



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<https://doi.org/10.1057/s41599-023-02512-1>

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The persuasive power of social media influencers in brand credibility and purchase intention

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The use of social media influencer collaboration is growing exponentially. This study explores the persuasive power of influencers on followers' perceived brand credibility and purchase intention by applying the elaboration likelihood model of persuasion. The results show that the informative value of influencers' content, authenticity, and homophily positively affect their parasocial relationships, which in turn, affects followers' purchase intention and evaluation of brand credibility. Followers' persuasion knowledge negatively moderates the relationship between parasocial relationships and followers' perceived brand credibility; it has no moderating effect on the relationship between parasocial relationships and followers' purchase intention.

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Introduction

Social media has changed how people obtain information and news dramatically in recent years. As of 2021, the number of social media users worldwide has reached 4.20 billion, with users spending an average of 2h and 25 min daily on these platforms (KEMP, 2021). As traditional ads lose visibility due to the widespread use of ad blockers, marketers are increasingly turning to social media influencers (SMIs) to distribute brand messages. Over 75% of brand marketers expect to allocate a budget to SMI marketing in 2022 (Geyser, 2022). SMIs refer to individuals who are perceived as having social influence because of the number of followers they have (Council, 2018). Lou and Yuan (2019) claim the difference between SMIs and traditional media celebrities is that SMIs are “regular people” who have become digital celebrities through their content and creations on social media. Social media influencers excel in their respective fields and consistently create valuable content on social media to nurture a dedicated and engaged audience. From the perspective of strategic communication, Enke and Borchers (2019) defined SMIs as third-party endorsers. These endorsers have established significant relationships with organizational stakeholders and influence others through the production, distribution, and interaction of their content and personal appearance.

Compared to traditional celebrity endorsement advertising, SMIs are more reliable and robust in influencing consumers' attitudes (Jin et al., 2019). Brands and influencers work together to market their products through influencer marketing. Influencers promote brands' products or services through social media channels, and unlike celebrity endorsements, influencer marketing goes beyond just attaching well-known celebrities to brands. They must maintain loyal followings within communities and be trusted figures. Furthermore, SMIs are usually knowledgeable about the subject of their advertising (Lou and Yuan, 2019). Influencer marketing can have a variety of objectives, e.g., enhancement of brand awareness, increasing product interest, and selling and buying products to help to improve the brand's value and revenue (Enke and Borchers, 2019; Yuan and Lou, 2020).

Academic research on influencer marketing has proliferated in recent years, providing a deeper understanding of how it affects consumers (Tanwar et al., 2022; Hudders et al., 2021; Ye et al., 2021). For example, Researchers have emphasized that influencer characteristics, such as trustworthiness, expertise, or attractiveness, can positively affect consumers' attitudes toward brands (Nafees et al., 2021), trust in brands (Reinikainen et al., 2020), and brand awareness (Lou and Yuan, 2019). A growing number of consumers rely on the content of SMIs in making decisions because of their professional expertise and knowledge. Several studies have also investigated how SMIs' narrative strategies (Zhou et al., 2021), content quality (Onofrei et al., 2022), and content characteristics (Cheung et al., 2022) influence followers' behavioral engagement. Moreover, the parasocial relationship (PSR) has been identified as an appropriate mechanism for effective brand management and advertising using SMIs (Lee and Watkins, 2016; Reinikainen et al., 2020; Wei et al., 2022; Yuan and Lou, 2020).

While companies and businesses are increasingly recognizing the benefits of integrating influencers into their marketing communication strategy, how to select and engage with the right SMIs to make achieve desirable marketing outcomes has been a challenge (Ye et al., 2021; Zhou et al., 2023). Only limited research has worked on what determines the parasocial relationships between online celebrities and their followers and its consequent impacts. Additionally, research on consumers' persuasion knowledge was scarce in influencer marketing (Hudders et al., 2021), dearth of

research has considered users' persuasion knowledge in affecting consumers' responses. Therefore, exploring the role of persuasion knowledge in influencer marketing can lead to further research contributions (Breves et al., 2021). Lastly, few studies have examined how SMIs' personal and content-driven traits impact their followers (Ki et al., 2020). Since influencers possess unique features that differentiate them from traditional celebrities that have not been examined yet. More research is needed in influencer marketing (Tanwar et al., 2022). Hence, the focal objective of this research is to comprehend what causes users to have a parasocial relationship with influencers, and how this relationship affects consumers' perceptions of the recommended brands and purchase intentions.

To fill said gaps, this study identifies followers' PSR with influencers as an essential mechanism that affects followers' responses and focuses on three research questions: 1) what factors shape users' parasocial relationship with online celebrities; 2) how parasocial relationships affect users' purchase intent and perceived brand credibility towards influencers' recommended brands; 3) how persuasive knowledge as a moderating variable affects the relationships between parasocial relationships and followers' perception of brands and purchase intention.

This paper is structured as follows. First, we review the literature and propose hypotheses. Second, we describe the methodology used in this article and the statistical procedure. Third, we highlight the research results. And lastly, we propose a discussion of the results and point out the theoretical and practical implications of the research and its implications and future research directions.

