

Beyond personality: the role of social commerce interactivity and co-production in strengthening consumer–firm bonds

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Abstract

Purpose – Though consumer-to-firm relationships are critical in today's competitive environment, there is limited research investigating the relationship between the Big Five personality traits, social commerce interactivity and consumer-to-firm relationships. Drawing from the social exchange theory, this study aims to examine the influence of the Big Five personality traits and social commerce interactivity on co-production and consumer-to-firm relationships.

Design/methodology/approach – Data from 547 international and local young consumers from several countries were analysed to assess the relationships between constructs and the moderating effects of social media usage.

Findings – The findings confirm that Big Five personality traits and social commerce interactivity between consumer-to-consumer and consumer-to-firm actors positively influence consumer co-production and, in turn, enhance consumer-to-firm relationships. This study also found that the level of social media use moderates the relationship between consumer co-production and the strength of the consumer-to-firm relationships.

Originality/value – Results from this study extend the social exchange theory by showing how consumer engagement in social commerce, personality traits, interactivity and co-production strengthen consumer-to-firm relationships. Practically, these results help managers to enhance customer loyalty and satisfaction by leveraging personality insights to tailor interactions and co-production opportunities.

Keywords Social commerce interactivity, Consumer–firm relationships, Co-production, The big five personality traits, Social exchange theory

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1. Introduction

Young consumers are digital natives who influence brand engagement through their online activities and interactions (Pham *et al.*, 2024; Skallerud, 2025). In increasingly competitive online markets such as social commerce, they play a critical role in defining consumer–firm relationships through user-generated content, interactive communications and value co-production (Thai *et al.*, 2025; Nibras *et al.*, 2025). For businesses, understanding the psychological, social and technological factors that influence these relationships is critical for sustaining long-term loyalty, differentiation and competitive performance (Winit *et al.*, 2023). Social commerce platforms, which combine social networking features with e-commerce capabilities, have become central to how young consumers engage with brands (Pham *et al.*, 2024).

Platform features such as comment threads, influencer collaborations, live streaming and embedded product links have moved beyond conventional marketing roles to support interactive and sustained consumer-to-firm relationships (Thai *et al.*, 2025; Chuang, 2020).

The interactive nature of these platforms enables consumers to access brand information (Almahdi and Archer-Brown, 2022) and also enables them to influence brand perception through peer communication and online engagement (Vemburaj and Santhanalakshmi, 2025). Previous research demonstrates that high levels of social media use among young consumers support this process through sociability, social ties and interactive content (Ahmed *et al.*, 2025; Koch *et al.*, 2025). As Almahdi and Archer-Brown (2022) note, social commerce enhances this engagement by enabling consumer-to-consumer and consumer-to-firm interactions, thus creating immersive and personalized experiences. These developments emphasize the importance of interactivity and co-production as foundational mechanisms for co-creation, consumer engagement and brand loyalty in digital environments (Pham *et al.*, 2024; Nibras *et al.*, 2025).

The integration of social media into business strategies has significantly influenced consumer behaviour and redefined the nature of consumer–business relationships (Almahdi and Archer-Brown, 2022; Nuseir *et al.*, 2023; Shah *et al.*, 2019). Social commerce, as an extension of this integration, enhances consumer engagement by offering interactive features that facilitate both consumer-to-consumer and consumer-to-firm interactions (Almahdi and Archer-Brown, 2022). While consumer engagement and co-creation have received considerable academic attention, their application in social commerce environments remains insufficiently developed (Thai *et al.*, 2025; Haumann *et al.*, 2015). In particular, limited research has examined how interactivity and co-production influence the development of consumer-to-firm relationships among young consumers despite the increasing relevance of these processes in digital commerce. Furthermore, although existing studies on social media offer a valuable foundation for understanding online consumer behaviour (Shah *et al.*, 2019), interactions between consumers and firms, as well as between consumers themselves, remain under-theorized in the context of social commerce (Tajvidi *et al.*, 2021).

Despite substantial evidence linking personality traits, attitudes, psychological resilience, job performance and purchase intentions (Fayombo, 2010), their role in influencing consumer engagement and value co-creation in digital environments remains underexamined. The Big Five personality traits: extraversion, agreeableness, openness, conscientiousness and neuroticism, have been linked with consumer satisfaction, loyalty and online purchasing behaviour (Hollebeek *et al.*, 2022). Unlike transient emotional states or product-specific attitudes, personality traits are stable psychological characteristics that influence how individuals interact with brands (Huang and Yu, 2024). Among young consumers, whose identities and preferences are still evolving, these traits may inform distinct behavioural patterns in social commerce contexts. However, limited empirical research has examined the combined influence of personality traits, interactivity and co-production on consumer-to-firm relationships. Addressing this gap, this study integrates personality traits with social commerce constructs to examine their collective effect on consumer-to-firm relationships.

Guided by social exchange theory, this study tested a conceptual model that links personality traits, social commerce interactivity and co-production to consumer-to-firm relationship outcomes. The research addresses the gap by answering three primary questions:

- Q1. What is the impact of social commerce interactivity and co-production on consumer–consumer and consumer–firm relationships?
- Q2. How does consumer engagement on social media and social commerce interactivity influence relationship strength?
- Q3. What is the impact of personality traits on social commerce interactivity and co-production?

The study makes both theoretical and practical contributions. Theoretically, it extends the social exchange and value co-creation research by integrating personality traits as antecedents to interactive consumer behaviour in digital contexts. It highlights how enduring psychological dispositions influence young consumers' participation in co-production and brand engagement in social commerce environments. This framework contributes to a comprehensive understanding of how reciprocal value exchange is facilitated by individual differences and platform features. Practically, the study provides insights for businesses aiming to enhance consumer-to-firm relationships among young, digitally fluent consumers. By identifying how personality traits influence engagement strategies, our work informs the design of personalized communication, interactive platform features and targeted co-creation initiatives. These insights support firms in developing more responsive and sustainable consumer engagement approaches in social commerce.

2. Theoretical background

2.1 Social exchange theory

Social exchange theory involves interdependent interactions that create obligations and facilitate reciprocal resource sharing (Mora Cortez and Johnston, 2020; Homans, 1974). These aspects are critical in social commerce interactivity as they influence consumer-to-firm relationships by linking behaviour with both social factors and information sharing (Cropanzano and Mitchell, 2005). Interactivity, an important aspect of social exchange, is initiated through information sharing and thus strengthens consumer-to-firm ties (Cropanzano and Mitchell, 2005). Additionally, social exchange theory also emphasizes that individuals seek a balance between benefits and costs (Cropanzano *et al.*, 2017), and this process leads to the emergence of the reciprocity rule, which states that "one party's actions depend on another's behaviour" (Cropanzano and Mitchell, 2005), (p. 876). When practiced in social commerce contexts, reciprocal interactions tend to bring mutual benefits for both consumers and firms (Wang and Yu, 2017). These are realized through positive actions such as favourable reviews (Mehmood *et al.*, 2025), which further enhance cooperation and consumer-to-firm relationships (Cropanzano *et al.*, 2017).

Research shows that satisfied consumers tend to repurchase products and share positive word of mouth (Mehmood *et al.*, 2025). This demonstrates that parties to an exchange value the relationship, and this helps firms learn from the interactions and dialogues with consumers using information from their social networks (Vargo and Lusch, 2016; Grönroos, 2012). The weighing of benefits and costs by exchange participants implies that firms must initiate the exchange to establish a connection. Consumers tend to collaborate if they feel that the connection initiated by the firm is beneficial, especially when they are rewarded (Wang and Yu, 2017; Chuang, 2020).

