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## 即時滿足還是後悔？探討社群媒體上衝動購買的前置因素與衝動購物後的感受

許秋萍\*

國立暨南國際大學國際企業學系

羅婕瑀

長榮海運客服商務本部

### 摘要

本研究欲探討消費者在社群媒體上衝動購買的前置因素與結果，並提出概念性模型說明推薦人、產品相關信號與人際關係如何影響消費者在社群媒體上的瀏覽行為和衝動購買。此外，本研究亦同時探討衝動購買後消費者可能產生正向即時滿足以及負面後悔的感受。本研究利用 Smart PLS 3 進行實證分析，研究對象為曾經在社群媒體上進行衝動購物的消費者，共有 445 位受測者完成問卷調查。實證結果顯示，推薦人的相似度、喜愛度，以及推薦產品貼文的美學吸引力對消費者的瀏覽行為具有正向顯著的影響，並進而正向影響衝動購買。觀察學習對衝動購買也有正向顯著的影響。此外，衝動購買對即時滿足與後悔感受均有正向顯著的影響。

**關鍵詞：**衝動購買、推薦人特質、觀察學習、即時滿足、後悔

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\* 本文通訊作者。電子郵件信箱：cphsu@ncnu.edu.tw  
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# Instant Gratification or Regret?

## Exploring Antecedents of Impulse Buying on Social Media and Postpurchase Feelings

Chiu-Ping Hsu\*

Department of International Business Studies, National Chi Nan University

Chieh-Yu Lo

Department of Customer Data Processing, Evergreen Marine Corporation

### Abstract

This study explored the antecedents and consequences of impulse buying on social media platforms. Furthermore, it proposed a conceptual model of how recommender- and product-related signals and online social influence affect the browsing activities and impulse purchase behaviors of consumers on social media platforms. This study investigated the positive feeling of instant gratification and the negative feeling of regret after an impulse purchase. Smart PLS 3 was used to estimate the proposed conceptual model. In total, 445 consumers who made impulsive purchases through social media platforms completed a questionnaire survey. The empirical results indicated that the similarity to users and likeability of recommenders as well as the aesthetic appeal of recommended product posts positively and significantly influenced the browsing activities of consumers; these factors in turn promoted impulse buying. Observational learning also had a significant and positive effect on impulse buying. Furthermore, impulse buying had a significant and positive effect on instant gratification and regret.

**Keywords:** Impulse buying, Recommender characteristics, Observational learning, Instant gratification, Regret

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\* Corresponding author. Email: cphsu@ncnu.edu.tw

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## 1. Introduction

In today's retail industry, impulse purchases substantially contribute to sales of products and services (Sundström et al. 2019; Zhang, Leng, & Liu 2020). According to Saleh (2017), approximately 84% of shoppers have made impulse purchases, and impulse purchases contribute to 40% of e-commerce revenue. In addition, studies have reported that more than half of online purchases are impulsive (Wu, Chiu, & Chen 2020; Zheng et al. 2019). E-commerce companies should recognize the opportunity presented by impulse purchases. Redine et al. (2022) indicated that studies on impulse buying increased exponentially from 2010 to 2021; they ascribed this increase to the proliferation of e-commerce, m-commerce, and social commerce. As a result, interest in impulse buying has increased in the retail industry and academia.

Guttman (2020) indicated that 86.3% of companies use social media platforms (e.g., Facebook and Instagram) for marketing purposes. The rapid growth of e-commerce (e.g., sales and the number of e-commerce retailers) on social media platforms has affected consumer purchase behavior (Xiang et al. 2016). E-commerce on social media platforms is referred to as social commerce (Redine et al. 2022). The proliferation of social commerce and the increased use of social media platforms have presented new opportunities for marketers. Social commerce has grown in prominence as a customer tool for exchanging commercial information regarding products and services (Hu, Chen, & Davison 2019). Two primary streams of research in the social commerce literature have respectively examined consumers' social behavior and their buying behavior (or intention; Zhao et al. 2023). Individuals' increased use of social media has led to an increase in impulse buying (Aragoncillo & Orus 2018; Lahath et al. 2021). In a review of the empirical literature on social commerce from 2017 to 2021, Zhao et al. (2023) determined that impulsive buying is one of the predominant themes in the social commerce context (along with live streaming, community commerce, social sharing, and Danmu culture). Some studies have examined the factors that lead to impulse buying in the social commerce context (e.g., Lo et al. 2022; Zafar et al. 2021a; Vazquez et al. 2020; Xu et al. 2020). Hence, impulse buying in the social commerce context is a major topic; nevertheless, relevant studies on this topic are limited. Most relevant studies have examined impulse buying in the e-commerce and traditional retail contexts (Redine et al. 2022). Redine et al. (2022) opined that future research should focus on impulse buying in new contexts, such as social commerce. Accordingly, the present study answered that call and endeavored to examine impulse buying on social media platforms.

Social media users are likely to be influenced by online product recommendations and to make impulsive purchases (Chen, Lu, Wang, & Pan 2019a;

Huang 2016). As a result, many businesses have increased their expenditure on advertising products and services on social media platforms to capitalize on consumers' presence on such platforms (Lee, Hosanagar, & Nair 2018). Because social commerce is a nascent research topic, only a few social commerce-specific antecedents of impulse buying have been identified, such as celebrity social media posts (Zafar et al. 2021a) and online social influence (Chen, Su, & Widjaja 2016; Zafar et al. 2021a; Zafar et al. 2021d; Zhang & Zhao 2020). The present study explored the social commerce-specific factors that lead social media users to browse product recommendation posts and make impulse purchases on social media platforms. In addition, postpurchase feelings and experiences affect consumers' attitudes and behavior, such as engaging in positive word-of-mouth intention (Konuk 2019) and switching brands (Wong et al. 2019). Therefore, understanding consumers' feelings after impulse buying is crucial. However, studies on impulse buying in social commerce have primarily focused on the antecedents of impulse buying (e.g., Zafar et al. 2021a; Zhang & Zhao 2020; Chen et al. 2016). To bolster the understanding of postpurchase feelings in the context of social commerce impulse buying, this study examined consumers' feelings after impulse purchases.

In the social commerce context, retailers post product-related content on social media platforms and leverage the influence of product recommenders to stimulate impulse buying. Companies (senders) transmit relevant signals to consumers (receivers) through social platforms (signal environments), and information asymmetry exists between these parties. Drawing on signal theory (Connelly et al. 2011; Spence 1974), this study examined the antecedents of consumer browsing behavior on social media. Studies have demonstrated that Facebook posts by online celebrities can encourage users to make impulsive purchases (Zafar et al. 2021a). In other words, recommender-related signals can act as antecedents to impulse buying (Chen et al. 2019a). For consumers, product recommenders' similarity to themselves, expertise, and likability compel them to make impulse purchases (Xiang et al. 2016). The present study investigated the influence of product recommenders' characteristics (similarity, expertise, and likeability) on user behaviors related to browsing and impulse buying.

With regard to product-related signals, branded content on social media, such as that featuring aesthetically pleasing colors and photographs, can evoke strong emotions (Waqas, Hamzah, & Salleh 2021) and provide sensory gratification through visual or auditory appeal (Markowitz-Elfassi, Yarchi, & Samuel-Azran 2019). Aesthetic appeal is a critical antecedent of impulse buying (Chen et al. 2019a). Therefore, the aesthetic appeal of a social media post containing a product recommendation is an important antecedent of browsing activity and impulse buying.