Literature review and hypotheses development

Social media influencers and persuasion. The elaboration likelihood model of persuasion (Petty and Cacioppo, 1986) is a widely used and popular model in consumer research. It has also found application in social media and influencer marketing after the introduction of these new communication channels (Gong, 2020; Teng et al., 2014; Sokolova and Kefi, 2020). ELM assumes that high-involvement subjects will be motivated to go through central cues and persuaded by message arguments (the central route). In comparison, low-involvement subjects will focus on and are more likely to be persuaded by peripheral cues such as source characteristics (the peripheral route) (Cole et al., 1990). SMIs deliver both informative and entertaining content in their specialized areas when communicating with their followers (Lou and Yuan, 2019). By being authentic, followers are able to trust the influencer's postings (Kim and Kim, 2021), which may intensify an influencer's persuasive impact. A sense of homophily may stimulate the pursuit of information, and development of interpersonal relationships with influencers, and sharing of information (Bu et al., 2022). Thus, we take the SMIs' content value, namely, informativeness and entertainment, source characteristics of influencers' authenticity, and homophily, to test the persuasion power of influencers.

Parasocial relationship in influencer marketing. As an essential concept in media studies, PSR can be defined as unilateral relationships formed by a media audience with a media character (Rubin and Step, 2000). Typically, this is a one-sided, non-dialectical, solo-controlled relationship incapable of mutual growth (Horton and Richard Wohl, 1956). It is presumed that PSR serves as a motivating factor in media choices and provides people with a sense of belonging and companionship (Rubin and Step, 2000). SMIs are unable to respond to all comments or requests from their followers and engage in actual discussions due

to the large number of followers and reactions on their social media accounts. This situation resembles the development of PSRs with celebrities. (Sokolova and Kefi, 2020). PSR advance the intimate friendships between digital celebrities and influence their succeeding behaviors (Hwang and Zhang, 2018). Yuan et al. (2016) found that PSRs are positively influenced by the motivation to use social networking sites and celebrity source credibility, which results in positive consumer attitudes and customer equity drivers. Researchers have been exploring the role of PSRs for years, but their focus has recently shifted from traditional celebrities to SMIs (Aw and Chuah, 2021). For example, Chen (2014) demonstrated the PSR applies well to the case of influencers and followers through regular content generation and interaction with followers; SMIs can allow followers to form lasting bonds with them. Digital celebrities create PSR through interactions with audiences, giving the illusion of intimacy while promoting products and brands and conducting public relations. Hence, PSRs can be viewed as social media advertising vehicles that can effectively improve advertising outcomes (Lueck, 2012). Recently, studies have found the importance of SMIs' credibility, users' characteristics, and content characteristics in fostering the PSR between SMIs and consumers in the context of influencer marketing (Cheung et al., 2022; Hwang and Zhang, 2018; Lou and Kim, 2019).

Antecedents of parasocial relationship

SMIs content value. Ducoffe (1995) developed the advertising value model, in which he defined advertising value as "a subjective evaluation of the relative worth or utility of advertising to consumers." The model proposes advertising value based on three determinants: informativeness, entertainment, and irritation. While advertising informativeness and entertainment enhance the value of advertising, irritation negatively affects advertising value (Ducoffe, 1995). Influencer marketing can be considered a kind of native advertising in which SMIs advise on diverse topics, cooperate with multiple brands, and publish their content in non-commercial formats (Breves et al., 2021; Dhanesh and Duthler, 2019). SMIs can create content and usually function as creative agencies and advertising media, and several studies have regarded SMIs' content as online advertisements and investigated its influence on consumers' responses (Daniel et al., 2018; Enke and Borchers, 2019; Taillon et al., 2020). This study further adopts the two positive elements of advertising value: informativeness and entertainment facets as SMIs' content value corresponds with Lou and Kim (2019).

The informative value of content: SMI content informativeness can be described as the capability of content to provide information on alternative products or other informative content so that purchases can yield the most excellent satisfaction from a consumer's perspective (Ducoffe, 1996; Lou and Yuan, 2019). The extent to which the content is informative is a critical quality that affects whether the audience views SMIs as opinion leaders. Since SMIs provide information about a product's features and quality, or reviews about their personal experiences, they are perceived as trusted sources of information by consumers today (Ki and Kim, 2019). Social media allow SMIs to interact with their followers and share information that consumers seek to acquire. By sharing and posting more informative content about products and brands, SMIs are more likely to exert their influencing effects (Lin et al., 2018). Previous studies have shown that in the social media context, advertising informativeness has a positive effect on brand attitude, which further affects brand awareness and purchase intention (Dehghani et al., 2016). According to Van-Tien Dao et al. (2014), informativeness positively influences consumers'

perception of social media advertising's value, ultimately affecting their intentions to buy online. Lou and Yuan (2019) proposed a SMIs value model, which demonstrated that the informative value of influencer-generated content positively influences their fans' trust in influencers' branded posts and purchase intention. In influencer marketing, informative content has proved to affect followers to perceive SMIs as human brands and lead to a solid emotional bond (Ki et al., 2020). Hence, we propose the following hypothesis:

H1: The informative value of influencers' content will positively influence PSR between influencers and their followers.

The entertainment value of content: SMI content entertainment can be defined as the capability to entertain consumers, which helps audiences escape their daily lives (Ducoffe, 1996; Lou and Yuan, 2019). SMIs can entertain and potentially influence followers' thoughts, attitudes, and behaviors through personal branding as well as build and maintain relationships with their followers on social media (Dhanesh and Duthler, 2019). Influencers create entertainment content usually through esthetic touches and personality twists (Lou and Yuan, 2019). After conducting in-depth interviews with Chinese social media users, Gan and Wang (2015) found that entertainment strongly motivates Chinese users to use Microblog and WeChat by fulfilling the hedonic gratification of using these social media. Prior studies found that the perception of entertainment influences customers' attitudes toward web advertising, which in turn impacts their use of web advertising to obtain information (Zha et al., 2014); Entertainment is a hedonic benefit offered by online stores that can excite consumers' pleasure and influences their approach behaviors (Wu et al., 2019). In the social media context, the value of social media advertising is significantly influenced by entertainment, and consumers' attitudes and behavior will be positively affected by this value (Hamouda, 2018). Research found that the main reason people use Tiktok is for personal entertainment (Yang and Ha, 2021). According to Lou and Kim (2019), PSR between teenage followers and their favorite influencers is positively associated with the entertainment value of influencer-generated content. Hence, we propose the following hypothesis:

H2: The entertainment value of influencers' content will positively influence PSR between influencers and their followers.

