were collected, and participation was entirely voluntary without any form of coercion or harm. The research is original, free from plagiarism, and has not been submitted or published elsewhere. Data may be made available to authorized parties upon request to ensure transparency and accountability.

Conflict of Interest

The authors declare no conflicts of interest.

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