We adopted social exchange theory as a central theoretical framework to explain the aspects of reciprocal interactions between individuals and organizations which are fundamental to social commerce contexts (Mishra and Mund, 2024). Social exchange theory's focus on the principles of reciprocity and mutual dependency is consistent with social commerce's interactive nature. Based on this, we argue that it provides a well-established lens to understand how social and economic exchanges create mutual value through continuous interactions (Mishra and Mund, 2024), as well as consumer engagement (Phan *et al.*, 2020). As a complementary lens, we also draw on relationship marketing's commitment-trust theory (Morgan and Hunt, 1994), which explains that interactive exchanges build trust and commitment, driving co-operative behaviour and relationship quality (Pesämaa *et al.*, 2013). In our research model, interactivity can shape co-production, a fine-grained form of cooperative behaviour, through commitment and trust. This co-production, in turn, further promotes consumer-to-firm relationships. Moreover, this theoretical lens clarifies that interactivity can generate greater commitment and trust, and in turn, co-production if consumers are more aware of the firm's brand and its product brands

through being exposed to more information about the firm's activities and its products. In other words, relationship marketing's commitment-trust theory can serve as a backup theory for SET in shedding light on the current research model.

2.2 Social commerce interactivity

Social commerce has traditionally been rooted in Web 2.0 technologies that emphasize user-generated content, platform interactivity and two-way communications to drive sales (Liu *et al.*, 2021). However, recent advances in Web 3.0 are reconfiguring the landscape of digital consumer engagement. Web 3.0 introduces decentralized technologies, blockchain transactions, artificial intelligence and semantic web capabilities that offer more personalized, autonomous and trust-based interactions between consumers and firms (Zhang and Lu, 2025; Lin *et al.*, 2019). These technologies expand the notion of interactivity beyond platform features and user perceptions to include algorithmic decision-making, smart contracts and real-time adaptation of content and experiences. In this context, co-production becomes more data-driven and consumer-controlled, where users contribute through content governance, data sharing and digital ownership (Alalwan *et al.*, 2017). These developments challenge the traditional assumptions of social exchange theory by introducing new elements of trust, reciprocity and value exchange in decentralized systems.

As Web 3.0 technologies progress, we argue that they are likely to influence how young consumers initiate and sustain interactions, and this has the potential to redefine the parameters of interactivity and co-creation in social commerce. Previous research shows that technology enhances interactions and information sharing (Pham *et al.*, 2023), which has resulted in the incorporation of shopping functions by social networks (Aydin, 2019). Interactivity, which is characterized by three dimensions, namely features, perceptions and processes, has been identified in the literature as a key driver of consumer intentions, engagement and information exchange (Tajvidi *et al.*, 2021). Each dimension of interactivity is critical in determining the strength of consumer-to-firm relationships. For instance, interactive technologies have been acknowledged as critical in influencing both business models and online interactions (Zhang and Lu, 2025), while perceived interactivity enhances interpersonal communication and telepresence. Additionally, the process dimension, which emphasizes two-way communication, has also been identified as critical in enhancing social interactions (Chuang, 2020). Therefore, advances in technology, especially Web 3.0 will further enhance these aspects by influencing user perceptions of firm platforms (Zhang and Lu, 2025; Pham *et al.*, 2024; Zhang *et al.*, 2014).

Social commerce interactions, such as consumer-to-consumer and consumer-to-firm, have been categorized as process-based, and this approach offers a broad understanding of the construct (Tajvidi *et al.*, 2021). Connectedness in consumer-to-consumer interactions, which is largely driven by advances in technology and the sharing of common interests using Web 2.0 technologies, is critical in generating user-generated content that improves consumers' confidence, purchase decisions and loyalty (Chuang, 2020; Wang and Yu, 2017). Consumer-to-firm interaction in social commerce literature is also identified as process interactivity, where consumers provide information and assess product suitability based on market-generated content (Chuang, 2020). This approach is beneficial to firms as it helps managers to improve their marketing communications, which in turn allows consumers to make better purchasing decisions (Chuang, 2020; Pham *et al.*, 2024).

2.3 Co-production and service-dominant logic in value co-creation

Co-creation and co-production are critical elements for businesses to build and sustain long-term profitable consumer relationships due to their emphasis on consumer interactions, which are crucial for satisfaction (Pham *et al.*, 2023). On the one hand,

co-creation, which was introduced by [Vargo and Lusch \(2004\)](#), is informed by the service-dominant logic, which emphasizes that firms must collaborate ([Nibras et al., 2025](#); [Wang and Yu, 2017](#)). Recent studies argue that the service-dominant logic is a theoretical framework that provides a comprehensive understanding of economic exchange and value creation based on collaborations between consumers and firms ([Nibras et al., 2025](#); [Thai et al., 2025](#)). Consumers co-create value by combining the firm's value proposition with their resources, resulting in more fulfilling products and services ([Pham et al., 2023](#)). On the other hand, co-production refers to the active involvement of customers in creating the value proposition or the business's offering, typically through activities such as co-design, self-service or assembling the product themselves. It can also be understood as a form of co-creation where the consumer plays an active role in delivering the provider's market offering ([Vargo and Lusch, 2016](#)). Though there is a lack of a universal definition of what constitutes co-production, consumer participation in developing products and services is a central element of co-production. Furthermore, consumer-to-firm interactivity is also an essential element of co-production success.

Co-production involves both mental and physical multi-actor activities. Organizations generate products and services through exchanging their effort, skills, time and knowledge ([Sugathan and Ranjan, 2020](#)). On the other hand, non-business stakeholders also ensure that co-production is successful by using personal (e.g. cars, phones) and social platform resources. The common resources that are required for co-production to be successful for firms and consumers include knowledge, labour, self-service and time ([Dargahi et al., 2020](#)). Though the involvement of consumers in co-production is generally considered passive, their participation in decision-making is a recurring theme in service literature ([Etgar, 2008](#); [Grönroos, 2012](#)). This approach shows that co-production is firm-centric, while value co-creation is consumer-centric ([Haumann et al., 2015](#); [Thai et al., 2025](#)).

Research shows that the presence of consumers in co-production differs when compared to value co-creation, depending on the level of interactivity that defines the consumer-to-firm relationship ([Vargo and Lusch, 2016](#)). Thus, in contexts where there are high levels of interactivity, firms tend to provide consumers with co-production opportunities. These opportunities are driven by technological advancements such as Web 3.0, which empowers consumers to engage in co-production based on past experiences ([Pham et al., 2023](#)). Information collected through co-production opportunities is critical for product and service development, and this has also resulted in firms investing in interactive, technology-driven service processes ([Chuang, 2020](#); [Haumann et al., 2015](#)). This demonstrates that co-production can be directly or indirectly conceptualized based on engagement and interactivity levels. While consumers can engage in co-production in several ways, customization is the most common method ([Haumann et al., 2015](#); [Dargahi et al., 2020](#)). It allows consumers to communicate their preferences to the firm or participate directly in product development ([Etgar, 2008](#); [Mehmood et al., 2025](#)).