Influencer authenticity. The definition of authenticity in sociology is being true to oneself; a person experiences authenticity when they are true to themselves (Vannini and Franzese, 2008). A conceptualization of authenticity is adopted in research on social media practice that overlaps with these notions of 'humanness.' Still, its foundation lies in the genuineness of one's personality (Cohen and Tyler, 2016). Followers perceive influencers' passion and sincerity in creating content and the strength of their internal intentions. To be specific, Influencers who create content with internal motivations, as opposed to those motivated by external or commercial incentives, are considered authentic (Jun and Yi, 2020). Authenticity has been seen as a significant predictor of PSR in traditional and social media contexts (Cohen and Tyler, 2016; Marwick and Boyd, 2011). For example, authenticity has been proven to foster emotional bonds and responses between consumers and celebrities on Twitter (Marwick and Boyd, 2011). Sponsorship on social media is widely known and may make users skeptical of the influencer's motives for promoting the product/service. By being authentic, followers can believe that influencers are posting their genuine opinions (Kim and Kim, 2021). Studies show authenticity can help build trust between influencers and followers (Lee et al., 2021), eliciting a long-term relationship with the brand (Jun and Yi, 2020) and generating a

positive attitude toward the brand (Kim and Kim, 2021). Accordingly, we propose the following hypothesis:

H3: Influencers' authenticity will positively influence PSR between influencers and their followers.

Influencer homophily. Lazarsfeld and Merton (1954) proposed the theory of homophily that the majority of human communication will take place between sources and seekers who are homophilous. The homophily described by Gilly et al. (1998) entails comparable values, preferences, lifestyles, and demographic similarities. There has been a relatively limited study of homophily in marketing and social commerce; it refers to perceptions of similarities between SMIs and their followers regarding attitudes, values, morals, appearance, and backgrounds (Ladhari et al., 2020). Aaker et al. (2000) found a link between the perceived similarity between an endorser and a consumer and advertising attitudes. According to Munnukka et al. (2016), an endorsement's similarity is crucial in establishing credibility between peers, further influencing advertising effectiveness and attitude formation. Consumers will assume that the provided information is helpful and similar to their preferences when considering the information source homogeneous (Fileri et al., 2018). In recent research, source homophily can influence consumers' behavioral engagement and purchase intention (Onofrei et al., 2022). Compared to traditional celebrities, consumers feel more similar to influencers and trust them more (Schouten et al., 2019). Ladhari et al. (2020) found that followers of SMIs who perceive influencers as similar in attitudes, values, and appearance are also more likely to connect with and be emotionally attached to them. Drawing upon these arguments, we hypothesize that:

H4: Influencers' homophily will positively influence PSR between influencers and their followers.

PSR and followers' perceived brand credibility and purchase intention

Brand Credibility. Brand credibility, as perceived in terms of expertise, trustworthiness, and likability, reflects how customers view a brand's credibility (Keller, 2013). Thus, A brand's credibility is determined by its ability and willingness to consistently deliver what has been promised concerning the product information contained in the brand (Erdem and Swait, 2004). The brand's credibility indicates the quality and positioning of the product, and customers will feel more confident in the brand's products and be more loyal to it when it has a highly credible brand (Alam et al., 2012). Scholars have used brand credibility as an outcome to measure the effectiveness of advertising and marketing (Dwivedi et al., 2019; Wang and Scheinbaum, 2017). Lee and Watkins (2016) demonstrate that a positive PSR with vloggers influences luxury brand perceptions (e.g., brand value, brand-user image fit, and brand luxury). Through social media, PSRs were associated with more significant source trustworthiness, positively affecting brand credibility (Chung and Cho, 2017). Reinikainen et al. (2020) suggest that when consumers have PSRs with influencers, they can develop trust in the brand recommended by the influencers and reduce their uncertainty about the brand. To further test the PSR effect on consumers' perceived brand credibility, the next hypothesis is formulated as follows:

H5: The PSR between influencers and their followers will positively influence followers' perceived brand credibility.

Purchase intention. Purchase intention, as a social media campaign outcome, can be helpful to marketers when collaborating with SMIs (Tanwar et al., 2022). Most purchases are motivated by attributes or characteristics of the brands that match the buyer's

purchase motive. It is common for a purchase intention to take some time to become a purchase and plays a vital part in predicting purchase behavior (Guolla et al., 2020). Many advertisers and scholars have routinely used purchase intentions to evaluate the effectiveness of marketing strategies (Van-Tien Dao et al., 2014; Onofrei et al., 2022; Taillon et al., 2020). Using celebrities as marketing tools, marketers create strong relationships between the brand and the celebrity, thereby increasing consumers' purchase intention (Guolla et al., 2020). Djafarova and Rushworth (2017) demonstrated that young female Instagram users perceive SMIs as more credible and can relate to them than traditional celebrities, making them more effective in influencing their purchase behaviors. According to Lou and Kim (2019), purchasing intentions toward products promoted by influencers will be positively correlated with adolescents' perceived PSR with influencers. And regardless of high or low product involvement, PSR between microbloggers and their followers has salient positive effects on followers' attitudes and behavioral intentions (Gong, 2020). Hwang and Zhang (2018) found that the PSR between Chinese SNS users and digital celebrities has positively affected users' purchase intention. Based on the previous findings, the following hypothesis is advanced:

H6: The PSR between influencers and their followers will positively influence followers' purchase intentions toward influencer-promoted products.