Online social interaction, a distinguishing characteristic of social commerce, is essential for enhancing customers' browsing experiences (Chen, Lu, Gupta, & Pan 2019b), and it encourages social media users to buy impulsively (Zheng et al. 2019). Research has indicated that online social influence, such as consumer reviews (Zafar et al. 2021d) and observations of various users' attitudes and preferences, affect the purchasing behavior of social media users (Zafar et al. 2021a; Zhang & Zhao, 2020; Chen et al. 2016). These findings highlight the crucial role of online social influence in impulse buying in social commerce. On the basis of the preceding discussion, this study analyzed the aforementioned antecedents of impulse buying in social commerce from three perspectives: recommender-related signals (product recommenders' similarity, expertise to users, and likeability), aesthetic appeal, and observational learning.

In addition to exploring the antecedents of impulse buying, this study investigated consumers' feelings after impulse purchases. Impulse buying is dominated by affective rather than cognitive processes and involves rapid decision-making (Vohs & Faber 2007). After making an impulse purchase, consumers may experience positive feelings (Weinberg & Gottwald 1982), negative feelings (Rook 1987; Dittmar & Drury 2000; Lim, Lee, & Kim 2016), or both (Gardner & Rook 1988). Because postpurchase feelings influence the overall purchasing experience of customers (Tsiros & Mittal 2000) and their word-of-mouth communication (de Matos and Rossi 2008), businesses should analyze consumers' postpurchase feelings, specifically those regarding impulse purchases. Therefore, this study investigated the instant gratification (positive feeling) and regret (negative feeling) of consumers to gain deeper insight into their impulse buying experiences.

## **2. Literature review and hypothesis development**

### **2.1 Impulse buying and social commerce**

Companies make extensive use of social media channels for marketing purposes. Chen et al. (2016) examined the influence of Facebook advertisements and likes on impulse purchases; this was the first study on impulse purchases in the social commerce context. Recently, studies have explored impulse buying in the context of social media. Researchers have examined the factors that influence impulse purchases in various contexts, such as those related to celebrities' social media posts (Zafar et al. 2021a), personalized advertising (Zafar et al. 2021c; Setyani et al. 2019), narrative involvement, parasocial interaction (Vazquez et al. 2020), observational learning (Zafar et al. 2021a), product recommendations (Chen et al. 2019a), and upward social comparison (Liu, He, & Li 2019). However, as the social commerce domain is still in the nascent stage, only a few social commerce-specific antecedents of impulsive buying have been investigated (e.g., social media posts by celebrities and observational learning). The

present study proposes our conceptual framework based on signal theory and online social influence to fill the relevant research gap.

Consumer purchase decisions are influenced by information shared on social media (McClure & Seock 2020). Impulse buying is an irrational behavior triggered by external stimuli (Lin & Lo 2016) wherein consumers experience a sudden and powerful urge to immediately purchase a product or service (Rook 1987; Liu, Li, & Hu 2013). Consumers may make unexpected, unintended, or accidental purchases (Jones, Reynolds, Weun, & Beatty 2003). Impulse buying is frequently associated with online purchases, such as those on social media platforms (Habib & Qayyum 2018). In the present study, impulse buying was defined as the degree to which consumers have an immediate and sudden urge to buy a product or service on a social media platform despite not having a prior purchase intention.

## **2.2 Browsing activities**

Consumers spend an average of 144 minutes per day on social media platforms (Henderson 2020), with a considerable length of time spent scrolling through content. They browse online content to obtain product information before making purchase decisions (Shen et al. 2010). Product information can stimulate consumers' desire to purchase (Bloch, Ridgway, & Sherrell 1989). Therefore, browsing behavior is a crucial determinant of shopping behavior (Floh & Madlberger 2013). When a consumer spends a substantial amount of time browsing online, this creates the opportunity for many instances of impulsive urges to manifest, stimulating the desire to make purchases (Zhang et al. 2018). Zheng et al. (2019) examined the role of browsing in understanding impulse buying in the context of mobile commerce and found that browsing positively impacts the urge to buy impulsively. On the basis of a statement from Shen et al. (2010), in the present study, browsing activities were defined as time spent consulting product information on social media.

## **2.3 Antecedents of browsing activities**

### **2.3.1 Signal theory perspective**

Signal theory relates to the transmission of signals between the signal sender and receiver (Bergh et al. 2014). Signal theory is primarily based on four fundamental concepts: sender, receiver, signal, and signal environment (Connelly et al. 2011). Information asymmetries between the signal sender and receiver are the foundation of signal theory (Su et al. 2016); information is transmitted from well-informed to less-informed individuals (Spence 1978). The actions of the signal transmitter that influence the attitudes and behaviors of receivers are referred to as strategic signals (Zmud et al. 2010). In social commerce, signaling occurs when product information is sent from companies to consumers. Drawing on signal theory, the present study contends that in order to increase consumers' browsing activities and impulse purchases on social media,

companies (senders) must deliver signals to consumers (receivers) through social media (signal environment).

### 2.3.1.1 Recommender-related signals: The characteristics of recommenders

On social media, product recommendations are made by various sources, such as social media influencers, advertisers, and users' friends. Recommender-related signals play a crucial role in affecting impulse buying in social commerce (Chen et al. 2019a). Product or service information provided on social media by friends (or acquaintances) is considered to be trustworthy and helpful (Voramontri & Klieb 2019). Therefore, when consumers browse product information on social media, recommenders have a critical effect on consumers' perceptions of products. This study analyzed three recommender characteristics (similarity, expertise, and likability) based on the findings of Xiang et al. (2016) to determine the factors that influence browsing activities and impulse purchases.

#### (1) Similarity

Similarities are shared attributes such as background, experiences, and interests (Al-Natour, Benbasat, & Cenfetelli 2011; Vonkeman, Verhagen, & Van Dolen 2017). In the present study, similarity was defined as the degree to which consumers perceive product recommenders to be similar to themselves in terms of beliefs, interests, and experiences.

Individuals who interact with others and share similar experiences and interests often feel a closer connection with them than they would with individuals without such similarities (Al-Natour et al. 2011). Similarities can reduce the psychological distance between individuals (Edwards, Lee, & Ferle 2009). Individuals are more likely to feel affective trust toward others with similar interests (Johnson & Grayson 2005). Furthermore, Chen et al. (2019a) indicated that in the context of social media, similarity is positively related to cognitive and affective trust in recommenders. As such, on social media platforms, consumers should be attracted to, perceive a closer connection with, and have deeper affective trust in recommenders who have similar experiences, interests, or beliefs to them; furthermore, they should be more willing to browse the posts of recommenders they share similarities with. Therefore, the following hypothesis was proposed:

**H1a.** The perceived similarity of the recommender has a positive impact on consumers' browsing activities.

#### (2) Expertise

A person's expertise is defined as competence, authoritativeness (Whitehead 1968), or qualifications (Berlo, Lemert, & Mertz 1969), and expertise indicates that a person has knowledge regarding a specific field. In a retail context, expertise refers to the ability to understand product attributes and share product information (Wang & Cole

2016). In this study, recommender expertise refers to consumers' perception of recommenders' ability to understand product attributes and share knowledge about products.

