

Article

Influencers on Social Media as References: Understanding the Importance of Parasocial Relationships

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Abstract: Audiences' purchase intentions are vital to the success of influencers on social media. This research examined how interpersonal attraction enhances parasocial relationships (PSRs) between influencers and audiences on social media, and how such parasocial relationships, in turn, affect audiences' continuance intention. Interpersonal attraction contains three dimensions: task attraction, social attraction, and physical attraction. The results indicated that the three dimensions of interpersonal attraction significantly affected PSRs. The results also showed that informational influence and perceived credibility strengthened the relationship between PSRs and purchase intentions. Moreover, online comments positively moderated the effect of PSRs on informational influence and perceived credibility. The implications and suggestions for future research are also discussed.

Keywords: social commerce; parasocial relationship; online comments



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1. Introduction

1.1. Research Background

An influencer is an individual who disproportionately impacts a large number of people through the spread of information or some interest-related behavior [1]. Influencers on social media are more important for maximizing the spread of a piece of information or a new product to certain special individuals [2]. Moreover, influencers on social media are a source of advice for audiences [3] because audiences think influencers on social media have knowledge and expertise that can be used to encourage audiences to engage in purchases [4].

Nearly half of the global Internet audience depends on influencer recommendations as a reference for their purchasing decisions on social media [5], which means that, if audiences have enough confidence in influencers on social media, this increases the probability of purchase. Recent research found that 69% of companies plan to spend most of their social media advertising budget on Instagram influencers because they can attract audiences to accept products [6].

Instagram is a highly visual social medium, which makes it a perfect place for people to showcase and sell their products. There are 130 million global Instagram users who tap on shopping posts every month, where 50% of people have visited a website to purchase a product after seeing the product in advertising or otherwise, and 55% of fashion shoppers made a purchase based on Instagram posts [7]. Accordingly, purchase intention is the best measurement reflecting Instagram's impact on marketing. Nowadays, it is easier than ever for creators to directly sell products within the app due to all the new shopping and e-commerce features that Instagram rolled out this year. Out of all customers, 22% said that they would make a purchase based on a social media influencer's endorsement [4]. For the

best results in promoting purchasing, companies should pay attention to the importance of tailoring marketing strategies to their target audiences on social media.

1.2. Research Motivation

Influencers on social media have emerged with the growth of social media, while little attention is paid to the effects of influencers on social media on audiences' purchase intentions [8]. De Veirman, Cauberghe, and Hudders [9] suggested that future research should focus more on the factors that maximize the efficient contribution of influencers in persuading audiences to purchase on social media. Advertising is not an effective way to boost teenagers' purchase intentions; most teenagers show negative attitudes toward advertising [10]. Moreover, purchase intentions can reflect a social media influencer's success in domain expertise or building a relationship with audiences [10]. Hence, promoting products through influencers on social media is one of the most efficient ways to affect audiences' purchase intentions. Influencers on social media should understand the factors that affect audiences' purchase intentions, which can help the influencers to be successful on social media. This research focused on key factors that help social media influencers boost audience purchase intentions, providing insight into the issues mentioned above.

Parasocial relationships (PSRs) refer to audiences' non-face-to-face psychological relationships with influencers on social media [11]. Several researchers found that a PSR is a critical antecedent of purchase intention on social media [12–14]. However, an increasing number of influencers are advising audiences to purchase on social media, meaning that existing influencers face fierce competition. Therefore, this research explored factors that facilitate the relationship between PSRs and purchase intentions for influencers on social media.

Previous research confirmed interpersonal attraction as one of the most important factors that enable audiences to build social relationships with media characters [15–18]. However, the situation may now be different. Thanks to the Internet, people have more avenues of access to connect with a new type of media character, namely, the influencer, but the interpersonal attraction effect of influencers on social media is rarely discussed. Thus, this research re-examined the role of interpersonal attraction in PSRs to provide insights on social media influencers. Interpersonal attraction contains three dimensions: task attraction, social attraction, and physical attraction. Task attraction refers to audiences' desire to finish a task well and reflects social media influencers' impact on audiences [19]. As an audience receives more valuable information from an influencer that helps them to finish a task, they are more likely to have a positive feeling about the influencer on social media, which further strengthens PSRs [20]. Social attraction is the attraction of an audience to an influencer based on perceptions of similarity, likes, and compatibility [21]. Audiences increase their PSRs with influencers on social media when social attraction makes them perceive a friendship and recognize what they have in common with social media characters [22]. Physical attraction is a key part of the charm of social media characters whose physical characteristics appeal to audiences. Physical attraction increases the opportunities in which audiences find similarities with social media influencers' personalities [23] and appreciate their bodily characteristics and facial appearance [24]. Consequently, these features increase audiences' positive emotions, which, in turn, builds PSRs [25].