2.4 Personality traits

Personality traits influence consumer choices and decisions, leading to numerous theories on how personality factors affect consumer behaviour ([Aydin, 2019](#)). Though there is an ongoing debate around personality traits approaches, the Big Five model remains widely recognized and utilized as the leading approach for analysing personality in consumer behaviour research ([Kaur and Anand, 2018](#); [Hollebeek et al., 2022](#); [Aydin, 2019](#)). There are five traits in the Big Five personality model: "extraversion, openness, agreeableness, conscientiousness and neuroticism" ([Wu and Mursid, 2019](#)). According to [Chorley et al. \(2015\)](#), *extraversion* is associated with consumers being friendly, sociable and outgoing while *openness* measures consumers' "originality, curiosity, spontaneity, and imagination". Consumers with high levels of openness tend to form ideas and views that are based on previous experiences ([Chorley et al., 2015](#)). Thus, *openness* is a trait for consumers who

prefer new challenges and innovation (Wu and Mursid, 2019; Kaur and Anand, 2018) such as young consumers. *Agreeableness* in the model measures the extent to which consumers are co-operative, trustworthy and empathetic, while *conscientiousness* relates to an individual's orderliness, resourcefulness and determination. Consumers with this trait are therefore detail-oriented, consistent and systematic (Chorley *et al.*, 2015; Wu and Mursid, 2019). Finally, *neuroticism* indicates consumers' emotional instability and tendency to express negative emotions (Chorley *et al.*, 2015).

This model has been extensively applied in consumer research to understand attitudes and behaviours (Huang and Yu, 2024; Hollebeek *et al.*, 2022). Prior research examined the relationship between the Big Five personality traits and customer environmental engagement (Kvasova, 2015). Other studies investigated how different personality traits negatively and positively influence consumer engagement behaviour (Tajvidi *et al.*, 2021; Hollebeek *et al.*, 2022). Though these studies advance our understanding of consumer behaviour, the model has limited application in social commerce contexts. While personality traits have been used to examine consumer behaviour across contexts, their influence did not significantly affect the dependent outcomes (Aydin, 2019). Additionally, the model's application to co-production has also yielded inconclusive results, suggesting the need for further investigation. Therefore, its theorization in terms of co-production and consumer-to-firm relationships remains insufficient. We used the five-factor model to address this limitation in research.

3. Literature review and hypotheses development

3.1 Social commerce interactivity, social media use and consumer-to-firm relationships

Consumers interact with other actors in the social commerce environment through forums, online communities, ratings, reviews, referrals, recommendations, content creation and information sharing (Tajvidi *et al.*, 2021; Pham *et al.*, 2023). Consequently, social commerce interactivity influences users' perceptions and behaviours, especially when individuals perceive such interactions as beneficial. In circumstances where interaction is beneficial, reciprocity is likely to be enhanced because consumers will be gaining information and emotional value from social engagement with others. We, thus, propose the following hypotheses:

- H1. Social commerce interactivity positively and significantly impacts the strength of the customer-firm relationship.
- H1a. Consumer–consumer interaction positively and significantly impacts the strength of the customer-to-firm relationship.
- H1b. Consumer-to-firm interaction positively and significantly impacts the strength of the customer-to-firm relationship.

For consumers to make informed purchases, product information as well as social media information is critical (Pham *et al.*, 2023; Pham *et al.*, 2024). Firms need to leverage these interactions to enhance their products and services based on consumer feedback (Lin *et al.*, 2019), thus, strengthening consumer-to-firm relationships. Social media platforms enable consumers to interact and engage with each other, which plays a critical role in enhancing their loyalty and strengthening their relationship with brands. This demonstrates the importance of facilitating social interactions and interpersonal relationships (Pham *et al.*, 2023; John *et al.*, 2025; Zhang *et al.*, 2014). Additionally, this consumer engagement enhances social influence and brand engagement through word-of-mouth communication (Shah *et al.*, 2019). Prior research shows that interactions among consumers within online brand communities positively impact the overall quality of their relationship with the brand

(Chou and Lin, 2023; Shah *et al.*, 2019). This implies that a higher level of social media use among young consumers facilitates consumer-to-consumer interactions as well as strengthens consumer-to-firm relationships. Building on this, we hypothesize:

- H2. The level of social media use significantly moderates the relationship between social commerce interactivity and the strength of the consumer-to-firm relationship.
- H2a. The level of social media use significantly moderates the relationship between consumer-to-consumer interaction and the strength of the consumer-to-firm relationship.
- H2b. The level of social media use significantly moderates the relationship between consumer-to-seller interaction and the strength of the consumer-to-firm relationship.

3.2 Co-production, interactivity and firm relationships

Co-production in social commerce emphasizes the participation of consumers and firms in jointly creating value through an interactive process (Aydın, 2019; Dargahi *et al.*, 2020). Guided by service-dominant logic and social exchange theory, this collaboration is not limited to transactional activities but reflects a reciprocal exchange of resources, information and benefits (Grönroos, 2012; Vargo and Lusch, 2016). Consumers contribute time, knowledge and feedback, while firms reciprocate through personalized services, adaptive experiences and the incorporation of consumer input into offerings (Mehmood *et al.*, 2025). These two-way exchanges enhance consumer trust and commitment and are critical for long-term relationship building. In social commerce environments, interactivity enables this reciprocity (Chuang, 2020; Tajvidi *et al.*, 2021). Firms respond to consumer engagement by integrating user-generated content into marketing strategies. Modifying products based on consumer insights and publicly acknowledging contributors (Mehmood *et al.*, 2025). For example, brands on TikTok Shop and Instagram highlight consumer-created content or co-launch campaigns with their most engaged followers. These actions create a visible value loop, emphasizing mutual involvement and perceived fairness. Consequently, reciprocity is most effective when the exchange is personalized, sustained and viewed as equitable (Dargahi *et al.*, 2020; Haumann *et al.*, 2015). Based on this, co-production is more than a marketing strategy; it is a relationship-building mechanism that reflects shared control and collaboration between firms and consumers. It empowers firms to adapt offerings and enhance service quality, while enabling consumers to influence outcomes directly (Mehmood *et al.*, 2025). Therefore, we hypothesize:

- H3. Social commerce interactivity positively and significantly impacts co-production.

Co-production, however, does not occur in isolation, as both consumer-to-consumer and consumer-to-firm interactions influence it in social commerce contexts. Consumer-to-consumer interaction facilitates peer learning and knowledge exchange (John *et al.*, 2025), which is critical for building confidence in product decisions and encourages co-creation and interactivity in social commerce. Through engagement with reviews, referrals and shared experiences, consumers support each other and gain confidence in participating with brands (Nibras *et al.*, 2025). This peer-driven confidence helps young consumers to understand what inputs are valuable in co-production efforts. Additionally, consumer interactions have also been identified as critical for promoting products in social commerce (Pham *et al.*, 2023). Research shows that consumer-to-consumer interactions can significantly impact co-production (John *et al.*, 2025; Haumann *et al.*, 2015). Therefore, we hypothesize that:

- H3a. Consumer–consumer interaction positively and significantly impacts co-production.

The emergence of Web 3.0 technologies, along with the popularity of social media and social networking sites, has seen the development of new social platforms. These technologies enable interactivity and co-production because consumer-to-firm interactions serve as a direct conduit for co-production (Dargahi *et al.*, 2020; Chuang, 2020; Tajvidi *et al.*, 2021). When consumers engage with firms through feedback, content co-creation or collaborative design processes, they develop a sense of ownership and influence (Vargo and Lusch, 2016). Firms that incorporate consumer feedback provide responsive, interactive touchpoints that enable co-production exchanges. Previous studies suggest that when consumers perceive their input as valued and acted upon, they are more likely to continue participating in co-creative behaviours (Tajvidi *et al.*, 2021; Akhavannasab *et al.*, 2022). Thus, we hypothesize that:

H3b. Consumer-to-firm interaction positively and significantly impacts co-production.

Co-production is influenced both by these interactions and the outcomes that are generated in the process, such as treating consumers as quasi-employees within the process (Dargahi *et al.*, 2020). When consumers co-produce, they experience higher levels of satisfaction, trust, loyalty and psychological attachment to the firm (Haumann *et al.*, 2015). Co-produced experiences are tailored to personal preferences and therefore carry greater perceived value. Thus, the success of co-production contributes directly to stronger consumer-to-firm bonds. We, therefore, hypothesize that:

H4. Co-production significantly impacts the strength of the consumer–firm relationship.