Expert reviewers play an essential role in electronic word-of-mouth on platforms and may be beneficial to both customers and service providers (Naujoks & Benkenstein 2020). A recommender with substantial expertise is considered to provide authoritative endorsements of products they are familiar with (Wilson & Sherrell 1993). Expert opinions are considered to be more reliable and trustworthy than nonexpert opinions (Kelman 1961) because experts possess strong conceptual knowledge of a product and are better equipped than others to provide recommendations that allow consumers to make optimal purchase decisions (To, Liao, & Lin 2007). Influencers' expertise positively influences brand awareness (Lou & Yuan 2019). Additionally, when people perceive an influencer as having expertise in a certain area, they are more likely to perceive the influencer as a tastemaker (Ki & Kim 2019). Chiu, Chang, & Lin (2021) examined the role of friends as endorsers on social media, and their findings indicated that friends with expertise have a significant impact on user attitudes toward functional product advertisements. Therefore, the researchers of the present study contend that consumers prefer reading posts from experts. Accordingly, this study proposed the following hypothesis:

**H1b.** The expertise of the recommender has a positive impact on consumers' browsing activities.

### (3) Likeability

Likeability is the degree to which a person is regarded as friendly, polite, pleasant, and nice to people around them (Ellegaard 2012). Likeability can stem from a favorable first impression that people generate automatically during an initial encounter (Fiske & Neuberg 1990). In this study, likeability was defined as consumers' perception that recommenders are friendly and pleasant toward others.

People are more willing to interact with likable individuals than with unlikable individuals (Xiang et al. 2016) based on reputation or first impressions. An individual's attractiveness (i.e., likeability) is a critical determinant of consumers' attitudes toward that individual's endorsement (Torres et al. 2019). When information is provided by likable individuals, consumers believe that such information is valuable (Xiang et al. 2016). A receiver who perceives an information source as having positive or favorable traits is more likely to be convinced by the source's message (Mills & Aronson 1965). Likeability increases the persuasiveness of information (Mills & Aronson 1965), which heightens consumers' desire to browse associated recommendation posts on social media. Hence, the following hypothesis was proposed:



**H1c.** The likeability of a recommender has a positive impact on consumers' browsing activities.

### 2.3.1.2 Product-related signal: Aesthetic appeal

Visual appeal refers to all the visual components (i.e., images and videos) on a webpage (Parboteeah, Valacich, & Wells 2009). The aesthetic appeal stems from the presentation of a product and is based on various visual elements (Jiang & Benbasat 2004), such as the color scheme and overall layout (Van der Heijden, Verhagen, & Creemers 2003) of images and videos. Visual appeal triggers positive consumer responses (Ryu & Ryu 2021). Wang et al. (2016) demonstrated that perceived aesthetic experience positively influences the favorability of opinions on computer games. The perception of an influencer's content as visually appealing is positively associated with the perception of the influencer as a tastemaker (Ki & Kim 2019). In this study, aesthetic appeal was considered as it pertains to the presentation of a product through the use of various visual elements.

An online shopping interface influences the first impressions of consumers and their overall assessment of the products or services offered on a website (Tractinsky et al. 2000). The emotional appeal of e-commerce websites is enhanced through effective visual design (Cyr et al. 2009). Studies have reported that the aesthetic appeal of a website leads consumers to exhibit a positive response to content (Adelaar et al. 2003) and provides them with entertainment, satisfaction, and pleasure (Chang et al. 2014). The visual content of social media posts containing product recommendations should be rich in aesthetic appeal and attracts the attention of consumers. How content is presented can influence user evaluations and opinions (Tractinsky et al. 2000). Zheng et al. (2019) contended that visually appealing content aided consumers in browsing and selecting products on a shopping platform. Therefore, the present study contends that aesthetic visual cues (e.g., images and videos) accompanying product recommendation posts enhance consumers' pleasure and satisfaction, evoke positive responses in them, and positively influence their browsing activities. Accordingly, the following hypothesis was proposed:

**H2.** The aesthetic appeal of product recommendation posts has a positive influence on consumers' browsing activities.

### 2.3.2 Online social influence: Observational learning

Observational learning is a social learning process in which people develop attitudes and skills by observing the behavior of other agents (Nadler, Thompson, & Boven 2003) and is a behavior-based form of social interaction (Chen, Wang, & Xie 2011; Zhang, Hu, & Zhao 2014). Information obtained through observational learning provides "discrete signals expressed by the action of other consumers, but not the reasons behind the actions" (Chen et al. 2011). In other words, consumers tend to

observe other consumers' purchase behaviors but do not understand the reasons for such behaviors (Chen et al. 2011). These discrete signals represent other users' reactions to posted information. Consumers are involved in observational learning when they consider the number of "likes" on a Facebook post (Chen et al. 2016). Therefore, in the present study, observational learning was defined as the degree to which consumers use the number of likes, shares, and positive comments as a reference when making purchasing decisions.

Many consumers rely on electronic word-of-mouth reviews before making purchases (Naujoks & Benkenstein 2020). Electronic word-of-mouth communication has a strong influence on customer purchases (Fan, Huang, & Chern 2012). Positive word-of-mouth comments and recommendations enhance consumers' purchase intention, promoting impulse buying (Nuseir 2020). Online reviews can stimulate impulsive purchasing urges (Ampadu et al. 2022). For example, Facebook users often pay attention to the number of likes received by posts; when a product-related post has a large number of likes, consumers may feel compelled to make an impulse purchase (Chen et al. 2016). Thus, a product recommendation post with a large number of likes, shares, or positive comments is more likely than other posts to trigger consumers to learn about and imitate others' purchase behaviors, leading to impulse buying. Accordingly, the following hypothesis was proposed:

**H3.** Observational learning has a positive impact on impulse buying.

Browsing activity is fundamental for consumers to obtain information from or engage in recreational shopping in online stores (Zheng et al. 2019). Consumers spend a substantial length of time browsing before making a purchase (Shen et al. 2010); the longer they browse, the more external stimuli they are exposed to (Beatty & Ferrell 1998). Exploratory searching or browsing is a response to stimuli and often leads to impulse buying (Moe 2003). When consumers encounter stimuli, the possibility of them making an impulse purchase increases (Park et al. 2012). Browsing increases consumers' urge to make impulse purchases and their impulse buying behavior (Zhang et al. 2018). As such, the more time consumers spend browsing online stores, the more products they are likely to purchase impulsively (Floh & Madlberger 2013; Bloch et al. 1989). On social commerce platforms, consumers may encounter a variety of social cues as they browse the content, with these cues stimulating impulse purchases (Kimiagari & Malafe, 2021; Zafar, Qiu, & Shahzad 2020). We thus proposed the following hypothesis:

**H4.** Browsing activities have a positive impact on impulse buying.

## **2.4 Postpurchase feelings**

Several studies on impulse buying have examined postpurchase feelings. For example, Gardner and Rook (1988) conducted an exploratory study on postpurchase

affective states after impulse buying, and their results indicated that although many respondents experienced positive feelings following impulse purchases, some experienced negative feelings. Some researchers have argued that impulse buying results in positive feelings (Weinberg & Gottwald 1982), and others have indicated that impulse buying can result in negative feelings (Rook 1987; Dittmar & Drury 2000; Lim et al. 2016; Elsantil, Moustafa, & Hamza 2021; Shahid Sameeni, Ahmad, & Filieri 2022). Elsantil et al. (2021) and Shahid Sameeni et al. (2022) have contended that after making a purchase, consumers may experience negative feeling of regret. For example, one consumer described the experience of making an impulsive purchase as feeling “like I’m doing something I’m not supposed to be doing, but am doing it anyway” (Rook 1987, p. 195). Some researchers have asserted that impulse buying does not influence postpurchase feelings (Ozer & Gultekin 2015). Thus, no consistent findings have been obtained regarding customers’ feelings after an impulse purchase. The present study investigated both positive and negative feelings to obtain an in-depth understanding of how consumers feel after making impulse purchases on social media.