This research adopted informational influence and perceived credibility as variables to examine whether they improve the relationship between PSRs and purchase intention. Informational influence refers to a process in which influencers on social media give information suggestions to some audiences, and audiences incorporate that information into their decision making [26]. For audiences, professional knowledge is more useful than other attributes are [27]. Perceived credibility is what sways judgments by audiences [28] and shows that audiences approve or support influencers on social media [29]. In addition to PSRs, perceived credibility can effectively create valuable relationships with audiences by providing a positive perception of influencers on social media [30].

Nowadays, people can easily express opinions on social media and usually ignore real perceptions because anonymity comes with less social pressure. More audiences reference others' comments regarding influencers on social media to build confidence. Thus, this research examined the moderating role of others' comments in the relationship between audiences and influencers on social media. Online comments are audiences' information exchanges on the Internet [31]. Online comments can effectively reduce uncertainty because similar feedback from others in the audience toward an influencer on social media is used as evidence and cues [32].

1.3. Research Purpose

This research explored crucial factors that affect audiences' purchase intentions, which helps influencers on social media to better understand their audiences, thereby providing valuable knowledge for influencers on social media to boost audiences' purchase actions. Despite the important effect of PSRs on audiences' purchase intentions, few studies have investigated whether or how the changing media environment affects PSRs. As time goes by, audiences are more careful regarding purchases, which means influencers on social media need more factors to improve PSRs to affect their audiences. Thus, identifying factors that facilitate the relationship between PSRs and purchase intentions is another concern of this research. Although previous research showed that having PSRs are an important factor that indicates audience relationships with influencers on social media, people's online attitudes may have changed. To examine whether this previous research continues to reflect the relationship of people who are active on social media, this research extended the theoretical models of interpersonal attraction to examine its effect on PSRs. This research also investigated the moderating role of audiences' online comments in two relationships: between PSRs and informational influence, and between PSRs and perceived credibility.

Overall, this research addressed the following questions:

1. After audiences' PSRs serve as the determinant of purchase intentions on social media, do other variables affect PSR?
2. What is the key variable that mediates the relationship between PSRs and purchase intentions on social media?
3. After finding the mediators between PSRs and purchase intention, are there any variables that play a role in controlling the relationship between PSRs and mediators?

2. Literature Review and Hypotheses

2.1. Parasocial Relationships

The precursor concept to parasocial interaction was introduced by Horton and Wohl [33], who noted that watching TV is a kind of social interaction. However, social interaction is a two-way communication that is different from the interaction between audiences and social media characters. Thus, Horton and Wohl [33] extended the concept of social interaction to parasocial interaction, which explained the interaction that only audiences controlled. Accordingly, they proposed that parasocial interaction is a one-way interaction.

Experts extended PSI to PSR. Previous researchers argued that PSI is not a realistic interaction between humans in society. Therefore, PSR was proposed as a relationship that can exceed limitations and define the relationship between social media users and characters [34].

A PSR refers to the deep intimacy and psychological connection with someone who is not known in person [11]. A PSR is also a non-face-to-face relationship with a media character [35]. Audiences believe and understand the media character, and thus a PSR is built [36]. Nowadays, a PSR can represent a relationship between audiences and influencers on social media [34]. A PSR is not merely synchronic watching and talking to influencers on social media, but rather a consequence of the intimacy developed through media [37].

Influencers on social media engage in a constant conversation with their audiences through social media. In particular, Rubin and McHugh [16] found that friendship was

a more decisive factor in developing a PSR. Additionally, the self-disclosure of a media character is a crucial step in building a PSR. Furthermore [38], a PSR starts with an audience member that thinks they really “understand” a media character. The perspectives mentioned above are in line with the statement of Aw and Labrecque [11], who concluded that a “PSR can feel as real and intense as face-to-face interpersonal connections that encompass elements of friendship, self-disclosure, and understanding.” Hence, three dimensions of PSR were adopted: friendship, self-disclosure, and understanding.

