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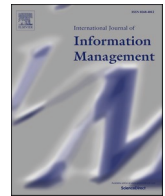
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Unrequited love? A mixed-methods study of parasocial engagement with social media influencers

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ABSTRACT

Companies increasingly use social media influencers to engage with consumers and to promote their products. However, despite growing research interest in these parasocial relationships, the nature of parasocial engagement has not yet been comprehensively conceptualized. This study integrated previous studies within a parasocial engagement framework with three dimensions: cognitive processing, affection, and behavior. It used a mixed-methods approach: a meta-analysis of 117 studies with a total of 47,647 respondents and an exploratory qualitative study of 25 interviews. Current accounts of parasocial engagement were extended by identifying influencer characteristics (i.e., expertise, trustworthiness, social attractiveness, physical attractiveness, and congruence) as key elements of the construct. The study findings confirmed that the dimensions of parasocial engagement are collectively related to brand associations and purchase intentions, and that the impact of parasocial engagement on purchase intention is dependent on the product characteristics (i.e., involvement and purchase frequency) and the content type (i.e., picture vs. video). Theoretical and managerial implications of these findings are discussed, and an agenda for future research is proposed.

1. Introduction

In recent decades, managers and researchers have increasingly recognized the power of one-sided parasocial relationships (PSRs) between a media persona and media users (Erdogan, 1999; Hughes et al., 2019; Leung et al., 2022b; Rubin et al., 1985). The marketing opportunities afforded by these relationships have been revolutionized by social media, as the increasing popularity of social media platforms facilitates the gathering of followers. The extent to which online influencers can engage their followers on social media is now of indisputable importance (Leung et al., 2022b). According to Leung et al. (2022b), *social media influencers* (SMIs) are “individuals, groups, or even virtual avatars who have built a network of followers on social media and are regarded as digital opinion leaders with significant social influence on their network” (p. 228). As people increasingly form PSRs with SMIs in the same way that they form regular social relationships, marketers can effectively leverage these SMIs to promote their products (Dibble et al., 2016). Moreover, these SMIs’ deep engagement with their followers can affect consumer attitudes and thus, increase company sales and profitability (Hughes et al., 2019; Leung et al., 2022a). Therefore, SMIs have become a unique commercial resource, due to which companies select

particular SMIs to help market their offerings and engage consumers.

Several theoretical perspectives have been applied to understand the determinants and consequences of SMIs’ parasocial engagement with their consumers—a term encompassing parasocial relationships (PSRs), parasocial attachment, or behavior resulting from parasocial interaction (Tukachinsky & Stever, 2018). However, these studies often lack theoretical and conceptual depth (Bergkvist & Zhou, 2016; Taillon et al., 2020). To address this issue, we employed the concept of consumer engagement (Hollebeek, 2011a) to ground and integrate PSR research.

Our proposed parasocial engagement framework deviates from the typical view of engagement with SMIs in previous studies, which often consider it merely as a behavioral outcome (e.g., likes, comments, and shares) of social media interactions with SMIs (Hughes et al., 2019). Instead, we treat parasocial engagement as a multidimensional construct with cognitive, affective, and behavioral dimensions. Beyond these dimensions, our framework captures the impact of SMI characteristics on parasocial engagement and their related effects on brand associations and purchase intention (Han & Balabanis, 2024; Vrontis et al., 2021).

Bergkvist and Zhou (2016, p. 665) noted that “the ultimate goal” of PSR research is to identify how SMIs persuade consumers to buy

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branded products. Previous studies have shown mixed effects of SMI characteristics on parasocial engagement dimensions. For instance, [Aw et al. \(2022\)](#) found that SMIs' expertise significantly affects parasocial engagement, whereas [Yuan and Lou \(2020\)](#) found the effect insignificant. Similarly, [Sakib et al. \(2020\)](#) reported a positive effect of SMIs' trustworthiness on parasocial engagement, but [Bi & Zhang \(2022\)](#), along with [Yuan and Lou \(2020\)](#), considered this effect insignificant. Regarding attractiveness, [Farivar et al. \(2022\)](#) and [Sakib et al. \(2020\)](#) discovered positive effects on parasocial engagement, whereas [Aw et al. \(2022\)](#) and [Sokolova and Kefi \(2020\)](#) reported negative effects. Additionally, [Sakib et al. \(2020\)](#) found positive effects of SMIs' congruence on parasocial engagement, but [Yuan and Lou \(2020\)](#) found negative effects. Furthermore, while several studies have shown that parasocial engagement positively affects consumers' purchase intentions ([Hwang & Zhang, 2018](#); [Sokolova & Kefi, 2020](#)), other studies have highlighted negative effects ([Kim, 2020, 2022](#)).

Building on these mixed findings, previous literature reviews have presented several conceptual frameworks on SMI marketing ([Han & Balabanis, 2024](#); [Kanaveedu & Kalapurackal, 2022](#); [Vrontis et al., 2021](#)). This current study is the first to use meta-analytical structural equation modeling (MASEM) to empirically test the relationships among the dimensions, determinants, and consequences of parasocial engagement, thereby addressing inconsistencies in prior research (See [Table 1](#)). By integrating these perspectives, our research aims to provide a more comprehensive understanding of how SMIs can effectively engage consumers and influence their purchase intentions.

As the impact of parasocial engagement may vary in different contexts, several studies have highlighted the need to investigate the role of different social media platforms, forms of content, and product categories in this regard ([Aw & Agnihotri, 2023](#); [Aw & Chuah, 2021](#); [Bergkvist & Zhou, 2016](#); [Chen et al., 2022](#); [Hughes et al., 2019](#); [Leung et al., 2022b](#); [Vrontis et al., 2021](#)). This study adds to the parasocial engagement research by testing the impact of various moderators of the relationship between engagement and purchase intention using hierarchical linear modeling (HLM). Specifically, rooted on [Vrontis et al. \(2021\)](#), we explored the impact of product characteristics (involvement and purchase frequency) and content type (pictures vs. videos). In addition, similar to previous meta-analyses (see [Blut & Wang, 2020](#); [Iyer et al., 2020](#)), we tested the impact of control variables (i.e., the sample source, publication status, research method, sample gender, and publication year). To deepen the understanding of these results, we conducted an exploratory qualitative study. Using semi-structured thematic interviews, we generated deep insights into the novel findings of our moderator analysis, identified new factors potentially influencing the relationship between parasocial engagement and purchase intention, and developed research propositions. By employing a mixed-methods approach that incorporates both quantitative and qualitative methods, we can identify factors from previous literature while also offering new potential explanations.

The remainder of this paper is organized as follows. After introducing the relevant literature, we describe the research designs of Studies 1 and 2. Then, we present the meta-analytical Study 1. Next, we present the exploratory qualitative Study 2. Finally, we discuss the theoretical and managerial implications of the study findings, as well as the limitations of this study and potential future research directions raised herein.

Table 1
Existing review articles on social media influencers compared with this study.

	Han & Balabanis (2024)	Kanaveedu & Kalapurackal (2022)	Tanwar et al. (2022)	Vrontis et al. (2021)	This study
Number of articles included	Not available	65	76	68	117
Research method	Narrative review	Systematic literature review	Bibliometric analysis	Systematic literature review	Meta-analysis
Structural equation modeling	-	-	-	-	✓
Moderator analysis	-	-	-	-	✓

2. Literature review

2.1. Consumer engagement construct

Over the last two decades, researchers have shown increasing interest in the topic of consumer engagement. However, previous studies have failed to agree on a unifying framework for competing variants in multiple contexts, including for brand engagement ([Hollebeek, 2011b](#); [Hollebeek et al., 2014](#)), customer engagement ([Brodie et al., 2011](#); [Harmeling et al., 2017](#); [Kumar & Pansari, 2016](#)), brand community engagement ([Algesheimer et al., 2005](#)), and online media engagement ([Calder et al., 2009](#)) in the behavioral research stream ([Beckers et al., 2018](#); [Harmeling et al., 2017](#); [Jaakkola & Alexander, 2014](#); [Kumar & Pansari, 2016](#); [Van Doorn et al., 2010](#)), the psychological research stream ([Calder et al., 2009](#); [Higgins, 2006](#); [Mollen & Wilson, 2010](#)), and the multidimensional research stream ([Alvarez-Milán et al., 2018](#); [Hollebeek, 2011a](#); [Hollebeek et al., 2014](#); [Vivek et al., 2012](#)).