Persuasion knowledge as a moderator. According to the persuasion knowledge model, consumers use persuasion knowledge to deal with marketers' persuasive attempts, which can influence their brand attitudes and responses to marketers' advertising and sales promotions (Friestad and Wright, 1994). Conceptual and attitudinal persuasion knowledge are the two dimensions of persuasion knowledge. While conceptual persuasion knowledge encompasses advertising knowledge, including the ability to recognize and understand the persuasive intent, attitudinal persuasion knowledge describes potentially effective attitudes in dealing with advertising (Boerman et al., 2012). Followers know that influencers are paid for their endorsements, regardless of whether they disclose them. As a result of this awareness, they recognize SMIs' content as advertising and are ready to process persuasive messages from SMIs (Dhanesh and Duthler, 2019). Similarly, Lee and Kim (2020) also found that explicit sponsorship disclosure language did not enhance advertising recognition as implicit disclosure language and no disclosure in Instagram posts; all respondents reported some conceptual persuasion knowledge. Previous research was limited in investigating the relationship between SMIs and consumers' persuasion knowledge (Breves et al., 2021; De Jans and Hudders, 2020; Lee and Kim, 2020; Van Reijmersdal et al., 2016). For example, Van Reijmersdal et al. (2016) found that participants activated their persuasion knowledge due to disclosing sponsored blog content, which decreased persuasive arguments' effectiveness. Hwang and Zhang (2018) demonstrated that PSR could enhance persuasive effects by reducing the negative impact of persuasion knowledge on followers' eWOM and purchase intention. The study from Breves et al. (2021) indicates that, unlike users who did not follow any influencers, followers demonstrated lower levels of activated persuasion knowledge due to the established PSR between them. As a consequence, followers reported higher brand evaluations and purchase intentions. Marketing outcomes are more likely to be deeply influenced by effective relationships between users and SMIs. However, users' persuasion knowledge triggers more significant skepticism or greater credibility (Isaac and Grayson, 2016), which may diminish or fortify followers' evaluation of SMIs' authenticity about the brand, product, or service they

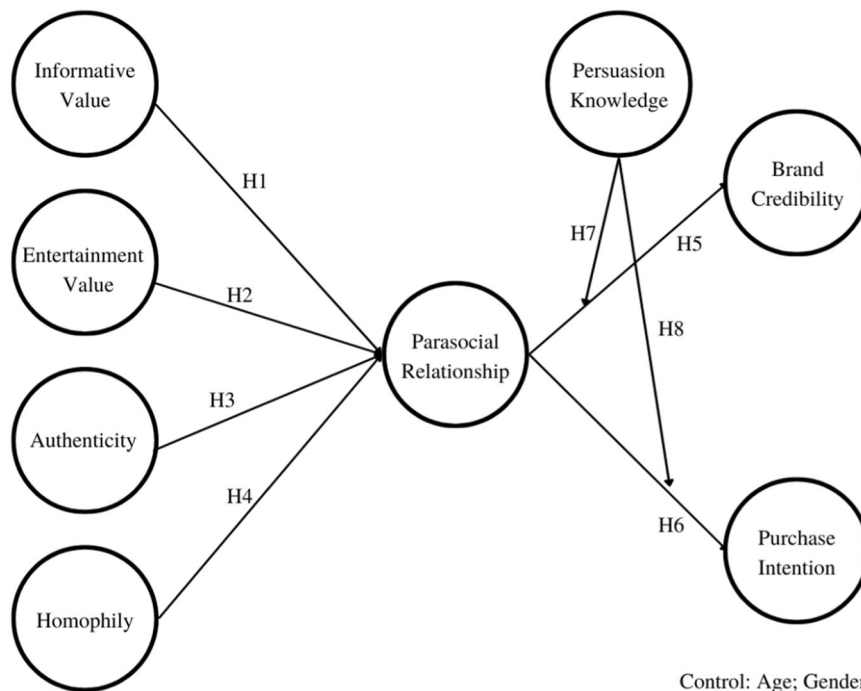


Fig. 1 Research model.

promote on social media. Therefore, the hypothesis is formulated as follows:

H7: Followers’ persuasion knowledge will moderate the relationship between PSR and the endorsed brand credibility.

H8: Followers’ persuasion knowledge will moderate the relationship between PSR and purchase intention.

Previous studies on influencer marketing revealed that demographic factors: age and gender could affect model testing (Cheung et al., 2022; Lou and Yuan, 2019; Yuan and Lou, 2020); hence, we included them as control variables. The conceptual model that summarizes this research is proposed (see Fig. 1).

Methodology

Questionnaire development and data collection. Based on previous relevant literature measurements, we developed measurement items for each construct based on relevant literature. To evaluate the value of influencer-generated content, including informativeness and entertainment, we asked participants to respond to a statement. This statement was presented using two sets of five 7-point semantic differential scales, following the approaches of Lou and Yuan (2019) and Voss et al. (2003). The questionnaire covered various constructs, using a 7-point Likert scale from “1 Strongly Disagree” to “7 Strongly Agree”. Influencer authenticity four items were adopted from Ilicic and Webster (2016), influencer homophily was measured using four items adapted from Onofrei et al. (2022); five-item were used to examine PSRs (Kim et al., 2015); to measure persuasion knowledge, we adopted five items from Hwang and Zhang (2018), brand credibility included five items adapted from Baek and King (2011); We adopted a four-item scale from Yoo and Donthu (2014) to measure purchase intention. After the pilot test, 50 respondents were to assess the accuracy and consistency of the questionnaire, and some refinements were made to reduce ambiguity.