Friendship is a behavior in which people volunteer to build a relationship with individuals similar to themselves regarding characteristics such as gender, age, and behavioral style [39]. Friendship reflects horizontal relationships between two people who expect to share the costs and benefits of interaction [40]. Likewise, Policarpo [41] proposed that friendship is equal, non-hierarchical, and reciprocal. Most importantly, friendship is a top motivation for audiences to contact media characters [42].

Self-disclosure is a method for building trust and rapport [43]. Greene, Derlega, and Mathews [44] described self-disclosure as the process of sharing thoughts, emotions, attitudes, and other personal information with others. Moreover, self-disclosure provides an impression of an influencer that is formed by audiences [45]. Hence, self-disclosure is an essential factor for developing interpersonal relationships [46].

Understanding refers to users’ feelings of personally knowing influencers on social media [30]. Understanding reflects the feeling of a user that they are connected with an influencer [47]. The strength of a PSR increases with the level of understanding [48]. In particular, users’ understanding of influencers on social media shows a connection to the stronger experience of positive emotion [25]. Hence, understanding is pivotal for facilitating the formation of a PSR [49].

2.2. Antecedents of Parasocial Relationship

Interpersonal attraction is an antecedent of a parasocial relationship and is a multi-dimensional concept that consists of three dimensions: task, social, and physical attraction [15]. Interpersonal attraction is a concept that concerns judgments of whether we like another person or feel good with them [50].

2.2.1. Task Attraction

Task attraction refers to the charm of influencers on social media [19]. Likewise, Hellweg and Andersen [51] proposed that task attraction reflects whether someone can achieve tasks that their audience wants. Moreover, task attraction can indicate whether the work would be easier to achieve with the suggestion of influencers on social media [52]. Media characters can facilitate audiences gaining valuable and efficient information to accomplish social- and business-related tasks [53]. Accordingly, task attraction is a key factor that reveals whether audiences think that influencers on social media can complete the given task and are reliable to take as a reference [54].

Audiences are more likely to find influencers attractive and beneficial on social media if they always receive valuable information that helps them finish a task; they also tend to have positive feelings toward these influencers on social media, which further increases PSRs [20]. Similarly, Rubin and McHugh [16] suggested that the more task attraction that audiences have for media characters, the more understanding they build with media characters. As a result, task attraction increases the audiences’ understanding such that they receive more valuable information from media characters; this trust improves the PSR [15]. Hence, the following hypothesis was proposed:

Hypothesis 1. *Task attraction positively affects PSRs.*

2.2.2. Social Attraction

Social attraction is an audience liking an influencer based on perceptions of similarity, likes, and compatibility [21]. Social attraction reflects audiences' willingness to communicate and the degree of intimacy with media characters [15]. Additionally, social attraction is a result of an influencer's social skills [55]. When it comes to a PSR, social attraction is an antecedent to predicting audience behavior [56].

Social attraction prompts audiences to increase communication with media characters by sharing thoughts and interests [55], which results in sufficient likability, thus motivating audiences to change their attitude [57]. That is, audiences strengthen their PSRs with media characters since social attraction causes audiences to perceive a stronger friendship when they recognize the common characteristics they have with media characters [22]. For audiences, the more characteristics that influencers on social media that audiences find in common, the more understanding they create [30]. This promotes audiences to establish better PSRs with influencers on social media [58]. Hence, the following hypothesis was proposed:

Hypothesis 2. *Social attraction positively affects PSRs.*

2.2.3. Physical Attraction

Physical attraction is the charm of media characters' physical characteristics and facial appearance [15]. Jamil and Rameez [59] and Joseph [60] proposed that physical attraction can change audiences' attitudes about their appearance and style. Moreover, physical attraction causes audiences to shift a media character's image into their idealized self-images [61]. Altogether, physical attraction is a predictor of audiences' motivation to build relationships [62].

Physical attraction increases the opportunities that audiences will find similarities with the personalities of influencers on social media [23]. When media characters can directly let audiences perceive their characteristics, they can create PSRs with audiences [33]; by finding similarities with media characters' personalities, more friendships are built [39]. Additionally, physical attraction makes audiences appreciate the physical characteristics and facial appearance of influencers on social media [24], consequently increasing audiences' positive emotions, which, in turn, builds PSRs [25]. Hence, the following hypothesis was proposed:

Hypothesis 3. *Physical attraction positively affects PSRs.*

2.3. Informational Influence

Venkatesh and Davis [26] defined informational influence as a process in which influencers on social media give information suggestions to their audiences, and these audiences incorporate that information into their decision making. Informational influence is an interpersonal influence; it reflects the willingness of an audience to accept information and the perception that an audience believes the information is true [63]. Additionally, informational influence also reveals the audiences' likelihood to agree with media characters' recommendations [64]. Overall, informational influence can reflect the positive relationship between influencers and their audiences on social media [65].