#### 2.4.1 Positive feeling: Instant gratification

Instant gratification refers to an immediate satisfaction of human needs (Zhang et al. 2014). Following an impulse purchase, consumers may feel positive emotions (Gardner & Rook 1988), and their emotional needs may be satisfied (Hausman 2000). For many consumers, impulse buying is a common source of instant gratification (Gardner & Rook 1988). We contend that consumers can satisfy their emotional needs and obtain instant gratification through impulsive purchases. Therefore, the following hypothesis was proposed:

**H5.** Impulse buying has a positive impact on instant gratification.

#### 2.4.2 Negative feeling: Regret

Regret refers to the feeling of having missed an opportunity or wishing for a different outcome (Sarwar, Awang, & Habib 2019). Regret is associated with the incapacity to alter an already-made decision (Elsantil et al. 2021). After making a purchase decision, consumers experience regret when they become aware—or imagine—that they could have made a better decision (Shahid Sameeni et al. 2022). Regret is an unpleasant feeling associated with a person’s realization that their situation could be better if they had made different choices (Zeelenberg & Pieters 2007). The feeling of regret may result from a decision made that was revealed to be unjustified and an outcome that was worse than expected (Connolly & Zeelenberg 2002). Regret can result in negative outcomes such as negative word of mouth (Moon, Costello, & Koo 2017) and brand switching (Wong et al. 2019; Huang 2017). Herein, regret is defined as the degree to which impulse purchases on social media platforms seem unjustified in retrospect.

During an impulse purchase, consumers often do not thoroughly consider their desire or need for a product or service. After making impulse purchases, consumers may experience negative consequences such as debt, guilt, or disappointment with the purchased product or service (Rook 1987). Research has indicated that impulsive buying behavior online has a positive impact on postpurchase regret (Lim et al. 2016). We propose that following impulse purchases, people tend to obtain unfavorable results (Rook 1987) and feel regret (Dittmar & Drury 2000).

**H6.** Impulse buying has a positive impact on regret.

This study investigated the influence of recommender-related signals, aesthetic appeal, and observational learning on the browsing activities of social media users, and it examined how these factors influence impulse purchases. Furthermore, this study explored the feelings of instant gratification and regret after impulse purchases. The research framework is presented in Figure 1. Disposable income was employed as a control variable to assess its impact on consumers' impulse purchases.

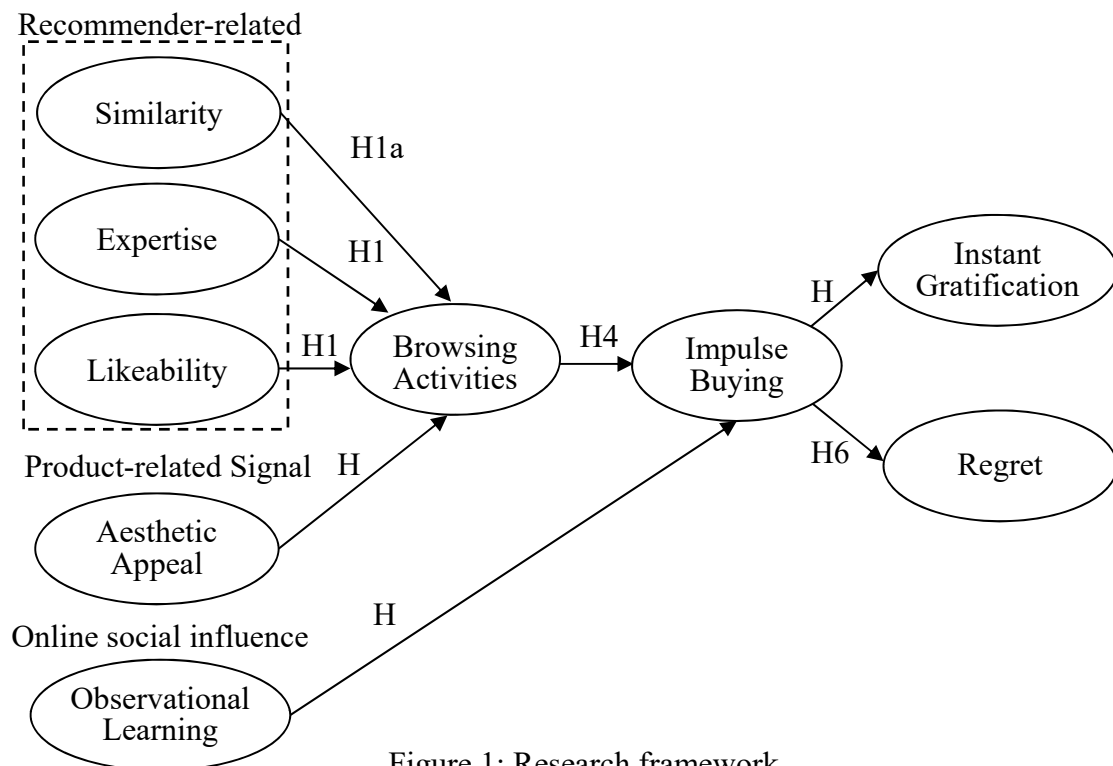


Figure 1: Research framework

### 3. Methodology

#### 3.1 Measurement

To ensure the reliability and validity of the measurement items, this study employed items that have been applied in other studies. Measurement items for similarity, expertise, and likeability were adapted from the study of Xiang et al. (2016);

each construct was measured using a three-item scale. Per the study of Chen et al. (2019a), two items were used to measure aesthetic appeal. Observational learning was measured using a nine-item scale adapted from the study of Zafar et al. (2021a). Browsing activity was measured using a three-item scale developed by Huang (2016). In accordance with the study of Verhagen and van Dolen (2011), four items were used to measure impulse buying. Instant gratification was measured using three items [see Liu et al. (2013)]. Regret was measured using three items modified from the study of Cao and Sun (2018). All items were measured on a 5-point Likert-type scale. Details on the measurement items are presented in the Appendix.

On the basis of the approaches of Nunnally and Bernstein (1994) and Brito, Brito, and Hashiba (2014), this study used a three-stage process (literature review, expert opinions, and a pretest) to validate the face and content validity of the final scales. Modifications were made to enhance comprehensibility, clarity, understandability, and appropriateness on the basis of expert suggestions as well as the feedback and comments from 30 pretest participants who had impulse-buying experiences on social media platforms. For example, we consulted experts for the selection of appropriate measurement items. In addition, on the basis of expert suggestions and feedback from pretest participants, adjustments to the wording of items were made to improve participant comprehension. Furthermore, a screening question was added to the questionnaire to ensure that participants had experience making impulse purchases on social media platforms.