The behavioral research stream views engagement in terms of consumer behaviors ([Beckers et al., 2018](#); [Harmeling et al., 2017](#); [Jaakkola & Alexander, 2014](#); [Kumar & Pansari, 2016](#); [Van Doorn et al., 2010](#)) and has generally adopted van Doorn et al.'s (2010) definition of *engagement* as "the customers' behavioral manifestation toward a brand or firm, beyond purchase, resulting from motivational drivers" (p. 253). In contrast, the psychological stream views *engagement* as a cognitive and affective commitment to the object of engagement ([Calder et al., 2009](#); [Mollen & Wilson, 2010](#)). More specifically, [Calder et al. \(2009\)](#) asserted that *engagement* refers to user perceptions of how the object of engagement fits into their lives. *Cognitive engagement* with an object refers to the user's belief that the object helps them live their life, while *affective engagement* with an object refers to the enjoyment of experiencing the object. *Psychological engagement* is often operationalized as a unidimensional construct within which affective and cognitive dimensions are indistinguishable ([Bozkurt et al., 2021](#); [France et al., 2016](#)).

Within the multidimensional research stream, accounts of engagement variously emphasize the psychological and behavioral dimensions ([Alvarez-Milán et al., 2018](#)); the cognitive, affective, and behavioral dimensions ([Hollebeek, 2011a](#)); or the cognitive, affective, behavioral, and social dimensions ([Vivek et al., 2012](#)). According to [Hollebeek et al. \(2014\)](#), the *cognitive* dimension can be defined as "a consumer's level of brand-related thought processing and elaboration in a particular consumer [or] brand interaction"; the *affective* dimension, as "a consumer's degree of positive brand-related affect in a particular consumer [or] brand interaction"; and the *behavioral* dimension, as "a consumer's level of energy, effort, and time spent on a brand in a particular consumer [or] brand interaction" (p. 154). While survey methods have been traditionally used to measure engagement, the emergence of social media has facilitated measurement based on consumer reactions to social media posts, prompting the increased adoption of the behavioral perspective ([Esalmi et al., 2022](#)).

2.2. Dimensions of parasocial engagement

Although several theories have been deployed to explain the PSRs between consumers and SMIs (see Web Appendix B), this conceptually diverse research domain remains confusing. Having emerged relatively recently in the academic literature, the concept of parasocial engagement has not yet been clearly defined. Competing definitions of

customer engagement in social media contexts have recently generated significant debate (Hollebeek et al., 2014; Hughes et al., 2019; De Oliveira Santini et al., 2020). Hollebeek et al. (2014) advanced a three-dimensional (i.e., cognitive, affective, and behavioral) model of social media engagement. In contrast, Hughes et al. (2019) highlighted social media behaviors, such as conversations and brand-related referrals. This latter perspective was later criticized by De Oliveira Santini et al., 2020, who argued that defining social media engagement in terms of customer activities fails to explain how customer engagement adds value to a firm.

Previous studies of social media engagement have addressed content at a more universal level (De Oliveira Santini et al., 2020). For the current study, we chose to focus on PSRs involving SMIs. In light of the unique, one-sided nature of these PSRs—where consumers feel connected to SMIs who are largely unaware of their existence—we contend that the concept of engagement warrants careful definition in this context. In line with Hollebeek (2011a) and Tukachinsky and Stever (2018), we regard *engagement* as a multidimensional (i.e., cognitive, affective, and behavioral) construct. Based on the foregoing discussion, we define *parasocial engagement* as a customer's cognitive, affective, and behavioral investments in a given PSR. We argue that the multidimensional perspective provides a more complete view than the behavioral perspective, which focuses on customers' social media activity. Thus, a multidimensional perspective should be used to investigate one-sided relationships like because it captures the full complexity and depth of these interactions.

Cognitive processing refers to the thoughts and elaborations associated with a particular interaction (Hollebeek et al., 2014). In previous studies, the PSR theory has been used to explain relationships with media personalities (Horton & Wohl, 1956); that is, consumers form a deep psychological bond with SMIs based on their lifestyles or interests because they see themselves as similar to such SMIs (Sokolova & Kefi, 2020). Meanwhile, according to the social cognitive theory, social interactions reflect an individual's cognitive activity. The PSR theory can be seen as an extension of the social cognitive theory because it assumes that the same cognitive processes occur in parasocial and face-to-face situations. To that extent, cognitive processing in social media contexts can be understood by making psychological inferences about SMIs' behaviors (Giles, 2002; Perse & Rubin, 1989). According to the PSR theory, cognitive processing underpins consumers' relationships with a given SMI and how that SMI shapes their opinions (Dibble et al., 2016; Sundermann & Munnukka, 2022).

Previous studies have also identified affection as a dimension of parasocial engagement (Chen et al., 2019). Hollebeek et al. (2014) defined *affection* as the positive emotions associated with interaction. Thus, in the context of PSRs, *affection* refers to the emotions evoked by an SMI. Since the uses and gratifications theory states that consumers use media to fulfill their needs, the role of affection in PSRs is explained in terms of affective needs, such as the need for entertainment (Katz et al., 1973). Consumers form deep emotional connections with SMIs that are stronger than brand associations (Hu et al., 2020) and can play an important role in decision-making (Yu et al., 2024).

The *behavior* dimension refers to the resources invested in a particular interaction (e.g., effort and time; Hollebeek et al., 2014). According to the parasocial interaction theory (Rasmussen, 2018), people form PSRs with SMIs in much the same way that they form regular social relationships. Thus, by implication, consumers perceive parasocial interactions as similar to normal social interactions (Dibble et al., 2016), and SMI content that stimulates cognitive and affective engagement yields behavioral outcomes such as likes, shares, and comments (Hollebeek & Macky, 2019). Thus, *behavioral engagement* refers to the energy, time, and effort that an SMI's followers invest in their interactions with the SMI and can be measured through likes and comments on the SMI's social media posts (Hughes et al., 2019).

3. Research design

This paper aimed to understand SMI characteristics' impact on parasocial engagement and related effects on brand associations and purchase intention, and the moderating effects of social media platforms, forms of content, and product categories on the relationship between parasocial engagement and purchase intention. Consequently, we adopted a mixed-methods approach that included both quantitative and qualitative methods in two studies. In Study 1, we tested our conceptual framework by conducting a meta-analytical study using MASEM and HLM. In Study 2, we deepened our understanding of the identified moderating effects using a semi-structured interview protocol based on the results of Study 1. Consequently, we deepened our understanding of the novel results of Study 1 and drew up a future research agenda regarding other potential moderators.

4. Study 1: meta-analysis and meta-analytical structural equation modeling

4.1. Overview

In Study 1, meta-analytical methods were used to synthesize the results of 117 studies on parasocial engagement with SMIs. Then, we used MASEM and HLM to test our conceptual framework. Consequently, we identified the determinants and consequences of parasocial engagement, as well as the moderating effects of the product characteristics, content type, and control variables.

4.2. Conceptual framework and hypothesis development

The conceptual model that informed this meta-analysis is shown in Fig. 1. Based on previous literature reviews, we formulated a comprehensive model of parasocial engagement (Han & Balabanis, 2024; Vrontis et al., 2021). The three dimensions of parasocial engagement (i.e., cognition, affection, and behavior) served as the focal constructs. Among the determinants and consequences of parasocial engagement identified in previous studies, we were especially interested in SMI characteristics as determinants (Aw & Chuah, 2021; Lou & Kim, 2019; Vrontis et al., 2021; Yuan & Lou, 2020), and in brand associations and purchase intention as consequences (Aw & Chuah, 2021; Leite & de Paula Baptista, 2022; Lou & Kim, 2019; Vrontis et al., 2021). In addition, based on the suggestions of prior studies, we tested the moderating effect of product characteristics and content type on the relationship between parasocial engagement and purchase intention (Aw & Agnihotri, 2023; Aw & Chuah, 2021; Bergkvist & Zhou, 2016; Chen et al., 2022; Hughes et al., 2019; Leung et al., 2022b; Vrontis et al., 2021).