The self-administered online survey was created on Sojump which is one of the most popular platforms in China that specializes in questionnaire surveys, exams, and voting. The

online survey was conducted from early August to late September 2022. We informed the participants that the questionnaire would be autonomous and that respondents would request a final report of the results in return for completing the survey. We further used a screening question to determine whether participants followed any SMIs. Those unable to identify influencers they followed were thanked and excluded from further participation. The following section provides the definition of social media influencers and prompts respondents to think of one of their favorite influencers while completing the questionnaire. The constructs and items were derived from or adapted from previous English papers and translated into Chinese. A back translation has been conducted to ensure the meaning was equivalent after translation. For this study, data were recorded in English and collected in Chinese. The survey was targeted and distributed to 800 respondents and utilized a blend of social media channels to effectively reach the audience. A total of 527 responses were obtained. Subsequently, it was determined that the responses of 263 participants, who did not identify themselves as followers of any influencers, as well as those of 48 individuals who failed to pass an attention-check question, were excluded from the analytical process. Consequently, a total of 216 valid questionnaires remained for the purposes of data analysis. Table 1 presents the demographic information of the 216 respondents. The sample had more female (57.4%) respondents than male (42.5%). With 57.8% of the respondents aged 18–25, and 24.1% from aged 26 to 30 years old; most of the respondents had a diploma or bachelor’s degree (80.6%) and had a monthly income of less than 3000 Chinese Yuan (40.7%).

Statistical procedures. A partial least squares (PLS) approach was used with SmartPLS software 3.3.9. (Ringle et al., 2015) to test the model. The PLS-SEM method can be superior to CB-SEM in some instances, such as when little a priori knowledge is available about the relationships between structural constructs and their measurement characteristics or when exploration has a greater priority than confirmation (Hair et al., 2016). PLS-SEM makes

Table 1 Demographic analysis.

	Variable	Frequency	Percentage (%)
Gender	Male	92	42.5
	Female	124	57.4
Age	18–25	125	57.8
	26–30	52	24.1
	>30	39	18.1
Education	High school or below	7	3.2
	Diploma or bachelor	174	80.6
	Master or above	35	16.2
Monthly Income	3000 and below	88	40.7
	3001–5000	30	13.9
	5001–7000	35	16.2
	7001–9000	12	5.6
	Above 9000	51	23.6

practically no distributional assumptions about the data when working with small sample sizes and complex models (Cassel et al., 1999). Compared to CB-SEM reviews with 4.70 latent variables, the PLS path model has 7.94 latent variables on average (Hair et al., 2011). Therefore, a PLS path modeling approach is more appropriate in this study for data analysis. It is recommended to use ten times the maximum number of paths in the outer and inner models aiming at any construct, as suggested by (Barclay et al., 1995). Thus, 216 collected samples meet the requirements.

Results

Common method bias (CMB). Since self-reported data were gathered from a single source, it is possible that common method bias (CMB) could lead to exaggerated relationships among the constructs in the research model. To address this concern, Harman's single-factor test (Podsakoff et al., 2003) was conducted to assess CMB. The results of the test indicated that the single factor explained less than 50% of the overall variance among indicators. This suggests that the questionnaire used in the study was not influenced by CMB (Sheng and Chien, 2016).

Analysis of measurement model. The evaluation of the measurement model involved assessing its internal consistency reliability and its convergent and discriminant validity (Hair et al., 2016). The factor analysis showed that all measurement loadings were over 0.70. Cronbach's alpha and composite reliability values for all latent constructs were above 0.70, and the average variance extracted (AVE) was higher than 0.50 (Table 2), indicating that the measurement instrument was reliable. The cross-loadings on the other constructs were much lower than the loadings on the measured construct. As shown in Table 3, the square root of the AVE of each construct was larger than its correlation with other latent variables, indicating the discriminant validity (Hair et al., 2016). We further had a collinearity test, showing that the Variance Inflation Factor (VIF) values are lower than 10. It implied that variables did not contain severe problematic collinearity (Hair et al., 2009).

Analysis of structural model. The model fit for the research model was checked using the standardized root mean square residual (SRMR) and the normed fit index (NFI). The results showed that the SRMR had a value of 0.053, which is lower than the recommended threshold of 0.08 (Hu and Bentler, 1999). The NFI had a value of 0.803, surpassing the accepted threshold of 0.80 (Barta et al., 2023; Cheung et al., 2022). Hence, the model fit was confirmed. Bootstrapping analysis using 5000 sample re-

samples was later performed to examine the structural validity of the model. The control variables of age and gender did not significantly influence the PSR, brand credibility, and purchase intention. Table 4 and Fig. 2 show the results of the hypotheses test. Hypotheses 1, 2, 3, and 4 posit that the informative and entertainment value of influencer-generated content, as well as the authenticity and homophily of influencers, will have a positive impact on the PSR between influencers and their followers. Our findings indicate that, with the exception of H2 (which found no significant relationship between the entertainment value of influencers' content and the PSR), the informative value of influencers' content ($\beta = 0.174, p < 0.05$), influencers' authenticity ($\beta = 0.309, p < 0.01$), and influencers' homophily ($\beta = 0.230, p < 0.05$) all had a positive influence on the parasocial relationship between influencers and their followers. Therefore, Hypotheses H1, H3, and H4 are supported. The R^2 was 0.492, meaning that the predictors explained 49.2% of the variance in the PSR.