### **3.2 Sample and data collection**

Empirical data were collected from a sample of consumers who had impulse-buying experiences on social media. Prior to participating, respondents were informed that the study was only for academic purposes. To understand the antecedents of impulse buying on social media and postpurchase feelings, during September and October 2020, we conducted semi-structured interviews with five volunteer participants who had made impulse purchases on social media. From January 2021 to March 2021, the online questionnaire survey was posted on social media platforms (i.e., Facebook and Instagram) to collect data. The respondents were asked a screening question at the beginning of the survey: “Have you ever seen posts advocating products on social media platforms (e.g., Facebook, Instagram, Twitter) that led to an impulse purchase in the past 3 months?” Only respondents who had impulse buying experiences on social media within the previous 3 months were eligible to complete the questionnaire survey. The respondents were asked to complete the questionnaire surveys based on their most memorable experiences of making impulse purchases over the previous 3 months. A total of 498 completed questionnaire surveys were collected. After the deletion of 53 invalid samples (e.g., questionnaire surveys not fully completed or no impulse purchase

experiences on social media platforms), 445 valid responses were retained. Table 1 presents the participants' demographics and impulse purchase experiences. Because the majority of respondents in this study were in their twenties, we conducted a one-way analysis of variance (ANOVA) to identify statistically significant differences in impulse buying between the age groups (<22, 23–30, >31 years), the analysis revealed no significant differences ( $p = 0.188$ ) between them.

Table 1: Sample Profile (N=445)

<b>Demographics</b>	<b>Frequency</b>	<b>Percentage</b>
<b><i>Gender</i></b>		
Male	78	17.53
Female	365	82.02
NA	2	0.45
<b><i>Age</i></b>		
Under 17	6	1.35
18 – 22	186	41.80
23 – 30	210	47.19
31 – 40	21	4.72
41 – 50	10	2.25
Over 51	12	2.69
<b><i>Educational</i></b>		
Secondary school	21	4.72
Undergraduate	290	65.17
Graduate	133	29.89
NA	1	0.22
<b><i>Status</i></b>		
Students	278	62.47
Had a job	136	30.56
Others	31	6.97
<b><i>Disposable Income per month</i></b>		
Less than US\$100	50	11.24
US\$100 – 200	85	19.1
US\$201 – 333	107	24.04
US\$334 – 666	84	18.88
US\$667 – 1,000	50	11.24
Higher than US\$1,000	69	15.5
<b><i>The Average frequency of impulse buying per month</i></b>		
1 – 3 times	396	89.99
4 – 6 times	38	8.54
7 – 9 times	5	1.12
Over 10 times	6	1.35

Note. NA: not available

## 4. Results

SmartPLS was used to test the reliability and validity of the research scale and model (Ringle, Wende, & Becker 2015). A two-stage technique was used to estimate the measurement and structural model (Hulland 1999). The PLS bootstrap resampling approach was employed to evaluate the hypotheses. As indicated in Table 2, the  $R^2$  values of most constructs were higher than 0.20, indicating adequate explanatory power (Chin 1998). The goodness of fit value in our study was 0.412, exceeding the recommended value of 0.36 (Wetzels, Odekerken-Schröder, & van Oppen 2009).

### 4.1 Common method variance

Common method variance (CMV) can be a concern when respondents self-report data (Mackenzie & Podsakoff 2012), and this is especially true for questionnaire-based research (Zafar et al. 2021b). This study evaluated CMV using Harman's single factor test (Harman 1967; Podsakoff et al. 2003) and a full collinearity evaluation (Kock 2015). The first factor in this study accounted for 17.9% of the variance; the fact that this factor accounted for less than 50% of the total variance (Babin et al. 2016; Harman 1967) suggested that CMV was not a major concern in this study. In addition, the variance inflation factor values obtained through a full collinearity evaluation ranged from 1 to 1.807. Because these values were below the threshold of 3.3 (Kock 2015), the likelihood of multicollinearity issues was low.

Table 2: Composite reliabilities and average variances extracted

Construct	Cronbach's $\alpha$	CR <sup>a</sup>	AVE <sup>b</sup>	rho_A	R <sup>2</sup>
1. Similarity	0.824	0.895	0.740	0.843	
2. Expertise	0.833	0.900	0.750	0.836	
3. Likability	0.841	0.904	0.759	0.842	
4. Aesthetic Appeal	0.819	0.916	0.845	0.850	
5. Observational Learning	0.930	0.941	0.640	0.939	
6. Browsing Activities	0.763	0.863	0.677	0.773	0.325
7. Impulse Buying	0.795	0.866	0.618	0.800	0.095
8. Instant Gratification	0.856	0.913	0.777	0.856	0.213
9. Regret	0.887	0.930	0.815	0.909	0.260

Notes: <sup>a</sup> Composite Reliability. <sup>b</sup> Average Variance Extracted.

### 4.2 Evaluation of the measurement model

To test the measurement model, we evaluated the reliability and discriminant validity of the constructs. In accordance with the study of Hair et al. (2019), this study evaluated the model's reliability using factor loadings, Cronbach's alpha, composite reliability (CR), average variance extracted (AVE), and rho\_A. The factor loadings ranging from 0.737 to 0.938, all exceeded the threshold of 0.7 (as shown in the Appendix). For a model to be deemed reliable, the Cronbach's alpha and CR values should exceed 0.7, and the AVE should exceed the threshold of 0.5 (Hair et al. 2017;

Hulland 1999). As shown in Table 2, all Cronbach's alpha and CR values exceeded 0.7, and the AVE values exceeded 0.5. In addition, the rho\_A values all exceeded the threshold of 0.7 (Dijkstra & Henseler 2015). Therefore, the constructs were considered reliable.

To assess discriminant validity, three criteria were employed, namely the Fornell–Larcker (1981) criterion, cross-loadings, and heterotrait–monotrait ratio (HTMT; Henseler, Ringle, & Sarstedt 2015). First, the Fornell–Larcker criterion was used to calculate the square root of the AVE. If these values are higher than the correlation coefficient between the specific variable and any other variables, discriminant validity is indicated (Fornell & Larcker 1981; Hulland 1999). Table 3 reveals that the square root of the AVE values is higher than the correlation coefficients between any two other constructs in the lower triangle. The loadings of each item on the designated construct were higher than those on any other construct (Table 4). The HTMT values in this study fell below 0.85 (range: 0.033–0.681; Henseler et al. 2015). The results indicate good discriminant validity among all constructs.

Table 3: Correlation matrix, convergent validity and discriminant validity

<i>Construct</i>	1	2	3	4	5	6	7	8	9	10
1 Similarity	<b>0.860</b>									
2 Expertise	0.560	<b>0.866</b>								
3 Likeability	0.482	0.557	<b>0.871</b>							
4 Aesthetic Appeal	0.346	0.360	0.518	<b>0.919</b>						
5 Observational Learning	0.272	0.311	0.304	0.270	<b>0.800</b>					
6 Browsing Activities	0.393	0.379	0.454	0.490	0.223	<b>0.823</b>				
7 Impulse Buying	0.272	0.246	0.233	0.176	0.252	0.229	<b>0.786</b>			
8 Instant Gratification	0.263	0.310	0.372	0.334	0.154	0.403	0.462	<b>0.881</b>		
9 Regret	0.094	0.091	0.065	0.106	0.219	0.175	0.510	0.315	<b>0.903</b>	
10 Disposable Income	0.108	-	-	-	-	-	-	-	-	<b>1</b>

Notes: The cells in the diagonal line are values of the averaged variance extracted, while others are values of squared correlated coefficients between our constructs.