4.3. Determinants of parasocial engagement

4.3.1. SMI expertise

According to Bergkvist and Zhou (2016), the main concern of PSR research is how SMIs persuade consumers to purchase products and services. The source credibility theory states that *persuasiveness* is the sum of an information source's expertise and trustworthiness (Petty & Cacioppo, 1986), and McQuarrie et al. (2013) stated that an SMI's *expertise* can be defined in terms of the SMI's content attributes that indicate informativeness, knowledge, or experience in a specific area. Meanwhile, the information processing theory characterizes consumer-to-consumer communications as having two types of effects: informative and persuasive (Herr et al., 1991). On that basis, we contend that SMIs' expertise is a function of their informativeness and persuasiveness as information sources. Based on Giles's (2002) PSR theory, which asserts that greater expertise increases parasocial engagement, we expect consumers to be more willing to form PSRs with SMIs whom they perceive as experts in a given field. Accordingly, we formulated the following hypothesis:

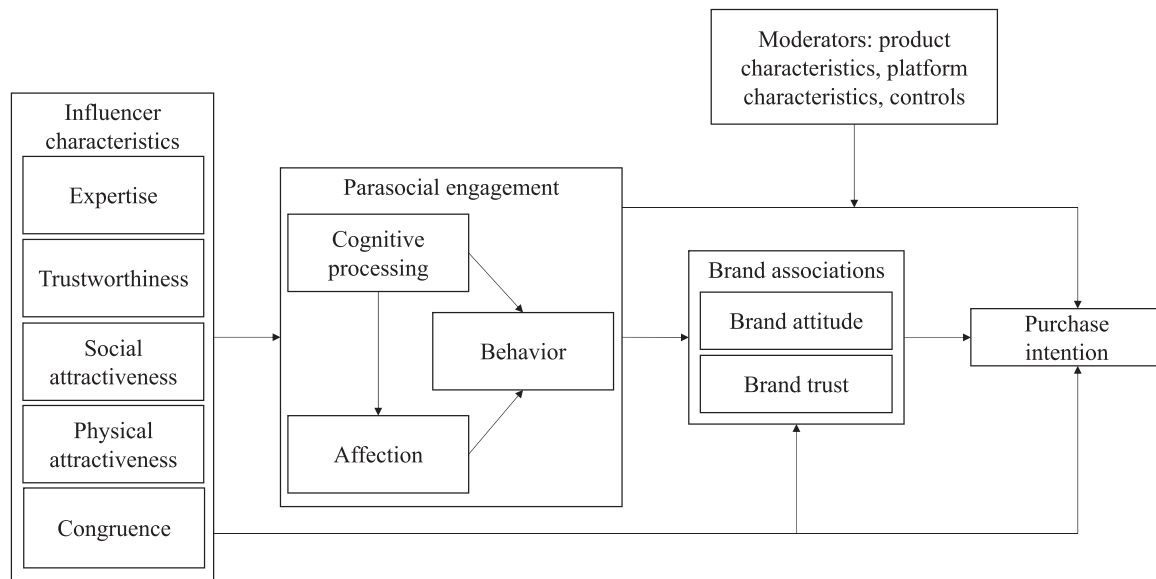


Fig. 1. Conceptual framework.

H1. SMI expertise is positively linked to (a) cognitive processing, (b) affection, and (c) behavior.

4.3.2. SMI trustworthiness

The greater the perceived trustworthiness of a given information source is, the stronger the persuasive effect of that source is likely to be (Petty & Cacioppo, 1986; Wathen & Burkell, 2002). The findings in previous studies on the impact of SMI trustworthiness on parasocial engagement are mixed. Some studies have identified positive effects on parasocial engagement—that is, that greater perceived SMI trustworthiness results in acceptance of the SMI's endorsements and stronger engagement with the SMI (Manchanda et al., 2022; Munnukka et al., 2019; Yuan & Lou, 2020). In contrast, Bi & Zhang (2022) uncovered a negative impact between influencer credibility and PSR. However, in line with the source credibility theory (Petty & Cacioppo, 1986), we expected greater SMI trustworthiness to promote stronger parasocial engagement by establishing trusting relationships with SMIs. Accordingly, we formulated the following hypothesis:

H2. SMI trustworthiness is positively linked to (a) cognitive processing, (b) affection, and (c) behavior.

4.3.3. SMI attractiveness

Following Masuda et al. (2022), we treated social attractiveness and physical attractiveness as separate constructs. In the current study, *social attractiveness* refers to an SMI's likability (Sokolova & Kefi, 2020), while *physical attractiveness* can be defined as the extent to which a consumer perceives an SMI's social media content as visually appealing (Putzer, 1983). In some studies, physical and social attractiveness were associated with higher levels of SMI engagement (Gong & Li, 2017; Lee & Watkins, 2016). However, Aw et al. (2022) and Sokolova and Kefi (2020) presented opposite findings. According to the social identity theory (Brewer, 1991), greater SMI attractiveness generates a higher intention to identify with the SMI and, consequently, strengthens parasocial engagement. Accordingly, we formulated the following hypotheses:

H3. An SMI's social attractiveness is positively linked to (a) cognitive processing, (b) affection, and (c) behavior.

H4. An SMI's physical attractiveness is positively linked to (a) cognitive processing, (b) affection, and (c) behavior.

4.3.4. Congruence

According to the self-congruence theory, *self-congruity* or *self-concept*

congruity is the sum of one's feelings and thoughts about oneself (Rosenberg, 1979; Sirgy & Su, 2000). For the current study, we define *congruence* as the relationship between a consumer's self-congruence and the consumer's image of a given SMI (see also Sirgy, 1981). A consumer's identification with an SMI has been shown to positively mediate the relationship between the consumer's information-seeking and purchasing behavior (Croes & Bartels, 2021). Congruence is known to have a positive impact on parasocial engagement with SMIs because it determines the extent to which consumers form relationships with others (Sokolova & Kefi, 2020; Vazquez et al., 2020). However, Yuan et al. (2020) found negative effects for this path. Drawing on the social identity theory (Brewer, 1991), we expected a higher level of congruence to engender a stronger intention to identify with SMIs, which would positively impact parasocial engagement. Accordingly, we formulated the following hypothesis:

H5. Congruence is positively linked to (a) cognitive processing, (b) affection, and (c) behavior.

4.4. Consequences of parasocial engagement

4.4.1. Brand associations

Previous studies have treated consumers' brand associations as brand-related outcomes of engagement (Hollebeek et al., 2014). SMIs play an important role in social media brand communications (Jiménez-Castillo & Sánchez-Fernández, 2019; Uzunoglu & Misci Kip, 2014). Adopting this logic, we operationalized brand associations as outcomes of parasocial engagement; more specifically, we tested the impact of engagement on brand trust and brand attitude. Ganesan and Hess (1997) defined *brand trust* as the expectation that a brand will fulfill its promises, and Percy and Rossiter (1992) defined *brand attitude* as the consumer's perception of the extent to which a brand satisfies their motives for shopping. That is, a consumer favors brands within a product category based on their brand trust and brand attitude. Based on the attachment theory (Bowlby, 1969), we expected parasocial engagement to be a highly effective means of engendering brand trust and brand attitude. Accordingly, we formulated the following hypotheses:

H6. (a) Cognitive processing, (b) affection, and (c) behavior positively impact brand trust.

H7. (a) Cognitive processing, (b) affection, and (c) behavior positively impact brand trust.

4.4.2. Purchase intention

Purchase intention indicates the likelihood that a consumer will make future purchases (Rose et al., 2012). According to the social cognitive theory, consumers' cognitive goals drive their behavior (Bandura, 1991). Thus, parasocial engagement might influence behavioral loyalty, which increases purchase intention (Lim et al., 2020). On the other hand, the persuasion theory links purchase intention to SMI characteristics. For example, when consumers perceive an SMI as expert, trustworthy, and attractive, they are more likely to buy the products that the SMI promotes by virtue of the SMI's greater persuasiveness (Masuda et al., 2022). Therefore, we formulated the following hypothesis:

H8. Parasocial engagement mediates the relationships between an SMI's (a) expertise, (b) trustworthiness, (c) social attractiveness, (d) physical attractiveness, and (e) congruence with consumers' purchase intentions.

4.5. Moderators

4.5.1. Product characteristics

Product involvement refers to a consumer's perception of a product category's relevance, indicating the level of interest that the product evokes (Dholakia, 2001). The greater a consumer's product involvement is, the more time the consumer is likely to invest in purchase-related decision-making on the product. *Purchase frequency* refers to the length of the purchasing cycle; while routine products are purchased frequently and thus, have a shorter purchasing cycle, non-routine products are purchased less frequently and thus, have a longer purchasing cycle (Floyd et al., 2014), which entails greater decision-making risk.

Because consumers often recognize SMIs' hidden commercial motives for promoting products, they may favor more credible alternative information sources when making purchases that they consider important. Referring to the source credibility theory (Cacioppo & Petty, 1981), we therefore expected parasocial engagement to have a stronger impact on purchase intention in the case of products that require less decision-making effort (i.e., low-involvement or frequently purchased products). Consequently, the risk related to purchasing these products decreases the positive impact of the engagement dimensions on the consumer's purchase intention. Accordingly, we formulated the following hypotheses:

H9. The impact of parasocial engagement on purchase intention is stronger for low-involvement products than for high-involvement products.

H10. The impact of parasocial engagement on purchase intention is stronger for frequently purchased products than for less frequently purchased products.