Social media, which is extensively used by young consumers, plays a critical role in facilitating co-production by enabling real-time, interactive engagement between firms and users. Features such as direct messaging, live streaming, polls and comment sections offer opportunities to provide feedback while allowing firms to respond and adapt (Zhang and Lu, 2025; Mehmood *et al.*, 2025). This two-way communication promotes a continuous flow of user input and firm responsiveness, laying the groundwork for collaborative value creation and the reconfiguration of traditional business-to-consumer relationships (Chuang, 2020; Akhavannasab *et al.*, 2022). Significantly, the social dimension of these platforms enhances peer recommendation and social referrals, which have been shown to substantially influence consumer trust, purchase intentions and perceptions of authenticity (Mehmood *et al.*, 2025). By bridging geographic and communication barriers, social commerce builds stronger consumer-to-firm relationships and improves satisfaction while simultaneously promoting loyalty and advocacy (Alalwan *et al.*, 2017). For example, on platforms like TikTok Shop, firms integrate consumer input from live-stream, Q&A sessions or interactive polls in product development. When these suggestions are implemented, consumers perceive the relationship as reciprocal and authentic, strengthening their emotional connection to the brand. This further illustrates how social media can enhance the impact of co-production by emphasizing consumer perceptions of being heard, valued and involved. Additionally, emerging Web 3.0 technologies also expand the boundaries of co-production. Decentralized social platforms (e.g. Lens Protocol) and blockchain-based systems allow consumers to participate in content creation, co-own, monetize or govern it (Khobzi *et al.*, 2025). These developments introduce new layers of reciprocity and consumer empowerment that reconfigure how value is co-created and distributed (Zhang *et al.*, 2014). In such environments, young consumers may become more invested in consumer-to-firm relationships when they perceive their contributions as meaningful and rewarded. Building on this, we argue that the level of social media use can significantly moderate the strength of the relationship between co-production and consumer-to-firm relationship outcomes. Social media facilitates co-production and influences the perceived fairness, involvement and continuity of these exchanges. Therefore, we hypothesize:

H5. The level of social media use has a significant moderating effect on the relationship between co-production and the strength of the consumer-to-firm relationship.

3.3 Big Five personality traits

Prior studies have examined the impact of personality traits on co-production (Wu and Mursid, 2019). These studies established that personality traits are central to social media use, specifically extraversion, neuroticism and openness to experience (Aydin, 2019). Findings from prior research highlight the importance of personality traits in encouraging consumers' participation in the value co-creation and co-production processes. Additionally, it has also been established that there are personality differences in terms of how individuals use social media and their involvement in co-production (Huang and Yu, 2024; Chuang, 2020; Dargahi *et al.*, 2020). Extraverts use social media more frequently (Caci *et al.*, 2014) and maintain more online and offline relationships, influencing their openness to experiences (Feiler and Kleinbaum, 2015). We therefore propose that all five attributes are essential for enhancing co-production, even though only three dimensions of the Big Five personality traits have been significant in prior studies:

H6. The Big Five personality traits positively influence co-production.

Individuals with low openness tend to be conservative and reserved, while those with high openness are more innovative and expressive (Fayombo, 2010; Wu and Mursid, 2019). Thus, we hypothesize that:

H7. The customers' Big Five personality traits significantly influence social commerce interactivity.

H7a. The Big Five personality traits significantly impact consumer–consumer interaction.

H7b. The Big Five personality traits significantly impact consumer–firm interaction.

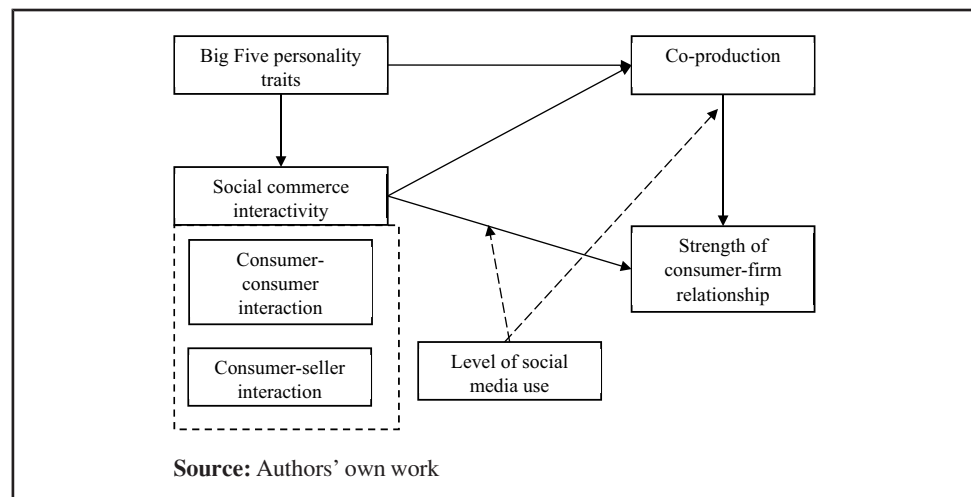
Figure 1 below illustrates the proposed research model used in this study.

4. Research methodology

4.1 Sample and data collection

Data were collected from April 2021 to July 2021 from a convenience sample of young international and local tourists who interacted with Vinpearl's social commerce platform. A convenience sample was deemed suitable due to the lack of an appropriate sampling frame (Bornstein *et al.*, 2013). The measuring instrument was designed in both English and

Figure 1 The proposed research model



Vietnamese to capture views from both international and local consumers. To ensure the accuracy and reliability of the research instruments across different languages and cultural contexts, both forward and back translation methods were used (Goerman and Caspar, 2010). The initial translation from Vietnamese to English was conducted by a bilingual translator who had a good understanding of the aims of the study. We used another translator who was not aware of the original text to conduct a back translation to identify differences and ensure semantic equivalence between the original and the translated versions.

Respondents were assured of anonymity, and their participation was entirely voluntary. A total of 650 respondents were approached by posting the SurveyMonkey link on Vinepearl's social media sites (Facebook, Instagram and LinkedIn). To participate, respondents confirmed their eligibility by indicating whether they had interacted on social commerce sites such as Booking.com, OTAs' websites, travel agency websites, Facebook, TripAdvisor, Agoda and Expedia. Vinepearl was chosen as the research context for the following reasons: It is one of Vietnam's largest resort and entertainment brands, owning five-star hotels, resorts, conference centres and international amusement parks in popular tourist destinations. Vinepearl has received multiple awards for five consecutive years, including the "Vietnamese Gold Star" for the top 100 businesses, "Top 10 Five-Star Hotels in Vietnam" and "Top 10 Strong Brands in Vietnam", along with other domestic and international accolades. It also operates online platforms for global consumer interaction, including Agoda, TripAdvisor and Airbnb, as well as various social media platforms. Of the 650 respondents, 547 questionnaires were deemed suitable for analysis after removing incomplete data. The sample consisted of 52.7% females, 39.3% males and 8% who did not specify their gender (see Table 1). Additionally, 31.4% were aged 22–28, and 45.2% had completed secondary education.