Table 4 Loadings and Cross Loadings

	S	E	L	AA	OL	BA	IB	IG	R	DI
S1	<b>0.805</b>	0.504	0.429	0.258	0.219	0.285	0.212	0.187	0.080	0.110
S2	<b>0.877</b>	0.483	0.394	0.342	0.253	0.335	0.257	0.227	0.088	0.075
S3	<b>0.895</b>	0.468	0.425	0.290	0.230	0.383	0.233	0.256	0.076	0.097
E1	0.462	<b>0.866</b>	0.511	0.278	0.242	0.336	0.214	0.265	0.041	-0.030
E2	0.497	<b>0.847</b>	0.408	0.305	0.316	0.304	0.291	0.270	0.152	0.016
E3	0.496	<b>0.884</b>	0.521	0.350	0.256	0.342	0.145	0.270	0.052	-0.056
L1	0.395	0.506	<b>0.866</b>	0.473	0.200	0.377	0.192	0.354	0.045	-0.104
L2	0.461	0.473	<b>0.887</b>	0.457	0.240	0.393	0.217	0.306	0.029	-0.053
L3	0.402	0.478	<b>0.861</b>	0.425	0.348	0.414	0.199	0.315	0.094	-0.076
AA1	0.334	0.340	0.479	<b>0.938</b>	0.226	0.497	0.161	0.303	0.113	-0.039
AA2	0.299	0.320	0.474	<b>0.900</b>	0.278	0.395	0.163	0.313	0.078	-0.016
OL1	0.243	0.198	0.264	0.241	<b>0.779</b>	0.257	0.173	0.178	0.164	-0.031
OL2	0.192	0.185	0.223	0.208	<b>0.822</b>	0.170	0.260	0.114	0.209	-0.028
OL3	0.223	0.324	0.359	0.272	<b>0.800</b>	0.252	0.240	0.177	0.210	-0.074
OL4	0.237	0.209	0.178	0.183	<b>0.792</b>	0.164	0.204	0.064	0.144	0.072
OL5	0.265	0.279	0.203	0.203	<b>0.830</b>	0.136	0.209	0.095	0.167	0.025
OL6	0.207	0.248	0.207	0.192	<b>0.825</b>	0.117	0.178	0.062	0.160	-0.036
OL7	0.214	0.279	0.283	0.243	<b>0.737</b>	0.172	0.158	0.178	0.167	-0.041
OL8	0.190	0.253	0.223	0.162	<b>0.786</b>	0.159	0.160	0.128	0.152	-0.017
OL9	0.186	0.280	0.246	0.235	<b>0.821</b>	0.167	0.182	0.122	0.178	-0.055
BA1	0.363	0.318	0.402	0.418	0.236	<b>0.855</b>	0.166	0.370	0.094	-0.043
BA2	0.228	0.242	0.294	0.373	0.166	<b>0.794</b>	0.147	0.293	0.149	-0.107
BA3	0.358	0.360	0.408	0.415	0.148	<b>0.818</b>	0.242	0.326	0.188	-0.096
IB1	0.227	0.253	0.219	0.221	0.137	0.235	<b>0.817</b>	0.424	0.363	-0.048
IB2	0.168	0.164	0.200	0.155	0.130	0.179	<b>0.829</b>	0.371	0.365	-0.049
IB3	0.177	0.077	0.117	0.025	0.225	0.104	<b>0.743</b>	0.262	0.368	0.009
IB4	0.266	0.249	0.185	0.133	0.285	0.187	<b>0.753</b>	0.376	0.485	-0.013
IG1	0.140	0.213	0.269	0.256	0.092	0.308	0.423	<b>0.851</b>	0.414	-0.103
IG2	0.227	0.274	0.337	0.304	0.126	0.388	0.385	<b>0.913</b>	0.219	-0.038
IG3	0.330	0.334	0.380	0.323	0.189	0.370	0.410	<b>0.878</b>	0.192	-0.019
R1	0.102	0.099	0.049	0.116	0.228	0.163	0.519	0.288	<b>0.936</b>	-0.079
R2	0.050	0.048	0.027	0.051	0.194	0.111	0.465	0.243	<b>0.930</b>	-0.059
R3	0.104	0.103	0.111	0.125	0.164	0.212	0.382	0.335	<b>0.839</b>	-0.123
DI	0.108	-0.029	-0.089	-0.031	-0.025	-0.098	-0.033	-0.062	-0.093	1.000

S: Similarity; E: Expertise; L: Likability; AA: Aesthetic Appeal; OL: Observational Learning; BA: Browsing Activities; IB: Impulse Buying; IG: Instant Gratification; R: Regret; DI: Disposable Income

### 4.3 Evaluation of the structural model

The PLS bootstrapping method was adopted to test our hypotheses. As shown in Table 5, all hypotheses were supported, except for H1b. The results demonstrate that the similarity to users ( $\beta = 0.154$ ,  $p < 0.05$ ) and likeability ( $\beta = 0.167$ ,  $p < 0.01$ ) of recommenders had a positive and significant effect on browsing activities, supporting H1a and H1c. However, the recommenders' expertise did not have a positive or significant effect on browsing behavior ( $\beta = 0.084$ ,  $p > 0.1$ ); as such, H1b was not supported. The aesthetic appeal of social media posts had a positive and significant effect on browsing activities ( $\beta = 0.320$ ,  $p < 0.001$ ), supporting H2. Observational learning had a significant positive influence on impulse buying ( $\beta = 0.211$ ,  $p < 0.001$ ), supporting H3. Browsing activities was a positive and significant predictor of impulse buying ( $\beta = 0.181$ ,  $p < 0.001$ ), supporting H4. Additionally, impulse buying had a positive and significant effect on instant gratification ( $\beta = 0.462$ ,  $p < 0.001$ ) and a positive and significant effect on regret ( $\beta = 0.510$ ,  $p < 0.001$ ), supporting H5 and H6, respectively.