4.5.2. Content type

Because different forms of content afford different possibilities for marketing, recent studies have sought to compare the effectiveness of parasocial engagement across different platforms and content types (Aw & Chuah, 2021; Chen et al., 2022; Hughes et al., 2019; Leung et al., 2022b). Social media platforms differ in terms of user engagement, which predicts the persuasive effects of content and engagement outcomes (Hughes et al., 2019). For example, De Oliveira Santini et al. (2020) compared the impact of customer satisfaction on engagement across social media platforms and showed that satisfaction generates stronger engagement on Twitter (now "X") than on Facebook or blogs. There is some evidence that video-based social media content stimulates more of the viewer's senses than still-image content, and that media richness is, in turn, linked to higher engagement (Moran et al., 2020). Video-based platforms, such as YouTube and TikTok, exhibit higher engagement rates than short-form content platforms, such as Instagram, Facebook, and Twitter (X; Rival, 2022). Accordingly, we formulated the following hypothesis:

H11. The impact of parasocial engagement on purchase intention is

stronger for video content than for still-image content.

4.5.3. Controls

Several studies of PSRs examined consumer behaviors in female SMI settings using female consumer samples (e.g., Reinikainen et al., 2020; Sokolova & Kefi, 2020). Thus, we investigated the moderating impact of female samples. We also assessed the impact of the sample source, as student samples are known to produce stronger effect sizes (Geyskens et al., 2009). We further looked at the publication status to evaluate the impact of publication bias, as significant results are more likely to be published than insignificant results (Hunter & Schmidt, 2004). The moderating effect of the year of publication was also assessed to gauge development over time. Finally, we compared the moderating influence of the survey and experimental research methods.

4.6. Methods

4.6.1. Data collection and coding

We began our literature review by performing searches of relevant databases and other sources (e.g., ABI/INFORM, Scopus, ProQuest Central, Emerald, EBSCO Business Source Premier, ProQuest Dissertation and Theses, Google Scholar, and ResearchGate) using a range of keywords related to PSRs with SMIs, including "social media influencers," "parasocial relationships," "parasocial interactions," and "parasocial engagement." Next, we manually screened reference lists, relevant journals, and conference proceedings (Jeyaraj & Dwivedi, 2020). We then reviewed our selected studies' reference lists. Finally, we approached a number of authors to request access to some unpublished studies. Based on our literature search, we included 1430 studies for screening. In this phase, we excluded 1269 studies, leaving 161 full-text studies to be assessed for eligibility.

We selected the relevant studies based on the following inclusion criteria: (1) addresses PSRs with SMIs; (2) includes quantitative empirical results and requisite information for performing meta-analytic calculations; and (3) is based on independent datasets to ensure that results based on the same data would be included only once. Consequently, 23 studies were removed because they did not address PSRs with SMIs, and 15 studies were excluded for presenting qualitative findings, being review articles, or not providing information for effect size integration.

After we excluded irrelevant studies, our final dataset included 123 items that referred to 117 articles published between 2014 and 2022 (listed in Web Appendix A). For this meta-analysis, we specified 722 effect sizes for the total combined samples ($N = 47,647$).

The data coding process was based on Rust and Cooil (1994). The key variables and their aliases are defined in Web Appendix C. The moderators were coded according to the criteria presented in Table 2. With the exception of the publication year as a continuous variable, the moderators were independently dummy-coded by two experienced researchers. The inter-rater agreement rate of > 95% indicated sufficient reliability; any disagreements were resolved through further discussion.

We employed a number of procedures to assess and reduce any potential effects of publication bias. First, we included both published and unpublished studies that reported significant and insignificant positive and negative correlations. Second, we calculated a failsafe N (FSN) for the relevant relationships to address the file-drawer problem (Rosenthal, 1979). Third, we performed Egger's test^a (Sterne & Egger, 2005) to address any potential asymmetry of funnel plots. Finally, we tested the moderating effect of the publication status of the study report (i.e., published vs. unpublished).

4.6.2. Effect size integration

A correlation coefficient was selected to represent the effect size. If a

^a Egger's test was performed only for relationships with 10 or more available correlations.

Table 2
Moderator coding guidelines.

Variable	Moderator description	Coding
Level 1 moderators		
Cognitive processing	Dummy-coded according to whether the effect size includes cognitive processing	0 = no (n = 39) 1 = yes (n = 32)
Affection	Dummy-coded according to whether the effect size includes affection	0 = no (n = 40) 1 = yes (n = 31)
Behavior	Dummy-coded according to whether the effect size includes behavior	0 = no (n = 63) 1 = yes (n = 8)
Level 2 moderators		
Product involvement	Indicates whether the study examined low-involvement products (e.g., daily-use products or groceries) or high-involvement products (e.g., electronics or health-care services)	0 = low (n = 30) 1 = high (n = 7)
Purchase frequency	Indicates whether the study addressed products purchased frequently (i.e., less or more than once in three years; e.g., airline services or groceries) or infrequently (e.g., electronics; Floyd et al., 2014)	0 = frequent (n = 20) 1 = infrequent (n = 16)
Content type	Indicates whether the study examined picture or video posts	0 = picture (n = 17) 1 = video (n = 10)
Gender	Indicates whether the study used mixed or female samples	0 = mixed (n = 58) 1 = female (n = 11)
Sample source	Indicates whether the study used a non-student or student sample	0 = non-student (n = 59) 1 = student (n = 10)
Method	Indicates whether the study was survey-based or experimental	0 = survey (n = 53) 1 = experiment (n = 13)
Publication status	Indicates whether the study was published or unpublished	0 = published (n = 61) 1 = unpublished (n = 8)
Year	Publication year as a continuous variable	

Note: n represents the number of effect sizes coded for each moderator; not all studies could be coded for all moderator variables.

study did not directly report this information, we converted other statistics into correlations, as described by Wilson (2023) and Peterson and Brown (2005). The random-effects method (Hunter & Schmidt, 2004; Jeyaraj & Dwivedi, 2020) was employed for effect size integration; we corrected effect sizes for reliability by dividing each correlation by the square root of the product of the reliabilities of the independent and dependent variables. When this information was unavailable, we used the average reliability of that construct. When multiple correlations were reported for a particular relationship, we used the average correlation. Using sample-size weights, we then corrected the effect sizes for sampling error by averaging them. Comprehensive Meta-Analysis 3 software was used for this phase.

To determine the distribution of the effect sizes, we calculated 95% confidence intervals for each relationship to confirm that the average mean true score fell within the interval (Jiang et al., 2012). We also checked the effect size distribution using the Q-statistics test of homogeneity. According to Hunter and Schmidt (2004), a significant Q-test result indicates substantial variance in the effect size distribution. To assess the distribution of the effect size variance, we calculated the I^2 values. A value greater than 75% indicated substantial heterogeneity in effect sizes (Higgins & Thompson, 2002). To address the file-drawer problem, we calculated the FSNs. According to Rosenthal (1979), results are robust when FSNs are greater than $5 \cdot k + 10$, where k represents the number of correlations. To evaluate funnel plot asymmetry, we also performed Egger’s test. Significant t-values indicated funnel plot asymmetry (Sterne & Egger, 2005). The results of power test indicate sufficient power of the statistical analyses (Muncer, 2003). Table 3 shows the descriptive statistics for all of the examined relationships.

4.6.3. Structural equation modeling (SEM)

We used SEM to test the hypotheses related to the direct and indirect effects of our proposed comprehensive framework. For the purposes of SEM, we utilized SPSS AMOS 28 to compile a correlation matrix, which we then used as an input (see Table 4). All constructs were measured using single indicators. Error variances were set at zero, as they had

already been considered for effect size integration. Following Viswesvaran and Ones (1995) and Mishra et al. (2023), we used the harmonic mean of all samples in the correlation matrix ($n = 3129$) to represent the sample size, as this yields more conservative results than the mean effect size. Again, following Viswesvaran and Ones (1995), we used the maximum likelihood estimation method.

We also calculated a separate model to assess the mediating effects of the dimensions of parasocial engagement on purchase intention, excluding brand trust and brand attitude, as we were interested specifically in the mediating effects of parasocial engagement.

4.6.4. Moderator analysis

Following Hox (2010), we employed a multilevel approach to test the hypotheses related to the moderating effects, as the included effect sizes were likely to be nested if different samples reported multiple measurements. Our random-effects model differentiated the effect size level (Level 1) from the study level (Level 2). Following Hox (2010), we dummy-coded the dimensions of parasocial engagement for inclusion in Level 1. In the following equations, ES_{ij}^* corresponds to the reliability-adjusted correlations describing the relationship between engagement and purchase intention; r_{ij} is the residual error at Level 1; and u_{0j} is the residual error term at Level 2. Using HLM software, the reliability-adjusted correlations were used as dependent variables and regressed on the moderators as follows.^b

Level 1: $ES_{ij} = \beta_{0j} + \beta_{1j}^* (\text{cognitive processing}_{ij}) + \beta_{2j}^* (\text{affection}_{ij}) + \beta_{3j}^* (\text{behavior}_{ij}) + r_{ij}$ and.