Table 1 Demographics of respondents

<i>Feature</i>	<i>Category</i>	<i>N</i>	<i>%</i>
Gender	Male	215	39.3
	Female	288	52.7
	Others	44	8.0
Age	18–21 years	58	10.6
	22–28 years	172	31.4
	29–40 years	160	29.3
	41–50 years	102	18.6
	< 50 years	55	10.1
Educational level	Higher school	247	45.2
	Undergraduate	242	44.2
	Postgraduate	58	10.6
Occupation	Student	126	23.0
	Public sector employees	69	12.6
	Private sector employees	78	14.3
	Public sector management	54	9.9
	Private sector management	72	13.2
	Self-employed	112	20.5
	Others	36	6.6
Living area	Europe	138	25.2
	Asia	111	20.3
	North America	65	11.9
	Latin America	61	11.2
	Africa	51	9.3
	Australia	72	13.2
	Antarctica	49	9.0
Type of customer	Organizational customers	175	32.0
	End users	372	68.0
Source(s): Authors' own work			

4.2 Measurement

The items used to measure the constructs were adapted from previous studies to ensure validity. We used a seven-point Likert scale, with 1 representing “strongly disagree” and 7 representing “strongly agree”. The questionnaire’s content was validated and refined through consultations with ten academics in Vietnam, who provided recommendations that informed the revision of the instrument’s wording. The Cronbach α values for each pre-test measurement were above the 0.70 threshold, confirming each research construct’s reliability. Extraversion (EXTR), Openness (OPEN), Agreeableness (AGRE), Conscientiousness (CONS) and Neuroticism (NEUR) were each measured using three items adapted from [Wu and Mursid \(2019\)](#). Social commerce interactivity was assessed through consumer-to-consumer interaction (CCI) and consumer-to-firm interaction (CFI), following the approach of [Tajvidi et al. \(2021\)](#). Co-production was measured using items adapted from [Auh et al. \(2007\)](#), while consumer-to-firm relationship strength (SCF) was assessed with four items from [Chuang \(2020\)](#). Social media use levels (LSMU) were measured using three items adapted from [Chuang \(2020\)](#).

4.3 Data analysis

Data were analysed using the partial least squares path modelling (PLS-PM) in SmartPLS 3.2.3. The PLS-PM method was chosen for its flexibility in handling complex models and its predictive capability ([Sarstedt et al., 2020](#)). Following [Baron and Kenny’s \(1986\)](#) guidelines, we first examined the direct effects of predictor variables on outcomes and then assessed the moderating effect of social media use on these relationships.

5. Results

5.1 Measurement model

Since self-reports on social media could introduce common method bias, we took several measures to mitigate it. We randomized questions, mixed scales and divided the questionnaire into different sections based on the study’s constructs to minimize the influence of prior responses. We applied multiple approaches to assess bias, including a strict adaptation of Harman’s one-factor test, ensuring no single individual’s responses distorted the results. The study found that a single factor explained less than 40% of the total variance, indicating no common method bias ([Kock, 2015](#)). Using the correlation marker technique, we found similar adjusted and unadjusted correlations, confirming no bias impact. Variance inflation factors were all below 3.3 ([Kock, 2015](#)), ruling out multicollinearity issues and further affirming no common method bias (see [Table 5](#)).

Statistically, factor loadings of measuring items indicated convergent validity ($p < 0.01$). The Cronbach’s alpha coefficients exceeded the cut-off of >0.7 , indicating internal consistency ([Hair et al., 2017](#)). Composite reliability (CR) is calculated in conjunction with structural equation modelling (SEM) and is considered a more accurate measure of reliability ($CR > 0.7$). The square root of each construct’s AVE and inter-construct correlations were evaluated to estimate discriminant validity. The square root of the AVE of each component exceeded its correlations, showing high discriminant validity ([Hair et al., 2017](#)). All scales were convergent, and detailed results can be seen in [Appendix](#).

The heterotrait-monotrait (HTMT) ratio was also used to assess discriminant validity. Following [Kline \(2023\)](#); and [Henseler et al. \(2015\)](#), the HTMT ratio of correlations is a method used to assess discriminant validity in SEM. Discriminant validity ensures that constructs that are supposed to be unrelated are distinct from each other. A common threshold for HTMT is 0.85 or 0.90. Values tested in this study were below this threshold ([Tables 2](#) and [3](#)), thus indicating good discriminant validity among the measured constructs.

Table 2 Heterotrait-monotrait ratio (HTMT)

Component	AGRE	CCI	CONS	COP	CSI	EXTR	LSMU	NEUR	OPEN	SCF
AGRE										
CCI	0.780									
CONS	0.632	0.631								
COP	0.765	0.762	0.603							
CSI	0.750	0.788	0.579	0.765						
EXTR	0.767	0.679	0.577	0.739	0.510					
LSMU	0.725	0.769	0.575	0.667	0.847	0.553				
NEUR	0.167	0.159	0.150	0.171	0.092	0.212	0.125			
OPEN	0.877	0.766	0.669	0.754	0.773	0.747	0.704	0.108		
SCF	0.754	0.698	0.578	0.863	0.732	0.693	0.632	0.162	0.729	

Source(s): Authors' own work

Table 3 Fornell–Larcker criterion

Component	AGRE	CCI	CONS	COP	CSI	EXTR	LSMU	NEUR	OPEN	SCF	AVE
AGRE	0.811										0.658
CCI	0.620	0.825									0.681
CONS	0.514	0.550	0.908								0.824
COP	0.629	0.673	0.543	0.923							0.851
CSI	0.605	0.677	0.516	0.686	0.863						0.745
EXTR	0.595	0.569	0.493	0.637	0.433	0.853					0.728
LSMU	0.570	0.644	0.496	0.587	0.819	0.456	0.870				0.728
NEUR	−0.095	−0.135	−0.129	−0.154	−0.084	−0.174	−0.080	0.822			0.676
OPEN	0.678	0.627	0.559	0.644	0.646	0.605	0.572	−0.093	0.841		0.707
SCF	0.624	0.620	0.526	0.794	0.665	0.602	0.559	−0.143	0.629	0.934	0.873

Source(s): Authors' own work

5.2 Hypotheses testing

We calculated path coefficients, *t*-values and *p*-values to evaluate the structural model. A bootstrapping approach with 5,000 resamples and one-tailed tests was implemented to evaluate statistical significance and maintain consistency in the study outcomes (Hair *et al.*, 2017). The results of the structural model are presented in Table 4. Consumer-to-consumer and consumer-to-firm interactions significantly and positively influenced consumer–firm relationships ($p < 0.041$, $\beta = 0.079$, $t = 2.043$; $p < 0.000$, $\beta = 0.196$, $t = 4.430$), supporting *H1a* and *H1b*. Both interactions also positively impacted co-production ($p < 0.000$, $\beta = 0.170$, $t = 3.772$; $p < 0.000$, $\beta = 0.281$, $t = 5.959$), supporting *H3a* and *H3b*. Co-production

Table 4 Results of hypothesis testing with R^2

Hypo.	Path	Path coefficient	R^2 effects	<i>t</i> -value	<i>p</i> -value	Results
<i>H1a</i>	Effect on SCF by CCI	0.079	0.661	2.043	0.041	Supported
<i>H1b</i>	Effect on SCF by CSI	0.196	0.661	4.430	0.000	Supported
<i>H3a</i>	Effect on COP by CCI	0.170	0.631	3.772	0.000	Supported
<i>H3b</i>	Effect on COP by CSI	0.281	0.443	5.959	0.000	Supported
<i>H4</i>	Effect on SCF by COP	0.606	0.661	12.491	0.000	Supported
<i>H6</i>	Effect on COP by Big Five personality traits	0.435	0.631	10.239	0.000	Supported
<i>H7a</i>	Effect on CCI by Big Five personality traits	0.717	0.514	24.194	0.000	Supported
<i>H7b</i>	Effect on CSI by Big Five personality traits	0.665	0.443	19.707	0.000	Supported

Source(s): Authors' own work

significantly strengthened consumer–firm relationships ($p < 0.000$, $\beta = 0.606$, $t = 12.491$), confirming *H4*. The Big Five personality traits positively influenced co-production ($p < 0.000$, $\beta = 0.435$, $t = 10.239$), consumer–consumer interaction ($p < 0.000$, $\beta = 0.717$, $t = 24.194$) and consumer–firm interaction ($p < 0.000$, $\beta = 0.665$, $t = 19.07$), supporting *H6*, *H7a* and *H7b*.