Hypotheses 5 and 6 hypothesize that the PSR between influencers and followers will positively affect brand credibility and purchase intention. Our results showed that PSR significantly influenced brand credibility ($\beta = 0.550, p < 0.001$) and purchase intention ($\beta = 0.490, p < 0.001$). Hence H5 and H6 were supported. The significant paths in the model accounted for 57.3% of the variance in brand credibility ($R^2 = 0.573$) and 40.5% in followers' purchase intention ($R^2 = 0.405$), which aligns with satisfactory levels in the field of social sciences, as recommended by Chin (1998).

Hypotheses 7 and 8 posit that followers' persuasion knowledge will moderate the relationship between PSR and brand credibility, and between PSR and purchase intention. The results demonstrated that in the relationship between PSR and brand credibility, the moderating effect of persuasion knowledge of followers was significant ($\beta = -0.077, p < 0.05$). Thus, H7 was supported. In the relationship between PSR and followers' purchase intention, followers' persuasion knowledge did not play a moderating role ($p = 0.334$). H8 was rejected.

To assess the influence of influencers' content in terms of informative value, entertainment value, authenticity, and homophily on parasocial relationships, as well as the impact of parasocial relationships on followers' perceptions of recommended brands and their purchase intentions, we investigated the effect sizes (f -squared) of these relationships, as suggested by Cohen (1988). The effect sizes were as follows: the relationship between informative value and parasocial relationships yielded an effect size of 0.03, indicating a small effect. Similarly, the effect size for the relationship between entertainment value and parasocial relationships was 0.02, also classified as a small effect. The relationship between influencer authenticity and parasocial relationships showed an effect size of 0.09, again denoted as a small effect. Lastly, the relationship between influencer homophily and parasocial relationships produced an effect size of 0.05, still considered small. On the other hand, the relationship between parasocial relationships and the perception of brand credibility resulted in a substantial effect size of 0.52 (large), while the relationship with purchase intentions yielded an effect size of 0.30, indicating a medium effect. We used the blindfolding procedure to check the research model's predictive relevance (Q^2). The results demonstrated that the Q^2 values for PSR ($Q^2 = 0.336$), brand credibility ($Q^2 = 0.470$), and purchase intention ($Q^2 = 0.339$) were greater than zero, demonstrating that the independent variables were good at predicting the dependent variables and therefore confirmed the predictive relevance of the model (Hair et al., 2016).

Discussions and conclusions

The primary objective of this study is to investigate the factors that contribute to the development of parasocial relationships

Table 2 Instrument items and reliability indices.

Factor	Item	Factor loading	α	CR	AVE	Source
Informative Value	Ineffective/effective	0.875	0.937	0.952	0.800	Voss et al. (2003); Lou and Yuan (2019)
	Unnecessary/necessary	0.897				
	Unhelpful/helpful	0.901				
	Impractical/Practical	0.901				
	Not functional/functional	0.897				
Entertainment Value	Not fun/Fun	0.839	0.917	0.937	0.750	Voss et al. (2003); Lou and Yuan (2019)
	Dull/Exciting	0.859				
	Not thrilling/Thrilling	0.832				
	Unenjoyable/Enjoyable	0.910				
	Not delightful/delightful	0.888				
Authenticity	The influencer tries to act in a manner that is consistent with his held values, even if others criticize or reject him for doing so	0.746	0.833	0.889	0.668	Illicic and Webster (2016)
	The influencer cares about openness and honesty in close relationships with others	0.819				
	In general, the influencer places a good deal of importance on others understanding who he/she truly is	0.868				
	I can count on the influencer being who he is regardless of the situation	0.832				
	The influencer I followed have similar likes/dislikes as I do	0.874				
	The influencer I followed has similar values as I do	0.877				
	The influencers I followed has the same experience as I do	0.810				
	The influencers I followed has the same preferences as I do	0.867				
	I feel comfortable about the influencer' content	0.866				
	I can rely on information I get from the influencer	0.888				
Parasocial Relationship	I will feel pity if something happens to the influencer	0.858	0.900	0.926	0.716	Kim et al. (2015)
	I think that the influencer is helpful for my interests	0.868				
	I feel close enough to the influencer	0.742				
	The influencer tries to manipulate the audience in ways that I don't like.	0.827				
	I am annoyed by the ad that the influencer sent because the influencer seemed to be trying to inappropriately manage or control the consumer audience.	0.846				
Persuasion Knowledge	When I read the ads that the influencer sent, I think it's pretty obvious the ads are trying to persuade me to buy the product.	0.846	0.898	0.925	0.711	Hwang and Zhang (2018)
	I noticed tricks in these ads that the influencer sent to promote products.	0.855				
	These ads that the influencer sent were meant to sell products.	0.842				
	The brand delivers what it promises	0.913				
	Claims from the brand are believable	0.930				
	My experience with the brand has led me to expect it to keep its promises	0.903				
	The brand is committed to delivering on its claim	0.914				
	The brand has a name I can trust	0.916				
	I will definitely buy products promoted by the influencer in the near future	0.917				
	I intend to purchase the products promoted by the influencer in the near future	0.945				
It is likely that I will purchase the products promoted by the influencer in the near future	0.935					
I expect to purchase the products promoted by the influencer in the near future.	0.925					
Brand Credibility	When I read the ads that the influencer sent, I think it's pretty obvious the ads are trying to persuade me to buy the product.	0.846	0.952	0.963	0.838	Baek and King (2011)
	I noticed tricks in these ads that the influencer sent to promote products.	0.855				
	These ads that the influencer sent were meant to sell products.	0.842				
	The brand delivers what it promises	0.913				
	Claims from the brand are believable	0.930				
Purchase Intention	My experience with the brand has led me to expect it to keep its promises	0.903	0.948	0.963	0.866	Yoo and Donthu (2014)
	The brand is committed to delivering on its claim	0.914				
	The brand has a name I can trust	0.916				
	I will definitely buy products promoted by the influencer in the near future	0.917				
	I intend to purchase the products promoted by the influencer in the near future	0.945				

α Cronbach's alpha, CR composite reliabilities, AVE average variance extracted.