Level 2: $\beta_{0j} = \gamma_{00} + \gamma_{01}^* (\text{product involvement}_j) + \gamma_{02}^* (\text{purchase frequency}_j) + \gamma_{03}^* (\text{content type}_j) + \gamma_{04}^* (\text{gender}) + \gamma_{05}^* (\text{method}) + \gamma_{06}^* (\text{sample source}_j) + \gamma_{07}^* (\text{publication status}_j) + \gamma_{08}^* (\text{year}_j) + u_{0j}$.

^b We used the mean imputation method of replacing missing values with variable means to test the full model with all possible variables.

Table 3
Descriptive statistics.

Variable 1	Variable 2	Number of raw effects	Total N	Sample weighted reliability adjusted <i>r</i>	CI _{low}	CI _{high}	Q	I ²	FSN	Egger's test (t-value)	Power
Trustworthiness	Purchase intention	41	15,839	0.519 **	0.441	0.590	1740	97.701	23,675	0.286	> 0.999
Expertise	Purchase intention	31	12,060	0.488 **	0.431	0.542	481	93.762	15,942	0.458	> 0.999
Congruence	Purchase intention	28	12,043	0.444 **	0.378	0.505	514 **	94.750	8335	0.323	> 0.999
Social attractiveness	Purchase intention	9	3598	0.529 **	0.346	0.674	378 **	97.885	2788	-	> 0.999
Brand attitude	Purchase intention	23	9664	0.685 **	0.604	0.751	623 **	97.271	19,634	0.371	> 0.999
Behavior	Purchase intention	29	13,616	0.563 **	0.475	0.639	1380 **	97.970	29,943	0.832	> 0.999
Physical attractiveness	Purchase intention	26	10,274	0.439 **	0.371	0.501	505 **	95.049	6672	0.749	> 0.999
Cognitive processing	Purchase intention	28	11,877	0.585 **	0.520	0.643	595 **	95.459	21,803	0.810	> 0.999
Affection	Purchase intention	7	2795	0.387 **	0.208	0.540	153 **	96.085	722	-	> 0.999
Brand trust	Purchase intention	15	5411	0.591 **	0.527	0.647	142 **	92.300	6116	1.128	> 0.999
Trustworthiness	Brand attitude	21	8282	0.582 **	0.498	0.656	571 **	96.498	8025	0.023	> 0.999
Expertise	Brand attitude	15	6052	0.515 **	0.420	0.599	348 **	95.977	8729	2.713	> 0.999
Congruence	Brand attitude	8	4048	0.367 **	0.259	0.466	66 **	89.318	713	-	> 0.999
Social attractiveness	Brand attitude	6	1602	0.371 **	0.230	0.496	49 **	89.765	346	-	> 0.999
Behavior	Brand attitude	11	4934	0.603 **	0.478	0.703	436 **	97.706	7944	1.836	> 0.999
Physical attractiveness	Brand attitude	12	5470	0.452 **	0.364	0.532	210 **	94.767	4726	0.322	> 0.999
Cognitive processing	Brand attitude	9	3114	0.488 **	0.294	0.644	339 **	97.641	1845	-	> 0.999
Affection	Brand attitude	5	1141	0.464 **	0.277	0.617	63 **	93.650	460	-	> 0.999
Brand trust	Brand attitude	7	2276	0.568 **	0.267	0.768	273 **	98.536	5578	-	> 0.999
Trustworthiness	Brand trust	10	4154	0.601 **	0.473	0.703	301 **	97.008	5257	2.780	> 0.999
Expertise	Brand trust	6	2815	0.450 **	0.197	0.647	268 **	98.136	1068	-	> 0.999
Congruence	Brand trust	5	3046	0.424 *	0.168	0.627	246 **	98.376	699	-	> 0.999
Social attractiveness	Brand trust	3	1194	0.247 **	0.183	0.309	4	42.961	73	-	> 0.999
Physical attractiveness	Brand trust	4	1442	0.419 **	0.180	0.611	125 **	97.593	482	-	> 0.999
Affection	Brand trust	3	1154	0.616 **	0.390	0.772	54 **	96.327	470	-	> 0.999
Behavior	Brand trust	8	3033	0.379 **	0.273	0.476	81 **	91.356	1028	-	> 0.999
Cognitive processing	Brand trust	5	1681	0.466 **	0.192	0.673	163 **	97.543	599	-	> 0.999
Trustworthiness	Cognitive processing	22	7294	0.598 **	0.479	0.696	1034 **	97.969	7400	0.330	> 0.999
Expertise	Cognitive processing	12	4231	0.466 **	0.351	0.523	142 **	92.241	2843	1.254	> 0.999
Congruence	Cognitive processing	12	4695	0.679 **	0.558	0.773	492 **	97.763	9328	0.063	> 0.999

(continued on next page)

Table 3 (continued)

Variable 1	Variable 2	Number of raw effects	Total N	Sample weighted reliability adjusted r	CI _{low}	CI _{high}	Q	I ²	FSN	Egger's test (t-value)	Power
Social attractiveness	Cognitive processing	4	1340	0.395 **	0.260	0.515	8 *	74.783	95	-	> 0.999
Physical attractiveness	Cognitive processing	10	3438	0.441 **	0.298	0.564	244 **	96.308	2270	0.624	> 0.999
Affection	Cognitive processing	6	1610	0.582 **	0.289	0.776	149 **	97.980	1915	-	> 0.999
Behavior	Cognitive processing	12	4645	0.461 **	0.321	0.581	324 **	96.609	3248	0.586	> 0.999
Trustworthiness	Behavior	21	9190	0.550 **	0.473	0.646	1025 **	98.049	9891	2.780	> 0.999
Expertise	Behavior	16	7790	0.512 **	0.393	0.615	613 **	97.553	9416	1.026	> 0.999
Congruence	Behavior	16	7050	0.473 **	0.331	0.594	779 **	98.074	7478	0.659	> 0.999
Social attractiveness	Behavior	10	3907	0.647 **	0.575	0.710	108 **	91.644	5488	1.288	> 0.999
Physical attractiveness	Behavior	20	8871	0.467 **	0.351	0.568	843 **	97.747	2306	1.458	> 0.999
Affection	Behavior	6	1437	0.645 **	0.457	0.777	108 **	96.307	1078	-	> 0.999
Trustworthiness	Affection	5	2332	0.442 *	0.086	0.698	320 **	98748	676	-	> 0.999
Expertise	Affection	5	2237	0.405 **	0.021	0.685	390 **	98.975	585	-	> 0.999
Congruence	Affection	6	3364	0.448 **	0.300	0.575	103 **	95.165	1006	-	> 0.999
Social attractiveness	Affection	3	927	0.443 *	0.169	0.653	43 **	95.388	162	-	> 0.999
Physical attractiveness	Affection	4	1855	0.455 *	0.178	0.665	139 **	97.837	486	-	> 0.999
Expertise	Trustworthiness	28	10,307	0.677 **	0.618	0.727	659 **	96.205	19,877	0.443	> 0.999
Congruence	Trustworthiness	18	7637	0.476 **	0.387	0.555	340 **	94.997	8473	2.176	> 0.999
Social attractiveness	Trustworthiness	9	4511	0.629 **	0.492	0.736	268 **	97.014	4076	0.508	> 0.999
Physical attractiveness	Trustworthiness	24	11,427	0.595 **	0.494	0.679	1266 **	98.183	12,512	2.595	> 0.999
Congruence	Expertise	18	6071	0.374 **	0.288	0.453	249 **	93.170	4406	0.381	> 0.999
Social attractiveness	Expertise	6	1955	0.429 **	0.392	0.464	4	0	607	-	> 0.999
Physical attractiveness	Expertise	25	10,514	0.536 **	0.453	0.610	807 **	98.026	14,684	0.762	> 0.999
Social attractiveness	Congruence	7	3325	0.380 **	0.121	0.590	401 **	98.505	1020	-	> 0.999
Physical attractiveness	Congruence	15	7171	0.387 **	0.269	0.494	377 **	96.284	3784	1.074	> 0.999
Physical attractiveness	Social attractiveness	7	3350	0.488 **	0.280	0.652	315 **	98.095	1589	-	> 0.999

Note: ** $p < 0.01$; * $p < 0.05$

Table 4
Correlation matrix.