5.3 Moderation analysis

The level of social media use was considered a moderating variable in this study for the proposed relationship between social commerce interactivity, co-production and the strength of consumer–firm relationships. Moderation was evaluated via the interaction terms of COP*LSMU, CCI*LSMU and CFI*LSMU using PLS with 5,000 bootstrap resamples. In moderation analysis, the R^2 change is important. The results indicate the existence of significant moderating interaction effects, as R^2 without moderation was 0.661 (in Figure 2), and with the moderation effect, the path now has an R^2 of 0.677, suggesting that there is a moderation effect between COP*LSMU, CCI*LSMU and CSI*LSMU. Results Table 5 shows that the cut-off value for this test will be 1.96 ($\alpha = 0.05$) and 2.54 ($\alpha = 0.01$). Results further show that the interaction terms of COP*LSMU, and CCI*LSMU are significant (t -values = 3.762, t -values = 2.992), but CSI*LSMU is insignificant (t -values = 1.340), and thus *H2b* was not supported. The findings indicate that social media use moderates the relationship between COP and SCF and between CCI and SCF. Consequently, *H2a* and *H5* were supported.

Figure 2 The PLS algorithm results

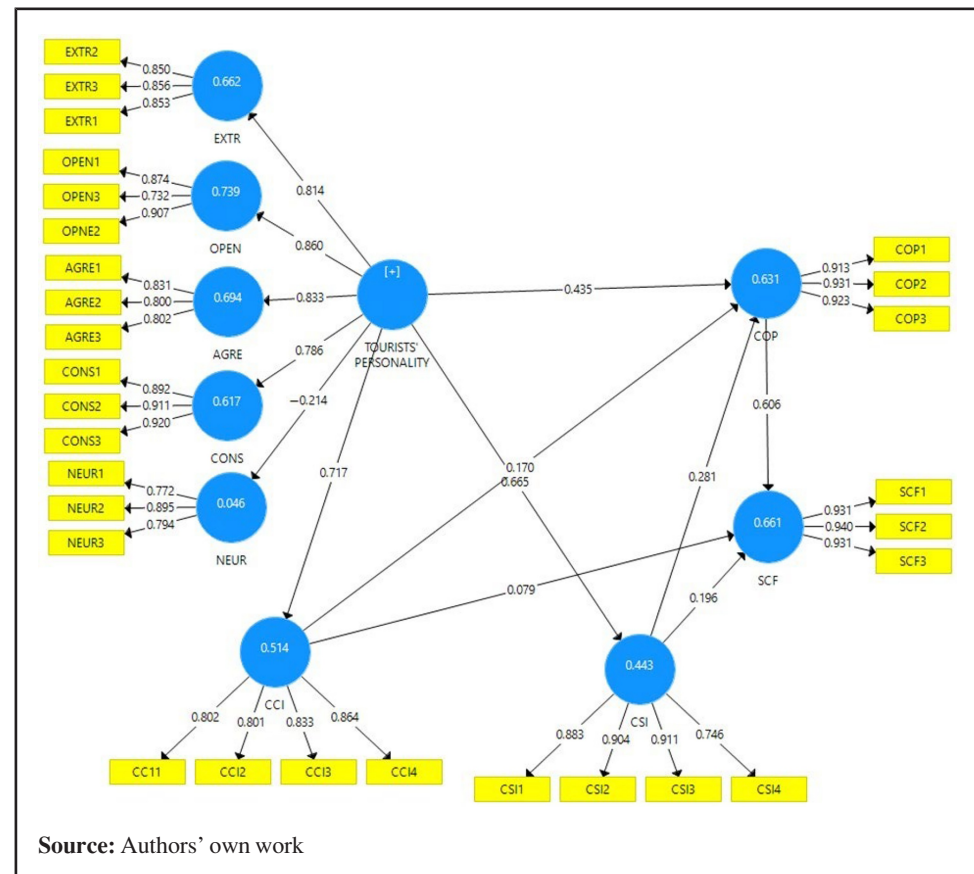
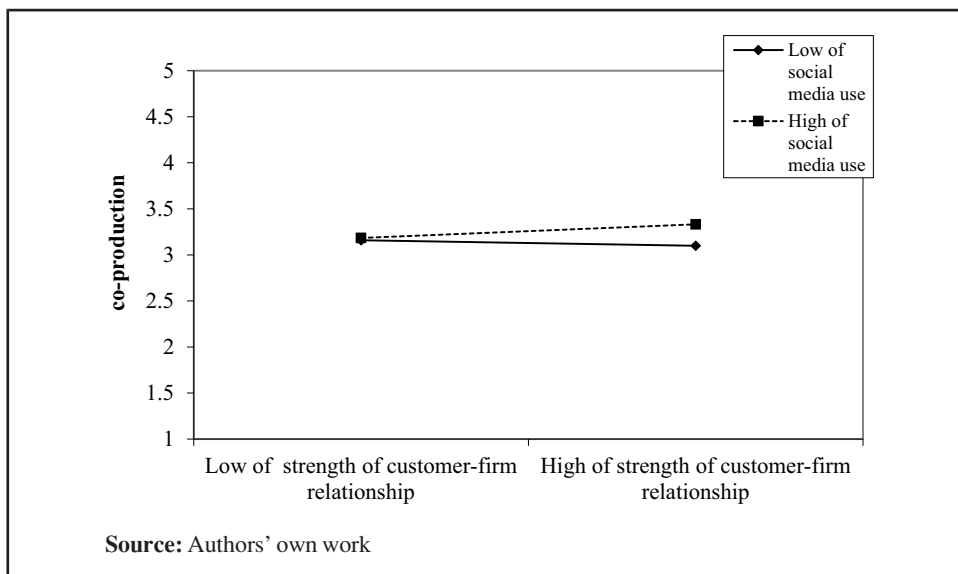
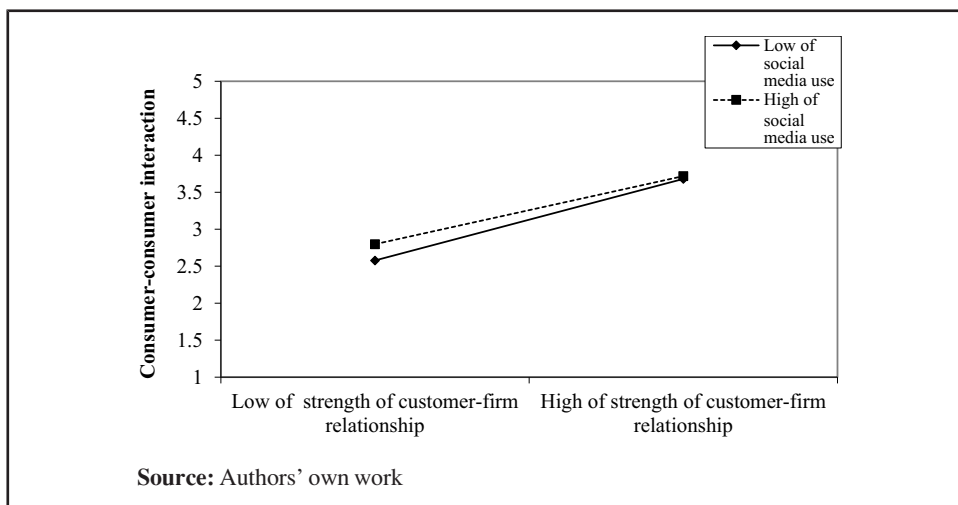