Table 3 Results of correlations for the latent construct.

	1	2	3	4	5	6	7	8
1. Authenticity	0.817							
2. Brand credibility	0.605	0.915						
3. Entertainment value	0.495	0.426	0.866					
4. Homophily	0.677	0.576	0.457	0.857				
5. Informative value	0.539	0.500	0.716	0.454	0.894			
6. Purchase intention	0.557	0.681	0.372	0.522	0.491	0.930		
7. Persuasion knowledge	0.385	0.552	0.299	0.336	0.363	0.471	0.843	
8. Parasocial relationship	0.626	0.708	0.518	0.581	0.542	0.600	0.488	0.846

Diagonal elements in bold are the square root of the average variance extracted (AVE) for each construct.

Table 4 Results of hypothesis testing.

Hypothesis/ structural path	Path estimates	T value	P value	Result
H1 IV → PSR	0.174	2.097	0.036	Accepted
H2 EV → PSR	0.134	1.699	0.089	Rejected
H3 AU → PSR	0.309	2.799	0.005	Accepted
H4 Homo → PSR	0.230	2.459	0.014	Accepted
H5 PSR → BC	0.550	7.683	0.000	Accepted
H6 PSR → PI	0.490	7.615	0.000	Accepted
H7 PSR * PK → BC	-0.077	2.360	0.018	Accepted
H8 PSR * PK → PI	0.033	0.967	0.334	Rejected

IV informative value, EV entertainment value, AU authenticity, Homo homophily, PSR parasocial relationship, BC brand credibility, PI purchase intention, PK persuasion knowledge.

between users and influencers. Furthermore, we aim to examine how these relationships influence consumers’ perceptions of recommended brands and their purchase intentions. In this study, we extended the application of Ducoffe’s advertising value model and integrated the elaboration likelihood model of persuasion. This framework incorporates influencers’ content’s informative value, entertainment value, authenticity, and homophily as influential factors.

The proposed model tested the role of the PSR between influencers and their followers in the persuasive power of influencer marketing. Our findings indicate that influencers’ authenticity exerts the most significant influence on the relationship between influencers and their followers, followed by influencers’ homophily and content’s informative value. The informative value of influencer-generated content played a crucial role in shaping the PSR between influencers and their followers. This, in turn, influenced how followers evaluated the credibility of the endorsed brand and their purchase intentions. The finding is consistent with the prior study which demonstrated that the information value of influencer content positively affects the relationships between influencers and followers, and further affects users’ responses (Cheung et al., 2022; Lou and Yuan, 2019). However, the entertainment value of influencer posts did not affect the PSR between influencers and their follower or purchase intentions, in contrast to the finding from Lou and Kim (2019). The results suggest that influencers can foster PSRs with followers by delivering high-quality informational content rather than focusing on entertainment value. This, in turn, positively impacts how followers assess endorsed brands and make purchase decisions.

The role of authenticity has not been well defined despite the increasing importance of authenticity in SMI marketing (Alcausin, 2020; Jun and Yi, 2020). The study supports the assumption that the influencers’ authenticity is a compelling driver for building the PSR between influencer-follower. It is the

most pivotal factor affecting the PSR between SMIs and users among the four exogenous latent variables in our study. Besides that, the result also shows that homophily is essential for forming the PSR between influencers and social media users. This finding extends the literature about homophily’s effect on relationships by testing it in the influencer marketing context (Ladhari et al. 2020).

Lastly, this study found the negative impacts of followers’ persuasion knowledge on the PSR between them and influencers and their perceived brand credibility. Surprisingly, followers’ persuasion knowledge had no significant moderate effect on the relationship between PSRs and purchase intention. This could be explained by the fact that followers place trust in their chosen online celebrities and believe that influencers share content with good intentions. Furthermore, they often cross-reference information from other sources before making purchase decisions (Lou, 2021). Therefore, followers’ persuasion knowledge does not affect the relationship between PSR and purchase intention.

Theoretical implications. First, this study contributes to social media marketing literature by using the elaboration likelihood model of persuasion (Petty and Cacioppo, 1986), advertising value model (Ducoffe, 1995), and persuasion knowledge models (Friestad and Wright, 1994). It provides an integrated model demonstrating how the PSRs between SMIs and their fans contribute to the effectiveness of influencer marketing. When constructing the persuasive cues that impact the users’ reactions, considering influencers are content generators and advertising media, except using influencers’ characteristics, this study also embraced the informative and entertainment value of the influencer-generated content as the predictors. This study shows how SMIs can use their content value to convey their influence power. Additionally, many existing SMI marketing studies focus on characteristics such as trustworthiness, expertise, and attractiveness of SMIs, while limited research includes other SMIs’ attributions that may be the same as influential in persuading consumers. Our study evidence that influencers’ authenticity and homophily can also facilitate SMI marketing effectiveness through the PSR between them and their followers (Lou and Kim, 2019; Nafees et al., 2021; Reinikainen et al., 2020). Lastly, previous studies have demonstrated mixed findings regarding persuasion knowledge in influencer marketing. Some articles show that users’ persuasion knowledge has adverse marketing outcomes (Boerman et al., 2012; Hwang and Zhang, 2018), while others show the effect of persuasion knowledge is not always negative (Dhanesh and Duthler, 2019; Lou, 2021). Our study reveals that persuasion knowledge has a negative impact on the relationship between PSR and brand credibility but does not significantly moderate the relationship between PSR and purchase intention. This contributes to the growing body of literature on persuasion knowledge in influencer marketing.