	PI	BA	BT	CP	ACT	EXP	TRW	SA	PA	AFFECT	CONG
PI	1										
BA	0.685	1									
BT	0.59	0.568	1								
CP	0.585	0.488	0.466	1							
ACT	0.563	0.603	0.379	0.461	1						
EXP	0.488	0.515	0.45	0.466	0.512	1					
TRW	0.519	0.582	0.601	0.598	0.55	0.667	1				
SA	0.529	0.371	0.247	0.395	0.647	0.429	0.629	1			
PA	0.439	0.452	0.419	0.441	0.467	0.536	0.595	0.488	1		
AFFECT	0.387	0.464	0.616	0.582	0.645	0.405	0.442	0.443	0.455	1	
CONG	0.444	0.367	0.424	0.679	0.473	0.374	0.476	0.38	0.387	0.448	1

Note: PI = purchase intention; BA = brand attitude; BT = brand trust; CP = cognitive processing; ACT = activation; EXP = expertise; TRW= trustworthiness; SA = social attractiveness; PA = physical attractiveness; AFFECT = affection; CONG = Congruence

Table 5
Structural equation modeling results.

Relationship	β	R ²		
Brand attitude → Purchase intention	0.201 *	0.801		
Brand trust → Purchase intention	0.681 *			
Behavior → Purchase intention	0.271 *			
Affection → Purchase intention	-0.622 *			
Cognitive processing → Purchase intention	0.549 *			
Expertise → Purchase intention	0.118 *			
Trustworthiness → Purchase intention	-0.633 *			
Social attractiveness → Purchase intention	0.506 *			
Physical attractiveness → Purchase intention	0.049 *			
Congruence → Purchase intention	-0.132 *			
Brand trust → Brand attitude	0.385 *		0.561	
Behavior (H7c) → Brand attitude	0.531 *			
Affection (H7b) → Brand attitude	-0.230 *			
Cognitive processing (H7a) → Brand attitude	0.238 *			
Expertise → Brand attitude	0.070 *			
Trustworthiness → Brand attitude	0.067 *			
Social attractiveness → Brand attitude	-0.133 *			
Physical attractiveness → Brand attitude	0.079 *			
Congruence → Brand attitude	-0.151 *			
Behavior (H6c) → Brand trust	-0.155 *	0.611		
Affection (H6b) → Brand trust	0.606 *			
Cognitive processing (H6a) → Brand trust	-0.195 *			
Trustworthiness → Brand trust	0.658 *			
Social attractiveness → Brand trust	-0.321 *			
Congruence → Brand trust	0.167 *			
Affection → Behavior	0.399 *		0.617	
Cognitive processing → Behavior	-0.113 *			
Expertise (H1c) → Behavior	0.182 *			
Social attractiveness (H3c) → Behavior	0.376 *			
Congruence (H5c) → Behavior	0.160 *			
Cognitive processing → Affection	0.436 *			0.422
Expertise (H1b) → Affection	0.099 *			
Trustworthiness (H2b) → Affection	-0.144 *			
Social attractiveness (H3b) → Affection	0.222 *			
Physical attractiveness (H4b) → Affection	0.175 *			
Congruence (H5b) → Affection	0.032 *	0.563		
Expertise (H1a) → Cognitive processing	0.053 *			
Trustworthiness (H2a) → Cognitive processing	0.322 *			
Social attractiveness (H3a) → Cognitive processing	-0.045 *			
Physical attractiveness (H4a) → Cognitive processing	0.048 *			
Congruence (H5a) → Cognitive processing	0.505 *			

Note: * $p < 0.05$ (two-tailed); model fit: $\chi^2_{df} = 2.3(4)$; Comparative fit index (CFI) = 1.000; Goodness-of-fit index (GFI) = 1.000; RMR = 0.002; H = hypothesis. The model presented in Fig. 1 was revised; insignificant relationships were excluded (between expertise and brand trust, physical attractiveness and brand trust, trustworthiness and behavior, and physical attractiveness and behavior).

Table 6
Direct, indirect, and total effects.

Relationship	Direct	Indirect	Total	Relative importance (%)
Cognitive processing → purchase intention	0.465 *	-0.073 *	0.392 *	13
Affection → purchase intention	-0.209 *	0.122 *	-0.087 *	36
Behavior → purchase intention	0.306 *	-	0.306 *	-
Expertise → purchase intention (H8a)	0.146 *	0.068 *	0.214 *	32
Trustworthiness → purchase intention (H8b)	-0.094 *	0.139 *	0.045 *	60
Social attractiveness → purchase intention (H8c)	0.216 *	0.078 *	0.294 *	26
Physical attractiveness → purchase intention (H8d)	0.075 *	0.004 *	0.079 *	5
Congruence → purchase intention (H8e)	-0.044 *	0.244 *	0.200 *	85

Note: * $p < 0.05$ (two-tailed); relative importance was calculated using the formula proposed by Alwin and Hauser (1975)

4.7. Results

4.7.1. Descriptive statistics

Table 3 presents the descriptive statistics for all the examined relationships. All the averaged effect sizes were significant ($p < 0.05$). The calculated effect sizes support the assumptions that underpin our conceptual framework; in particular, SMI characteristics were identified as significant triggers for all dimensions of parasocial engagement. In that regard, cognitive processing and behavior seemed stronger than affection as predictors of purchase intention and brand attitude, while affection was a stronger predictor of brand trust.

We also calculated the effects of SMI characteristics on brand associations and purchase intention. The significant effect sizes indicated that we could proceed to test the mediating effects of the dimensions of parasocial engagement. The Q-tests of homogeneity and I^2 statistics indicated data heterogeneity and the need for moderator analysis. The calculated FSNs confirmed robustness against publication bias for most relationships, as did Egger’s test results, indicating that publication bias was unlikely.

4.7.2. SEM results

As the model fit was good (see Table 5), our conceptual model can be said to perform well.^c The model explained 80.1% of the variances in purchase intention; 56.1%, in brand trust; 61.1%, in brand attitude; 61.7%, in behavior; 42.2%, in affection; and 56.3%, in cognitive processing.

4.7.2.1. Determinants of parasocial engagement. The SEM results (see Table 5) confirm the strong effects of SMI trustworthiness ($\beta = 0.322, p < 0.05$) and congruence ($\beta = 0.505, p < 0.05$) on cognitive processing. The effects of SMI expertise ($\beta = 0.053, p < 0.05$) and SMI physical attractiveness ($\beta = 0.048, p < 0.05$) on cognitive processing were also significant but relatively weak. Interestingly, SMI social attractiveness

^c In our conceptual framework, parasocial engagement is addressed as a multidimensional construct. The outcomes of the effect size integration (Table 3) strongly supported the use of multidimensional conceptualization, as the effect sizes differed significantly across the dimensions. Acknowledging the alternative behavioral and psychological conceptualizations, we also performed scanning electron microscopy analyses for these models. The findings are reported in Web Appendix G.

Table 7
Results of moderator analysis.

Moderator	Coefficient	p-value
Level 1		
Affection	-0.210	0.010
Cognitive processing	0.210	0.009
Behavior	0.168	0.034
Level 2		
Product involvement (low/high)	-0.229	0.014
Purchase frequency (routine/non-routine)	-0.384	0.045
Content type (picture vs. video)	0.475	0.014
Gender (mixed/female sample)	-0.209	0.098
Sample source (non-student/student)	-0.197	0.088
Method (survey/experiment)	0.115	0.180
Publication status (published/unpublished)	-0.633	0.012
Year	0.002	0.871

($\beta = -0.045, p < 0.05$) had a slight negative impact on cognitive processing. As this form of attractiveness refers to SMI likability, we contend that it mainly influences affective engagement (Sokolova & Kefi, 2020). Accordingly, H1a, H2a, H4a, and H5a are accepted, but H3a is rejected.

Our results indicate the strong positive effects of SMI expertise ($\beta = 0.099, p < 0.05$), SMI physical attractiveness ($\beta = 0.175, p < 0.05$), and SMI social attractiveness ($\beta = 0.222, p < 0.05$) on affection. The effect of congruence on affection was weak ($\beta = 0.032, p < 0.05$), and the impact of SMI trustworthiness on affection was negative ($\beta = -0.144, p < 0.05$). We argue that SMI trustworthiness mainly affects the cognitive component of parasocial engagement, as prior research linked it to persuasion (Petty & Cacioppo, 1986). Accordingly, our findings confirm H1b, H3b, H4b, and H5b, and reject H2b.

Our findings further confirm the positive effects of SMI expertise ($\beta = 0.182, p < 0.05$), SMI social attractiveness ($\beta = 0.376, p < 0.05$), and congruence ($\beta = 0.160, p < 0.05$) on behavior. However, the effects of SMI trustworthiness and SMI physical attractiveness on behavior were insignificant. These insignificant direct effects might be explained by the indirect effects of the cognitive and affective dimensions. Accordingly, H1c, H3c, and H5c are accepted, while H2c and H4c are rejected.

These results demonstrate that key SMI characteristics (i.e., expertise, trustworthiness, social attractiveness, physical attractiveness, and congruence) are significant triggers for parasocial engagement. However, their importance and effect direction vary across the different dimensions of parasocial engagement, confirming that this is a multidimensional construct.