Table 5 Results of the moderator analysis

Hypo.	Path	Path coefficient	t-value	p-values	Results
H2a	CCI*LSMU → SCF	-0.091	2.992	0.003	Significant
H2b	CSI*LSMU → SCF	-0.031	1.340	0.180	Insignificant
H5	COP*LSMU → SCF	0.104	3.762	0.000	Significant

Source(s): Authors' own work

Additionally, the moderating effects of the level of social media use in the path model are illustrated in Figures 3 and 4, respectively. As illustrated in Figure 2, the strength of the consumer–firm relationship increases with higher co-production activities and social media usage. This trend is reflected in consumers' growing adoption of various social media

Figure 3 Plotting graph result of COP*LSMU*SCF relationship**Figure 4** Plotting graph result of CCI*LSMU*SCF relationship

platforms. A low degree of social media use would likely result in a weaker consumer–firm relationship, even though this decline would not be statistically significant. Similarly, as shown in [Figure 4](#), enhancing consumer engagement activities and social media use can improve the quality of the consumer–business relationship. The steep increase in social media usage, as indicated by the slope of the usage curve, further supports this improvement.

6. Discussions and conclusions

6.1 General discussion

This study provides valuable insights into how personality traits influence consumer engagement behaviours within social commerce, particularly through interactivity and co-production, and how these behaviours contribute to strengthening consumer–firm relationships. The findings are consistent with previous studies such as [Akhavannasab et al. \(2022\)](#), [Thai et al. \(2025\)](#) and [Chuang \(2020\)](#), which highlight consumer power and engagement in consumer-to-firm bonds. The study further confirms that social media or social commerce platforms directly affect consumer-business connections in a competitive environment. Social commerce systems allow companies to communicate with customers about products and services, whereas customers are also encouraged to discuss their experiences. The role of consumers as co-producers and their C2C and B2C interactivities on social commerce are consistent with extant studies by [Chuang \(2020\)](#), [Haumann et al. \(2015\)](#) and [Almahdi and Archer-Brown \(2022\)](#). This study further confirms that co-production and social commerce interactivity facilitate reciprocal value creation, in line with social exchange theory. The role of consumers as co-producers amplifies this effect, as collaborative involvement fosters trust, commitment and a sense of mutual benefit between consumers and firms. Moreover, social media use significantly moderates these relationships, enhancing both consumer–consumer and consumer–firm interactions. This highlights the critical role of digital platforms in providing interactive spaces that enable meaningful exchanges, which in turn strengthen consumer loyalty and relationship quality.

Moderation results are essential since the literature emphasizes social media's relevance but lacks empirical evidence for how this level of use moderates consumers' co-production, consumer interactivity and consumer–firm relationships, as shown by [Chuang \(2020\)](#). The moderating effect of B2C interactivity on consumer-to-firm relationships is insignificant. This result is consistent with prior studies (e.g. [Kristiyono et al., 2023](#)), highlighting that social media marketing did not significantly affect brand engagement or customer experience. The effectiveness of social media use for customer relationship management (CRM) has been shown to vary depending on firms' strategic focus; for example, entrepreneurs emphasizing cost leadership strategies did not experience significant benefits from social media intensity ([Sasatanun and Charoensukmongkol, 2016](#)). Similarly, [Thamanna and Subramani \(2025\)](#) found that the direct effect of social media usage on relationship development was insignificant when trust was a mediator, implying that factors such as trust or other psychological mechanisms may play more critical roles in strengthening consumer–firm bonds. Summatively, these findings suggest that while social media is an important platform for interaction, its moderating effect on consumer–seller interactions may be limited unless supported by complementary elements such as trust, strategic alignment or deeper emotional engagement. This may help explain why, in some contexts, including this study, social media use does not significantly strengthen the relationship between B2C and consumer–firm relationship strength. Using a quantitative survey of 547 international and local customers from multiple countries, our study contributes empirical evidence on how personality traits influence consumer engagement behaviours within social commerce, particularly through interactivity and co-production, and how these behaviours contribute to strengthening consumer–firm relationships.

6.2 Theoretical contributions

This study expands consumer engagement, co-production and social commerce research by examining how the Big Five personality traits, co-production and social commerce interactivity impact consumer–firm relationships. It reinforces social exchange theory by highlighting consumer power in the value co-creation process. Additionally, it builds on the prior study by [Zhang et al. \(2014\)](#) examining how social media use enhances consumer interactions in social commerce. Few studies focus on consumer–firm relationships, particularly in the context of co-production, interactivity and personality traits. Thus, this study contributes to theory by emphasizing the role of interactivity (two parties engaging in transactions), co-production (joint product development) and social media use (product discovery), all of which reinforce consumer–firm relationships in social commerce. The social commerce environment and social media use are key elements of this “exchange”.

Secondly, we argue that the results of this study have important implications for the further development of social commerce theory. Social commerce interactivity and co-production are identified in this study as critical determinants of the strength of consumer–firm relationships. This observation offers significant theory development potential; for instance, little is known about the social exchange behaviour when the Big Five personality traits model is applied. Our findings indicate that all Big Five personality traits were significant, which can be attributed to the tenet of moral reciprocity in interactions on social commerce platforms, aligning with the social exchange theory. Although the five personality traits were examined for their impact on shopping behaviour in social commerce, not all yielded significant effects on the dependent outcomes ([Aydin, 2019](#)). Consumers’ personality traits in their social exchange behaviour raise a need to explore and determine the relative importance of each trait in social commerce interactivity and co-production ([Aydin, 2019](#)).

Thirdly, findings show that when firms offer meaningful exchanges, consumers reciprocate in social commerce. Social commerce interactivity drives co-production, strengthening consumer–consumer and consumer-to-firm relationships. These interactions foster fairness and reciprocity, where engaged consumers receive benefits like enhanced experiences and tailored offerings, building mutually valued relationships aligned with social exchange theory. This finding is consistent with previous work by [Chuang \(2020\)](#), which confirms the critical role of social media in improving collaborative interaction between social exchange actors. A firm’s prioritization of social commerce interactivity can strengthen customer relationships. Our study highlights consumer co-production as a key factor in enhancing consumer-to-firm relationships, primarily through reciprocity. The results show that greater consumer involvement in co-production leads to stronger relationships among exchange members, which is consistent with the studies of [Wu and Mursid \(2019\)](#); [Wu et al. \(2014\)](#). Our findings indicate that co-production enhances social commerce interactivity, which in turn strengthens consumer–firm relationships. These results align with previous research by [Haumann et al. \(2015\)](#), which suggests that increased interaction and co-production foster stronger relationships, as exchange members perceive these interactions as beneficial.

Spotlight analysis assesses the moderating role of consumer social media use. This study found that social media use moderates the link between consumer co-production and consumer–firm relationship strength. The social commerce environment, particularly social media, is crucial for generating information that helps firms enhance products and meet exchange members’ needs. Social media allows firms to deepen customer insights and strengthen relationships, giving them a competitive edge. [Huo et al. \(2023\)](#) stated that, “cooperating with customers to organize downstream information exchange and capture value enhances product development”. Strong relationships, trust and commitment benefit from this process. However, excessive social media use may lead to information overload, conflicting peer reviews and hinder decision-making. Random customer information may lack expert knowledge, limiting its value in product promotion.