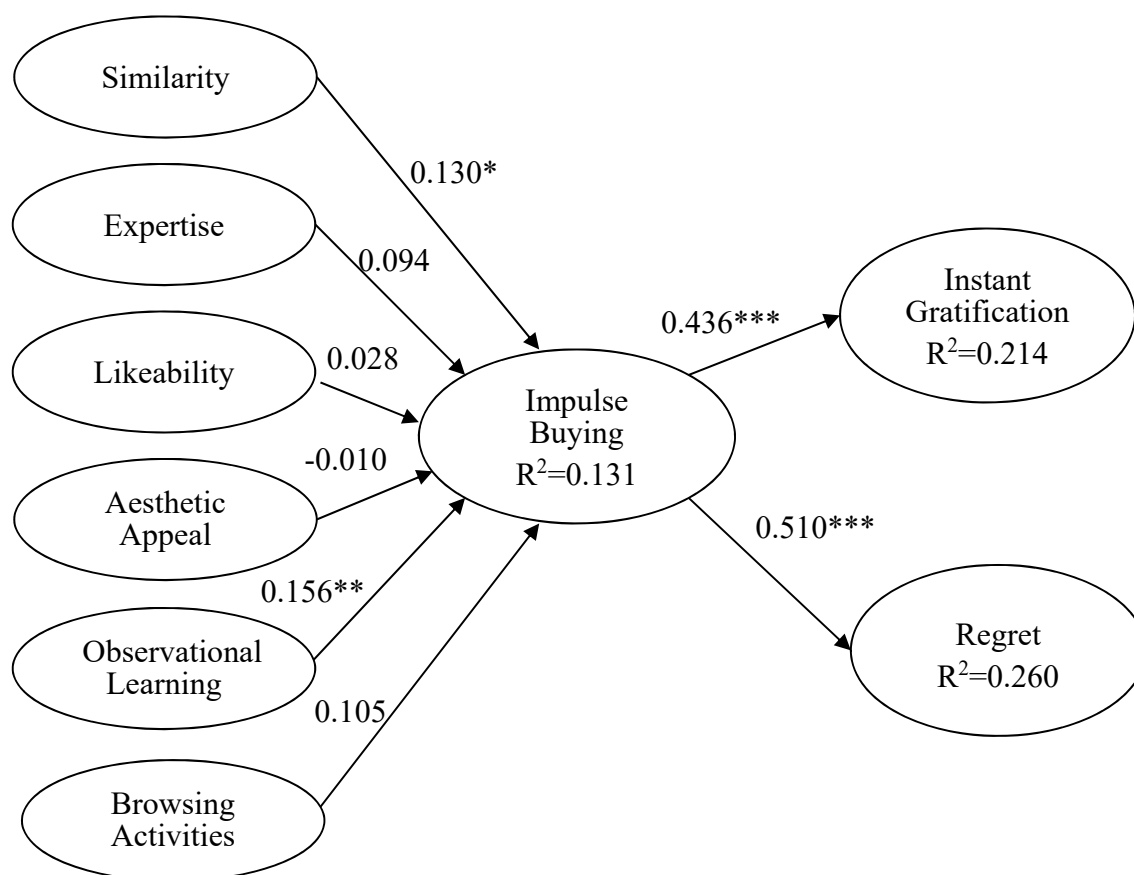
Table 5: Results of Hypotheses

Hypotheses	Standardized coefficients	t value	Results
H1a Similarity → Browsing Activities	0.154*	2.573	supported
H1b Expertise → Browsing Activities	0.084	1.490	unsupported
H1c Likeability → Browsing Activities	0.167**	3.182	supported
H2 Aesthetic Appeal → Browsing Activities	0.320***	6.536	supported
H3 Observational Learning → Impulse Buying	0.211***	4.638	supported
H4 Browsing Activities → Impulse Buying	0.181***	3.591	supported
H5 Impulse Buying → Instant Gratification	0.462***	10.373	supported
H6 Impulse Buying → Regret	0.510***	13.638	supported

Notes: \* significant at  $p < 0.05$ ; \*\* significant at  $p < 0.01$ ; \*\*\* significant at  $p < 0.001$ .

### 4.4 Comparison of our model with a competing model

A crucial indicator of a model's success is its performance relative to other competing models (Bagozzi & Yi 1988). On the basis of our proposed model, we argue that similarity, expertise, likeability, and aesthetic appeal affect impulse buying through the mediating variable of browsing activities. Our proposed model allows no direct paths from these antecedents (similarity, expertise, likeability, and aesthetic appeal) to impulse buying. In accordance with the suggestions of Algesheimer, Dholakia, & Herrmann (2005) and Morgan and Hunt (1994), a nonparsimonious rival model would hypothesize direct paths from these antecedents to impulse buying. The construct of browsing activities did not mediate any of the relationships in the competing model (see Figure 2).



Notes: \* significant at  $p < 0.05$ ; \*\* significant at  $p < 0.01$ ; \*\*\* significant at  $p < 0.001$ .

Figure 2: Competing Model

This study used four criteria to compare the proposed model and the competing model (Algesheimer et al. 2005). First, our proposed model had a better overall fit than the competing model ( $GOF_{\text{proposed}} = 0.412$  vs.  $GOF_{\text{competing}} = 0.386$ ). In addition, 87.5% (7 of 8) of the paths were significant in the proposed model, whereas only 50% (4 of 8) of the paths were significant in the competing model (see Figure 2). Third, neither the proposed model nor the competing model had any unreasonable paths. Finally, the average  $R^2$  value of the proposed model (average  $R^2_{\text{proposed}} = 0.219$ ) was better than that of the competing model (average  $R^2_{\text{competing}} = 0.196$ ). Overall, these empirical results enhance our confidence in the proposed model.

## 5. Conclusions and Implications

Social media usage promotes the desire to make impulsive purchases (Lahath et al. 2021). Our study framework was empirically validated using a sample of consumers with impulse-buying experience on social media. As expected, the results indicated that the similarity and likability of recommenders as well as the aesthetic appeal of a

recommended product post critically influenced the browsing activities of social media users and compelled them to engage in impulse buying. The results also indicated that observational learning was a significant promoter of impulse buying. However, the expertise of recommenders did not have a significant influence on browsing activities. Impulse buying can provide instant gratification and cause feelings of regret.

### **5.1 Theoretical implications**

The increase in impulse purchase activities on social media platforms presents substantial opportunities for marketers. Redine et al. (2022) indicated that future research should focus on impulse buying in social commerce. A literature review revealed that several studies have explored impulse buying in the context of social commerce (Chen et al. 2019a; Liu et al. 2019; Martínez-López, Li, Liu, & Feng 2020; Setyani et al. 2019; Vazquez et al. 2020; Zafar et al. 2021a; Zafar et al. 2021c). Nevertheless, relevant studies on the social commerce-specific antecedents of impulse buying remain limited (Chen et al. 2019; Zafar et al. 2021a). On the basis of signal theory, we posit that businesses transmit signals to consumers to increase consumers' browsing activities and impulse purchases on social media platforms. From a signal theory perspective, this study proposes antecedents of impulse purchases, which can enhance the understanding of social media users' impulse buying behaviors. In addition, with the increased prevalence of social commerce, online social influence increasingly affects consumer behaviors and decisions. Social media platforms have provided opportunities for user interaction; users can post comments and use like and share buttons to communicate directly with members of their online community (Gau, Cheng, & Chiang 2014). However, online social influence (e.g., consumers' comments and the number of likes and shares) has not been sufficiently explored in the context of impulse purchases. Our empirical findings indicate that recommender-related signals (similarity and likability), product-related signals (aesthetic appeal), and online social influence (observational learning) substantially influence browsing activities and impulse purchase decisions. The findings contribute to the literature on impulse buying and social media.

This study demonstrated that impulse buying can result in instant gratification. However, one consumer we interviewed stated that "After impulse buying, I felt delighted at the moment I bought the products...but also, I regretted spending so much money on the items." Some consumers have described impulse purchases as irrational (Rook 1987), and such purchases frequently lead to regret (Tsiros & Mittal 2000). A review of the literature on postpurchase feelings yielded inconsistent findings. Impulse purchases might result in positive (Weinberg & Gottwald 1982) or negative (Dittmar & Drury 2000; Rook 1987) feelings or have no impact on postpurchase feelings (Ozer & Gultekin 2015). The present study focused on impulse shopping on social media

platforms and revealed that impulsive buying resulted in instant gratification and regret, with regret outweighing instant gratification.