4.7.2.2. Outcomes of parasocial engagement. While cognitive processing ($\beta = -0.195, p < 0.05$) and behavior ($\beta = -0.155, p < 0.05$) negatively impacted brand trust, affection ($\beta = 0.606, p < 0.05$) positively impacted it. Accordingly, H6a and H6c are rejected, while H6b is accepted. However, our findings indicate the positive effects of cognitive processing ($\beta = 0.238, p < 0.05$) and behavior ($\beta = 0.531, p < 0.05$) on brand attitude, which means that H7a and H7c are accepted. Interestingly, affection had a negative impact on brand attitude ($\beta = -0.230, p < 0.05$), thus rejecting H7b. Our review of the literature revealed no theoretical or empirical explanation for these negative effects (H6a, H6c, and H7b), and our effect size results (see Table 3) indicate a strong and positive correlation between the constructs. According to MacKinnon et al. (2000), an effect is typically suppressed when the mediator explains part of the relationship. We contend that these unexpected negative effects are due to this suppression and the potential multicollinearity issues in our data.

4.7.2.3. Mediating effects. Because we were interested in the mediating effects of the dimensions of parasocial engagement on purchase intention, the relative importance of indirect effects was tested using a model that excluded the mediating effects of brand attitude and brand trust.

Table 8
Profile of the sample.

	Gender	Age	Interview duration (min)
1	Female	18	20
2	Female	23	22
3	Female	24	15
4	Female	24	22
5	Female	24	21
6	Female	25	23
7	Female	25	37
8	Female	26	17
9	Female	26	10
10	Female	27	22
11	Female	31	16
12	Female	31	26
13	Female	32	47
14	Female	33	15
15	Male	18	25
16	Male	24	20
17	Male	24	21
18	Male	25	26
19	Male	27	29
20	Male	30	21
21	Male	31	32
22	Male	32	21
23	Male	32	24
24	Male	33	29
25	Male	34	20

The model fit was good for this alternative ($\chi^2_{df} = 1.9(2)$; CFI = 1.000; GFI = 1.000; RMR = 0.001). Our results (see Table 6) indicate strong indirect effects, especially of SMI trustworthiness (relative importance = 60%) and congruence (85%). The mediating effects of parasocial engagement also explain the significant proportions of SMI expertise (30%) and SMI social attractiveness (26%). In the case of SMI physical attractiveness, the relative importance of indirect effects was only 5%. Accordingly, H8a, H8b, H8c, and H8e are accepted, and H8d is rejected. In short, the mediating effects partially explain the impact of SMI expertise, SMI trustworthiness, SMI social attractiveness, and congruence on purchase intention. SMI physical attractiveness directly influences purchase intention, but its overall impact is weak.

4.7.3. Results of moderator analysis

Before we performed the moderator analysis, we tested for the potential multicollinearity of the Level 1 and Level 2 moderators (see Web Appendices E–F). The highest reported variance inflation factors were 1.109 for the Level 1 variables and 8.571 for the Level 2 variables (by publication year). Because the values for the publication year can be critical, we ran an additional model that excluded this control variable, but its removal did not affect the results, indicating that multicollinearity was not a significant issue. The results of the moderator analysis are presented in Table 7.

4.7.3.1. Product characteristics. As predicted, the relationship between parasocial engagement and purchase intention was stronger for low-involvement products ($\beta = -0.229$, $p < 0.05$). In other words, parasocial engagement is a stronger predictor of purchase intention in low-involvement product categories, confirming H9.

Our comparison of the effects of parasocial engagement on purchase intention with respect to frequently and infrequently purchased products showed that those effects are stronger for frequently purchased products ($\beta = -0.384$, $p < 0.05$), confirming H10. The more routine the product purchase is, the stronger the impact of parasocial engagement on purchase intention is.

4.7.3.2. Content type. In light of the higher engagement rate of video content, we expected that video posts would have a stronger impact on the relationship between parasocial engagement and purchase intention ($\beta = 0.0475$, $p < 0.05$). Our findings confirmed this, supporting H11.

4.7.3.3. Controls. We found that mixed samples produced stronger effects ($\beta = -0.209$, $p = 0.098$), that non-student samples may produce stronger effects ($\beta = -0.197$, $p = 0.088$), and that the effect sizes were significantly stronger in the case of the published studies ($\beta = -0.633$, $p < 0.05$). However, the study method and the publication year yielded no significant results.

5. Study 2: exploratory qualitative study

5.1. Overview

The objective of this study was to further explore the relationship between parasocial engagement and purchase intention. Consequently, we conducted a qualitative interview study to deepen our understanding of the novel findings from Study 1 and identify additional factors influencing this relationship. Based on the results of Study 2, we developed future research propositions.

5.2. Method

Twenty-five semi-structured theme interviews were conducted with consumers with experience of purchasing products promoted by SMIs. The objective was for the participants to reflect on their own experiences and express their own viewpoints. Thus, the interviews followed a semi-structured guide with three sections.

The first section focused on purchase intentions driven by SMIs at a general level. The interviewees were asked to describe the factors behind products purchased due to SMI promotion. The second section investigated the influence of parasocial engagement on purchases across different product categories, aiming to capture their views across various categories. In the third section, the interviewees were asked to evaluate the effectiveness of different types of social media content and to reflect on their experiences with influencer-produced content.

Purposeful criterion sampling (Patton, 2002, pp. 40–46) was used to recruit interviewees. The interviewees (Table 8) were young adults (18 to 35 years old), as this age group represents active social media users. In terms of gender, 14 were women and 11 men. The interviews were conducted in Finland in April and May 2024. All of them were audio-recorded, transcribed into text files, and translated from Finnish to English. The average duration of the interviews was approximately 23 min. The last interviews did not provide novel insights, indicating saturation of data (Namey et al., 2016).

We followed the content analysis protocol presented by Miles and Huberman (1994), which had the following three stages: data reduction, data display, and conclusion drawing. Two independent researchers read and coded the responses according to the main themes.

5.3. Results

In this section, we present the insights from the interviews. The interview findings provide a deeper understanding of the results of Study 2 but also raise new potential moderators explaining the effects of parasocial engagement on purchase intention. Consequently, three research propositions were formed based on the interview data.

5.3.1. Parasocial engagement and product characteristics

Supporting the findings of Study 1, the interviewees indicated that if the product was important to them and if purchase-related decision-making required considerable effort from them, engagement with SMIs would not play an important role in their decision-making. They noted that their high-involvement decisions were based on sources other than SMI recommendations, as these were perceived as biased.

However, for the low-involvement and frequently purchased product categories, some respondents noted that they might be interested in testing products promoted by engaging SMIs. The interviewees stated that their perceived risk of these purchases was lower (“I might test the

product if it is not expensive. In that case, the risk to test a new product is not that significant”) and that SMIs can provide suggestions that offer quick solutions to satisfy consumers’ needs (“Sometimes, I buy products based on recommendations of SMIs I’m following. These are mostly impulsive purchases, not requiring complex decision-making”).

Interestingly, some interviewees said they gained shopping inspiration from SMIs if the SMIs promoted products with which they were not previously familiar. They considered SMI content important, especially in the discovery stage of the customer journey. However, one respondent had a contrasting perspective by stating that he might buy products promoted by engaging SMIs if he was previously aware of the product. For this interviewee, SMIs represented confirmers of their decision. Based on these insights, we form the following proposition:

Proposition 1. Parasocial engagement might drive purchase intention more effectively for products with which consumers were not previously familiar.

5.3.2. Parasocial engagement and content types

Many of the interviewees emphasized the importance of product–SMI fit in the effectiveness of SMI marketing. They said this alignment is essential for SMIs’ maintenance of their expertise and credibility with their followers. They added that it does not matter how engaging the SMI is if the content is not linked to their expertise. For example, one interviewee noted that SMIs’ promotion of technological products would be more effective if the SMI were technically involved: “Content should be related to the SMI’s expertise. Otherwise, it is not credible. I never purchase products recommended by those SMIs without specific expertise.”

Conversely, the interviewees disclosed that if an SMI promotes unrelated products, their followers view this content with skepticism. Consequently, the following proposition is formed:

Proposition 2. The impact of parasocial engagement on purchase intention may vary depending on the product–SMI fit. Thus, the expertise of SMIs regarding their promoted products should be considered.

In addition, the interviewees highlighted that products promoted by SMIs should closely match the interviewees’ personal needs. If the commercial content aligns with their specific needs, their motivation to engage with the promotion is higher (“The content should match my needs. When [the] content fits [...] my preferences, it is more compelling and relevant”). Conversely, if the SMI-promoted products do not align with their needs, their motivation to engage is lower (“Commercial content should showcase products that I would use in my everyday life. Then, I’m more likely purchasing it”).