6.3 Practical implications

The findings of this study have several important implications for e-commerce and e-tailers. Social commerce interactivity is a crucial social exchange component for consumer–consumer and consumer–firm relationships that could guide managers in developing competitive strategies. Managers must understand their consumers' requirements and preferences to collaborate and co-create goods and services with social groups and customers, and respond fast to changing market conditions. Firms should collaborate with consumers and implement effective information systems to enhance sharing, quality and efficiency.

The findings highlight consumer co-production's role in transforming social commerce interactivity into strong consumer–firm relationships. Managers should foster virtual social commerce communities where consumers can discuss, collaborate and contribute to product creation, enhancing brand value and satisfaction. Firms should offer digital or in-person platforms for consumers to share ideas on product designs, with incentives to encourage participation. Based on reciprocity, stronger relationships drive continued social commerce interactivity. Thus, managers should integrate reciprocal actions into relationship marketing, such as real-time, personalized engagement through chat-based platforms, to address consumer needs better.

Social commerce interactivity and co-production provide benefits to both customers and businesses. These factors offer customers enhanced engagement opportunities, personalized experiences and a sense of involvement in the value-creation process. They can lead to increased satisfaction, loyalty and a stronger connection with the business. For businesses, social commerce interactivity and co-production enable valuable insights into customer preferences, needs and behaviours, allowing them to tailor their offerings and improve customer satisfaction. Ultimately, these factors contribute to building mutually valued relationships based on shared value creation and positive customer experiences.

6.4 Limitations of the study

Although this study makes several theoretical contributions, it has limitations that suggest avenues for future research and theoretical development. Firstly, the study used a cross-sectional design to validate the research model, preventing the examination of causal relationships between constructs. Future research should consider longitudinal designs to test similar constructs. Secondly, the data source of our study is Vinpearl's customers. Future studies could collect data from other service providers in Vietnam and other countries to demonstrate the generalisability of the findings. Thirdly, we measured the strength of co-production and consumer-to-firm relationships from consumer-to-consumer and consumer-to-firm perspectives. However, other factors, such as technology, usefulness and entertainment, may influence business–consumer relationships. Fourthly, we treated Big Five personality traits as a single construct due to limitations of sample size and model complexity. Future research should measure the disaggregated effects of the personality trait dimensions, especially neuroticism, to gain comprehensive insights into the consumer-to-firm relationship. Additionally, although our study demonstrates the psychological effects of the Big Five personality traits on social commerce interactivity (C-C; B-C) and co-production from a consumer perspective, future research can focus on investigating other behavioural factors such as consumer attitude, emotion and perceived usefulness from the employees/business perspective. Finally, our results provide useful insights into Big Five traits, the influence of social media engagement and co-production on consumer-to-firm relationships, but do not explicitly differentiate effects across various sectors, including marketing, media or technology. Social commerce interactivity and co-production vary by industry due to differences in consumer expectations, product characteristics and communication norms, suggesting that social interaction on purchase behaviour is complex, involving user-website, user-to-seller, user-to-user and user-to-online friend

interactions. These interactions enhance users' physical and social presence, which in turn affects their purchasing intentions (Xq *et al.*, 2021). Thus, marketers in consumer goods industries may experience more direct benefits from interactive social commerce features that enhance immediate purchase intentions and loyalty. Technology or manufacturing firms could leverage co-production through user-driven innovation and feedback loops that differ from traditional marketing approaches (Guo *et al.*, 2024; Foroudi *et al.*, 2020). Future research should therefore investigate how industry-specific factors shape the manner and effectiveness of social media engagement and co-production, providing tailored strategies that reflect unique contextual demands. Such differentiation would enhance understanding of the boundary conditions under which social commerce dynamics operate and offer more precise guidance for practitioners in diverse sectors.

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Appendix

Table A1 Measurement properties: loadings, Cronbach's alphas, composite reliability and AVEs

<i>Construct/Items</i>	<i>Loading factor</i>	<i>t-value</i>	<i>Cronbach's alpha</i>	<i>Composite reliability</i>	<i>Average variance extracted</i>	<i>Variance inflation factor</i>
Extraversion			0.813	0.889	0.728	
EXTR1: I talk a lot to different people on this tour	0.853	57.519				1.791
EXTR2: I feel comfortable around people	0.850	59.708				1.797
EXTR3: I don't mind being the centre of attention	0.856	75.487				1.770
Openness			0.790	0.878	0.707	
OPEN1: I get excited by the new ideas	0.874	68.969				2.184
OPEN2: I enjoy looking for the deeper meaning in things	0.732	24.477				1.356
OPEN3: I have a vivid imagination	0.907	104.180				2.388
Agreeableness			0.740	0.852	0.658	
AGRE1: I sympathize with others' feelings	0.831	46.953				1.524
AGRE2: I am concerned about others	0.800	30.725				1.426
AGRE3: I believe that others have good intentions	0.802	44.569				1.469
Consciousness			0.893	0.934	0.824	
CONS1: I pay attention to details	0.892	82.187				2.343
CONS2: I am always prepared	0.911	98.609				2.858
CONS3: I make plans and stick to them	0.920	112.383				3.032
Neuroticism			0.766	0.862	0.676	
NEUR1: I get stressed out easily	0.772	4.556				1.547
NEUR2: I fear for the worst	0.895	3.580				1.691
NEUR3: I am filled with doubts about things	0.794	3.947				1.488
Consumer–consumer interaction			0.844	0.895	0.681	
CCI1: I will ask my friends/others on forums and brand communities to provide me with their suggestions before I choose a brand for a hotel/resort chain in Vietnam.	0.802	35.190				1.748
CCI2: I am willing to share my own shopping experience of a brand with my friends through ratings and reviews	0.801	32.645				2.057
CCI3: I would like to use people's online recommendations to book a hotel from Vinpearl	0.833	49.092				1.963
CCI4: I am willing to recommend a hotel and resort of Vinpearl that is worth buying to my friends on the brand page	0.864	56.676				2.531
Consumer–seller interaction			0.884	0.921	0.745	
CSI1: The brand page of Vinpearl keeps me informed of new development	0.883	64.750				2.939
CSI2: The brand page of Vinpearl listens to my feedback on its service	0.904	81.835				3.581
CSI3: The brand page of Vinpearl provides me with meaningful information	0.911	100.536				3.269
CSI4: The brand page of Vinpearl provides me with timely information	0.746	30.153				1.673
Co-production			0.913	0.945	0.851	
COP1: I do things to make Vinpearl staff's job easier	0.913	90.574				2.896
COP2: I prepare my queries before contacting Vinpearl staff	0.931	119.270				3.435
COP3: I openly discuss my needs with Vinpearl staff to help them deliver the best	0.923	103.069				3.148
Strength of customer–firm relationships			0.927	0.954	0.873	

(continued)

Table A1

<i>Construct/Items</i>	<i>Loading factor</i>	<i>t-value</i>	<i>Cronbach's alpha</i>	<i>Composite reliability</i>	<i>Average variance extracted</i>	<i>Variance inflation factor</i>
SCF1: Since Vinpearl started using social media, the company and customers have experienced an increase in mutual trust	0.931	110.833				3.544
SCF2: Since Vinpearl started using social media, the company and customers have been willing to jointly solve problems emerging in collaborations	0.941	147.654				3.847
SCF3: Since Vinpearl started using social media, the ties between our company and customers have been describable as "mutually gratifying"	0.931	101.828				3.525
Levels of social media use			0.838	0.903	0.756	
LSMU1: Social media has been used by customers and many salespersons of Vinpearl	0.909	102.257				2.477
LSMU2: Social media is widely recognized among customers and the salespersons of Vinpearl	0.809	34.434				1.622
LSMU3: Social media is used by the salespersons of Vinpearl almost every day	0.888	70.425				2.375
Source(s): Authors' own work						

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