## 5.2 Practical implications

This study provides several practical suggestions. The results demonstrated that the more time consumers spent browsing and reading social media posts, the more likely they were to make impulse purchases. This study highlights the importance of recommender characteristics, especially similarity to users and likeability, for encouraging impulse purchases. This study indicates that high similarity between consumers and recommenders encourages consumers to browse related posts and make impulsive purchases. Therefore, product recommenders (such as product spokespersons or influencers) should post detailed personal information (such as their background, interests, and daily routines) to resonate with consumers. Furthermore, companies can consider employing nanoinfluencers as product recommenders. According to Neoreach.com (2022a), although nanoinfluencers have a low follower count, they are considered to be the most potent influencers because they share more similarities with consumers than do “professional” influencers. Nanoinfluencers have a 60% higher engagement in campaigns than other influencers, and per engagement, they are 6.7 times more efficient than other influencers (Neoreach.com 2022b). When companies collaborate with nanoinfluencers, they are more likely to reach their target consumers. As a result, employing nanoinfluencers is more cost-effective than employing other types of influencers.

Consumers’ browsing activity increases when they like a recommender and believe they are friendly, pleasant, and nice. Most social media platforms reveal top influencers through metrics such as the number of followers. However, well-known influencers usually demand high endorsement fees, which may not be affordable to all companies. Therefore, this study suggests that firms consider using microinfluencers as product recommenders to increase their return on investment. Microinfluencers have small but well-established communities in a particular niche, such as beauty, food, or travel (Neoreach.com 2022a). Because their content is tailor-made to their followers, microinfluencers are better able than other influencers to establish a personal relationship with their followers (Neoreach.com 2022a). Moreover, both creators of online posts and product recommenders should be conscious of replies to comments under posts. To make a favorable impression, responders should respond in a personable, approachable, and respectful manner.

The results suggest that the most influential antecedent ( $\beta = 0.320$ ,  $p < 0.001$ ) to customers’ browsing behaviors and impulse purchases is appealing visual presence. From our survey data, most respondents preferred to browse posts that include videos (55.7%) and photographs (40.9%) as opposed to other posts (3.4%; e.g., text-only posts).

In other words, when visual content makes up a large proportion of social media posts, these posts tend to attract user attention. The inclusion of aesthetically appealing videos or images is the most effective means of capturing the attention of consumers. When developing advertising posts, marketing managers should pay attention to their target consumers' aesthetic tastes, as various groups have different preferences.

Observational learning based on other social media users' behaviors (i.e., number of likes, shares, and positive comments) can increase consumers' desire to make impulse purchases. This study proposes three practical recommendations: (1) Product recommenders should enhance their interactions with social media users. For example, they can employ questions to stimulate consumers' curiosity and engagement. In turn, consumers can receive relevant information or trial samples if they respond to and interact with recommenders. For example, a skincare company can post "How do you get perfect skin?" and invite consumers to leave comments to receive skincare advice or product samples. (2) Companies should post content based on current affairs. For example, during the COVID-19 pandemic, when many individuals have been working from home, a fashion industry trend known as athleisure increased in popularity. Recommenders can post about providing athleisure outfits and encourage followers to show their outfits to increase observational learning opportunities. (3) Target consumer segments may use social media during different periods of time. As a result, recommenders can use big data to determine the optimal time to post in order to reach the largest audience.

The results indicate that consumers can feel instant gratification ( $\beta = 0.462$ ,  $p < 0.001$ ) and regret ( $\beta = 0.510$ ,  $p < 0.001$ ) after impulse purchases. Our results demonstrate that when consumers made impulse purchases, regret outweighed instant gratification. Therefore, companies must consider how to prevent consumers from returning products or leaving negative comments due to feelings of regret. Perhaps the use of slogans such as "Cherish yourself" or "You are worth it!" can encourage consumers to consider impulse buying as an act of self-love and self-care; these slogans may also help consumers avoid feelings of regret.

### **5.3 Limitations and future research**

This study has several limitations that can be overcome in future research. First, given that our questionnaire surveys were distributed during the COVID-19 pandemic, researchers should exercise caution when extending our findings to other contexts. Second, this study focused on aesthetic appeal in terms of product-related signals. Studies have shown that other product post-related variables, such as information quality (Chen et al. 2019a) and post-authenticity (Zafar et al. 2021a), can influence consumers' purchase behavior. Thus, additional product-related factors should be included in future investigations to extend our findings. Because our study primarily

focused on the influence of browsing activity on impulse buying on social media platforms, the third limitation of this study is that the R-squared value for impulse buying fell below the set threshold. In a bibliometric analysis (Kumar, Yadav, & Kaushik 2022), four categories of factors were demonstrated to lead to impulse buying, namely, personality trait-related, demographic, cultural, and situational factors; hence, numerous factors affect impulse buying. Future research should thus assess the antecedents of impulse buying from a more comprehensive perspective by considering more than just the situational and contextual factors of impulse buying on social media platforms. Finally, according to Insider Intelligence (2022), approximately half of young consumers (Gen Z and millennials) purchase products on social media. Although young people are heavy users—relative to older age groups—of social media for making purchases, we must acknowledge the limited capacity to generalize our research results on the basis of a respondent pool predominantly comprising individuals in their twenties.

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### Appendix: Measurement Items and Loadings

Constructs/items	Loadings
<b>Similarity</b>	
1.The recommender shares similar values with me.	0.805
2.The recommender shares similar interests with me.	0.877
3.The recommender shares similar preferences with me.	0.895
<b>Expertise</b>	
1.The recommender is very knowledgeable about brands and products that he/she recommends.	0.866
2.The recommender is an expert on brands and products that he/she recommends.	0.847
3.The recommender is highly experienced in picking brands and products that he/she recommends.	0.84
<b>Likability</b>	
1.The recommender is likeable.	0.866
2.The recommender is nice.	0.887
3.The recommender is popular.	0.861
<b>Aesthetic Appeal</b>	
1.The product recommendation posts are visually pleasing.	0.938
2.The product recommendation posts are visually cheerful.	0.900
<b>Observational Learning</b>	
<i>Number of Likes</i>	
1.It is easy for me to observe that the recommender's posts are liked by many people.	0.779
2.It is easy for me to observe that the recommender's posts are liked by many people.	0.822
3.I observe that the volume of likes related to various products is large.	0.800
<i>Number of Shares</i>	
4.It is effortless for me to observe that the recommender's posts are shared by a lot of people.	0.792
5.I observe that the volume of shares related to different posts is large.	0.830
6.I observe that quantity of shares regarding various products is high.	0.825

<i>Number of Comments</i>	0.737
7.It is convenient to observe that the recommender's posts are reviewed by many people.	0.786
8.I observe that quantity of comments regarding different posts is high.	0.821
9.I observe that volume of reviews regarding various products is large.	
<b>Browsing Activities</b>	
1.I like to browse social media (e.g. FB, IG) to see what is new (either directly on the social media page or through my newsfeed)	0.855
2.I like to browse social media for ideas.	0.794
3.The percent of time I spend just looking around on social media is fairly high.	0.818
<b>Impulse Buying</b>	
1.My purchase was spontaneous.	0.817
2.My purchase was unplanned.	0.829
3.I did not intend to make this purchase before this shopping trip.	0.743
4.I could not resist making this purchase.	0.753
<b>Instant Gratification</b>	
1.Impulsively purchasing on social media (e.g. FB, IG) brings me immediate enjoyment.	0.851
2.I feel pleased when I impulsively purchase something on social media.	0.913
3.I feel excited when I impulsively purchase something on social media.	0.878
<b>Regret</b>	
1.I feel sorry for frequently making impulsive purchases on social media.	0.936
2.I regret excessive impulsive purchases.	0.930
3.I should have purchased less on social media.	0.839

Note: This study only included items with factor loadings greater than 0.7; consequently, three items not meeting this threshold were excluded from the analysis.