Consequently, we form the following proposition:

Proposition 3. The motivation to consume SMI-generated content plays an important role in turning parasocial engagement into purchase.

6. Discussion

The current study was motivated by the growing interest in SMI marketing and the perceived need to integrate the conceptually and empirically diverse domain of parasocial engagement research (Bergkvist & Zhou, 2016; Taillon et al., 2020). To that end, we performed a comprehensive meta-analytical review that focused on SMIs, and an exploratory qualitative study. The review synthesized 117 studies that involved 47,647 respondents, and we developed and tested a comprehensive framework to explore three dimensions of parasocial engagement (i.e., cognitive processing, affection, and behavior), along with predictors and outcomes. More specifically, rooted in the conceptual frameworks of Han and Balabanis (2024) and Vrontis et al. (2021), we tested the impact of SMI characteristics (i.e., expertise, trustworthiness, social attractiveness, physical attractiveness, and congruence) on parasocial engagement and the effects of engagement on brand

associations (i.e., brand trust and brand attitude) and purchase intention. We also clarified how parasocial engagement influences purchase intention by testing the moderating effects of product characteristics, platform characteristics, and control variables. Study 2 provides in-depth insights into the novel findings of Study 1. Based on 25 semi-structured theme interviews, we found support for the findings of Study 1 but also several new insights regarding the potential moderating effects of the relationship between parasocial engagement and purchase intention, thus contributing to the moderators identified in previous research (Vrontis et al., 2021). More specifically, our findings indicate that this path might be dependent on product novelty, product–SMI fit, and consumer motivation to consume SMI-generated content. Based on these findings, we developed three research propositions that offer interesting future research avenues.

6.1. Theoretical contributions and implications

This paper makes several valuable contributions to the literature. First, it bridges a gap in the existing body of research by developing an integrated conceptual framework for exploring parasocial engagement (Bergkvist & Zhou, 2016; Taillon et al., 2020). This paper clarifies how parasocial engagement can be defined and assessed. Unlike studies of parasocial engagement that adopt a behavioral perspective (Hughes et al., 2019), the findings of the current study show that parasocial engagement is a multidimensional (i.e., cognitive, affective, and behavioral) construct. Consequently, our results support the multidimensional conceptualization of Hollebeek et al. (2011a). While behavioral engagement in social media contexts can readily be measured in terms of likes, comments, and shares, it seems clear that previous studies failed to fully account for the cognitive and affective components of engagement.

Second, the current study responds to the widespread calls for empirical investigation of the drivers and consequences of parasocial engagement (Bergkvist & Zhou, 2016; Leung et al., 2022b; Li et al., 2021; Liadeli et al., 2023). Previous studies have shown mixed effects of SMI characteristics on parasocial engagement dimensions, creating a need for a more comprehensive understanding. For instance, some research has highlighted the positive impact of SMI expertise on parasocial engagement (Aw et al., 2022), while others have found no significant effect (Yuan & Lou, 2020). Similarly, the effects of trustworthiness and attractiveness on parasocial engagement have also been reported with mixed results across studies (Bi & Zhang, 2022; Sakib et al., 2020; Sokolova & Kefi, 2020). By empirically testing the determinants and outcomes of parasocial engagement presented in the conceptual frameworks of prior studies (Han & Banis, 2024; Kanaveedu & Kalapurackal, 2022; Vrontis et al., 2021), we clarified how SMI characteristics (i.e., expertise, trustworthiness, social attractiveness, physical attractiveness, and congruence) influence parasocial engagement and how the three dimensions of parasocial engagement diversely influence brand associations and purchase intention.

Third, we responded to calls to clarify the varied effects of parasocial engagement on purchase intention across product characteristics and content types (Bergkvist & Zhou, 2016; Chen et al., 2022; Hughes et al., 2019; Leung et al., 2022b). Previous studies have produced mixed results regarding the relationship between parasocial engagement and purchase intentions, with some highlighting positive effects (Hwang & Zhang, 2018; Sokolova & Kefi, 2020) and others reporting negative impacts (Kim, 2020, 2022). Following the logic of previous studies (Aw & Agnihotri, 2023; Vrontis et al., 2021), we tested the moderating effects of product involvement, purchase frequency, content type, and control variables. The results of Studies 1 and 2 clarify the mixed findings presented in previous studies (Hwang & Zhang, 2018; Kim, 2020, 2022; Sokolova & Kefi, 2020) and indicate that the outcomes of parasocial engagement may differ across contexts. For example, the impact of parasocial engagement on purchase intention was stronger for low-involvement and frequently purchased product categories. When a

purchase requires complex decision-making, consumers seem to favor information sources that are more credible than SMIs. Moreover, we found that these effects were stronger for video content, which generates higher levels of engagement than still images. In addition, the results of Study 2 indicate that this relationship may depend on factors such as product familiarity, product–SMI fit, and motivation to consume SMI-generated content. These findings suggest that future research should examine the role of these moderators in explaining the effects of parasocial engagement on purchase intentions. By identifying these potential moderators, our findings contribute to our conceptual framework and extend previous research (Han & Balabanis, 2024; Kanaveedu & Kalapurackal, 2022; Vrontis et al., 2021).

6.2. Implications for practice

This research has several practical implications for managers when selecting SMIs for marketing purposes. First, our account of how SMI characteristics (i.e., expertise, trustworthiness, social attractiveness, physical attractiveness, and congruence) shape parasocial engagement, brand associations, and purchase intention enables managers to recognize key attributes of SMIs and use them to choose SMIs who have the greatest potential to promote their brands and products most effectively. Our findings highlight the importance of product–SMI fit: content and promoted products should be related to the SMI's expertise. Therefore, we encourage companies to focus on SMIs with specific expertise in their business field.

Second, we found that parasocial engagement with SMIs offers valuable opportunities to influence brand associations and purchase intention. Therefore, SMI marketing can be used to enhance brand attitude, brand trust and purchase intentions. Our results indicate that the dimensions influence diversely these outcomes. Thus, the effects of each dimension should be considered separately in SMI marketing.

Third, we demonstrated how the impact of parasocial engagement on purchase intention varies across product categories. As parasocial engagement is more effective for low-involvement and frequently purchased products, SMI marketing should be used to promote such products because consumers favor alternative information sources for purchases involving complex decision-making.

Fourth, we tested the respective impacts of video and still-image content. Our findings suggest that video-based parasocial engagement generates higher purchase intention, indicating that SMIs should prioritize video content because it generates stronger reactions. For the same reason, social media platform developers should ensure that video content is foregrounded.

6.3. Limitations and future research direction

As a meta-analysis, Study 1 was necessarily confined to existing data, which meant that we could not integrate all the constructs of the conceptual framework using SEM. Future research should seek to clarify these relationships as the relevant data become available. For example, previous studies have recognized the dual nature of parasocial relationships (Derrick et al., 2008; Baek et al., 2013). Therefore, it is important to consider the negative consequences of parasocial engagement, such as its potential adverse effects on self-esteem and well-being. Also, the consistency of measurements of parasocial engagement across studies must be ascertained in future studies.

As our findings regarding the brand-related outcomes of parasocial engagement are inconsistent in terms of the effect size and SEM potentially due to the data multicollinearity, future studies should use alternative models to address these relationships. Additionally, parasocial engagement has typically been viewed as a one-way relationship, perhaps reflecting the origins of parasocial research in the area of SMI endorsement. As social media channels now allow SMIs to interact with their followers, future research should explore engagement as a two-way relationship that encompasses various forms of interaction.

Study 2 identifies three future research propositions. First, product familiarity might play a role in the relationship between parasocial engagement and purchase intention. Thus, future studies should examine its moderating effects. Second, product–SMI fit potentially affects the influence of parasocial engagement on purchase intention. Subsequent research is needed to clarify this moderating effect. Third, consumer motivation to consume SMI-generated content appears to influence the impact of parasocial engagement on purchase intention. That is, consumers with a higher motivation to consume SMI-generated content might be more likely to purchase products. Future studies should examine how changes in this motivation influence the effects of parasocial engagement on purchase intentions.

Finally, this relatively new field of SMI marketing research is developing rapidly, and new methods are needed to keep up with changing trends. While PSR research currently depends mainly on survey and experimental methods, more qualitative and longitudinal studies may be needed to clarify the nature of these relationships and their formation, for example, in the case of SMI content generated by artificial intelligence.

CRedit authorship contribution statement

Olli Tyrväinen: Writing – review & editing, Writing – original draft, Methodology, Investigation, Conceptualization. **Heikki Karjaluoto:** Writing – review & editing, Writing – original draft, Supervision, Resources.

Declaration of Competing Interest

None.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at [doi:10.1016/j.ijinfomgt.2024.102845](https://doi.org/10.1016/j.ijinfomgt.2024.102845).

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