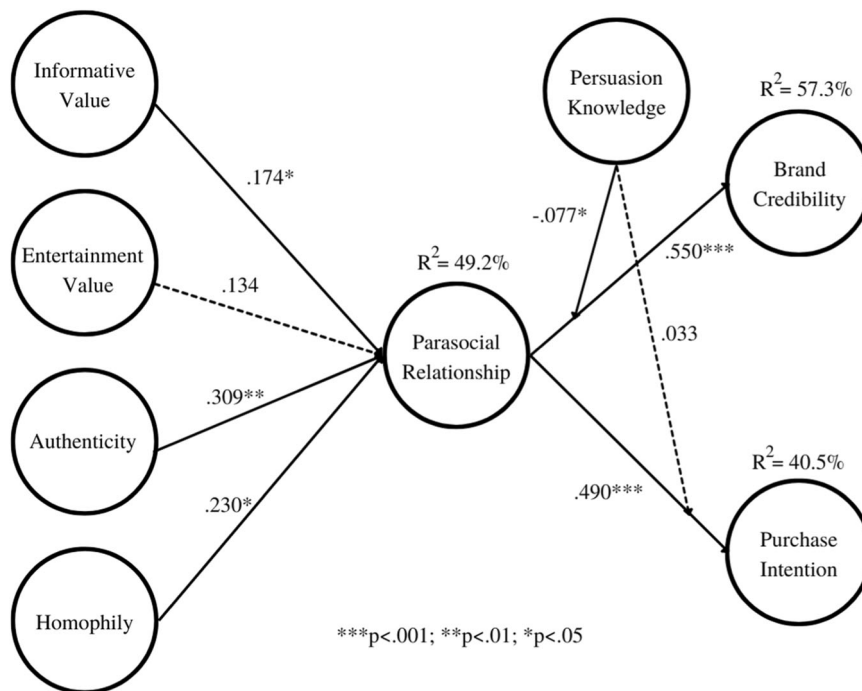


Fig. 2 PLS analysis of research model.

Managerial implications. The study firstly provides some valuable recommendations for influencers. They can create informative content and demonstrate their authenticity and homophily characteristics to their followers, which results in positive PSRs and improve their marketing effectiveness. Secondly, marketers and brands interested in influencer marketing can also benefit from the findings of this study. As selecting suitable influencers is an ongoing challenge, many marketers struggle to solve this (Wiley, 2020). This study suggests that marketers should choose the influencers who have built a solid PSR with their followers to endorse or recommend their products or brands, as PSR plays a significant role in followers’ perceived brand credibility and purchase intentions. Marketers can further evaluate such relationships by examining followers’ perceptions of influencers’ authenticity, homophily, and the valuable information influencers have provided. Companies and brands can have more effective marketing outcomes if they incorporate these elements into their marketing strategies or messages. Lastly, though followers’ persuasion knowledge does not affect the relationship between PSR and purchase intention, it negatively affects the relationship between followers’ perception of a brand’s credibility and PSR. Hence, marketers and influencers should apply the appropriate approach to establish strong PSR to diminish the adverse effect of followers’ persuasion knowledge, especially when building brand trust.

Limitations and future research. Although this study presents several valuable empirical findings, there are some limitations. First, this study was limited to Chinese respondents, and the sample size was relatively small. Whether the sample in our study is representative of the whole internet population is not confirmed. Therefore, generalizing the results should be approached with caution. Future studies should consider more samples by including participants from different cultures or countries. Second, the impact of the entertainment value of influencers’ content on the PSR between influencers and their followers requires a further test. Theoretically, the former has an impact on the latter.

However, this was not supported by our empirical study. Future research needs to test that in other contexts. Third, this study considers influencers’ content value, authenticity, and homophily as critical factors when examining influencer marketing effectiveness. While there may be other relevant factors, such as interactivity, emotional attachment, and followers’ involvement, that may be worth further research. Moreover, the current research considers only the moderating role of persuasion knowledge. Further studies can explore other potential moderators (e.g., the type of social media platform and the duration of social media users following influencers) that did not include in this study. Finally, this study does not differentiate between various types of influencers collected; future research could explore the suggested associations while focusing on specific categories of influencers.

Data availability

The datasets generated during and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Received: 28 December 2022; Accepted: 7 December 2023; Published online: 02 January 2024

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Author contributions

LX conceptualized the study and wrote the initial draft. ZX supervised the project, review, and editing of the manuscript. All authors reviewed and approved the final version.

Competing interests

The authors declare no competing interests.

Ethical approval

The Ethics Committee of Zhejiang Normal University's College of Economics and Management approved the study, and we followed the Declaration of Helsinki to do this research. The approval for the questionnaire survey conventionally does not include an approval number.

Informed consent

Prior to participant recruitment, potential participants were provided with a detailed information sheet outlining the study's purpose, procedures, risks, benefits,

confidentiality measures, and their rights as participants. Informed consent was obtained through a signed consent form, and verbal clarification was provided for any queries raised by participants. Informed consent was obtained from all participants before any data collection procedures commenced. Participants were given ample time to review the information provided, ask questions, and voluntarily agree to participate. The informed consent process was administered by Xiao Liu. Participants' understanding of the study and their willingness to participate were confirmed before data collection began.

Additional information

Supplementary information The online version contains supplementary material available at <https://doi.org/10.1057/s41599-023-02512-1>.

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