When an audience member has a PSR with an influencer, they are more willing to accept information, thereby affecting their beliefs [66], which, in turn, makes audiences accept the information more [67]. Likewise, Shen, Huang, Chu, and Liao [68] proposed that audiences often regard the influencers they are in PSRs with as trustworthy sources for information searching; when audiences build PSRs with influencers on social media, they believe the information of influencers on social media more [69]. Hence, the following hypothesis was proposed:

Hypothesis 4. *PSRs positively affect informational influence.*

2.4. Moderating Effect of Online Comments

Online comments are audience information exchanges about influencers on social media [31]. It is also the way for audiences to express their opinions toward influencers on social media [70] and reveal whether they trust influencers on social media. Research showed that online comments are usually the evidence that audiences reference regarding influencers on social media [71]. Walther et al. [72] also indicated that online comments are the endorsement from audiences because these online comments are made by the average audiences who are less biased [73]. Consequently, online comments can confirm the credibility of influencers on social media [74].

When audiences decide to accept information from influencers on social media, they consider whether there are other audience members who have made the same decision [75]. Online comments are evidence for audiences to confirm whether their opinions are the same as others, which promotes the willingness to reference influencers on social media [71]. Moreover, positive comments can positively stimulate an emotional relationship [76] through understanding media characters more based on the opinions of others [31]. Consequently, this leads to audiences having stronger PSRs with influencers on social media, and thus they accept the information more [77]. Hence, the following hypotheses were proposed:

Hypothesis 5. *PSRs positively affect perceived credibility.*

Hypothesis 6. *Online comments positively moderate the effect of PSRs on informational influence.*

Audiences sometimes feel uncertain when they rely on the credibility of influencers on social media through PSR; thus, they need evidence and cues [71]. Online comments are efficient for resolving uncertainty [72]; it becomes the medium to increase audiences' positive attitudes toward influencers on social media through similar positive opinions from others in the audience. Furthermore, the positive feeling promotes a PSR [25] and strengthens the perceived credibility [78]. Hence, the following hypothesis was proposed:

Hypothesis 7. *Online comments positively moderate the effect of PSRs on perceived credibility.*

2.5. Purchase Intention

Purchase intention is the audiences' future willingness to purchase products [79]. Some researchers asserted that purchase intention forecasts audiences' purchase behavior [80,81]. Thus, it is customary to use purchase intention to measure the proxy of actual purchase behavior [82] since audiences may make purchases with practical constraints instead of real preference [83]. Altogether, it is necessary to conceive their purchase intention tendencies in advance to trigger audiences' purchase behavior [84].

Winterich and Nenkov [85] proposed that informational influence motivates audiences to make purchase decisions through accepting the suggestions of influencers on social media. Because media characters provide knowledgeable recommendations to audiences during the product search process [27], this makes the information more credible for audiences, which is critical [86]. When information satisfies audience demands, audiences are more likely to consider buying the product [87]. In other words, informational influence increases an audience's willingness to understand the product and obtain evaluations [88]. Hence, the following hypothesis was proposed:

Hypothesis 8. *Informational influence positively affects purchase intention.*

Higher perceived credibility makes audiences consider influencers on social media as trustworthy, which motivates audiences to purchase more [89]. Likewise, perceived credibility refers to trustworthiness and expertise, which increase audiences' intention to purchase products [90]. The more credibility that audiences perceive, the less risk and costs they feel [91]. In other words, higher perceived credibility intensifies audiences'

expected utility of products, thereby leading to increased purchase intention [92]. Thus, the following hypothesis was proposed:

Hypothesis 9. *Perceived credibility positively affects purchase intention.*

2.6. Conceptual Framework

The conceptual framework is shown in Figure 1. The conceptual framework contends that task attraction, social attraction, and physical attraction lead to social media audiences' parasocial relationships (PSRs), which contain three dimensions: friendship, self-disclosure, and understanding. It was also proposed that PSRs are directly and indirectly related to purchase intention, with the indirect path occurring through informational influence and perceived credibility. Moreover, online comments positively moderate the effect of PSR on informational influence and perceived credibility.

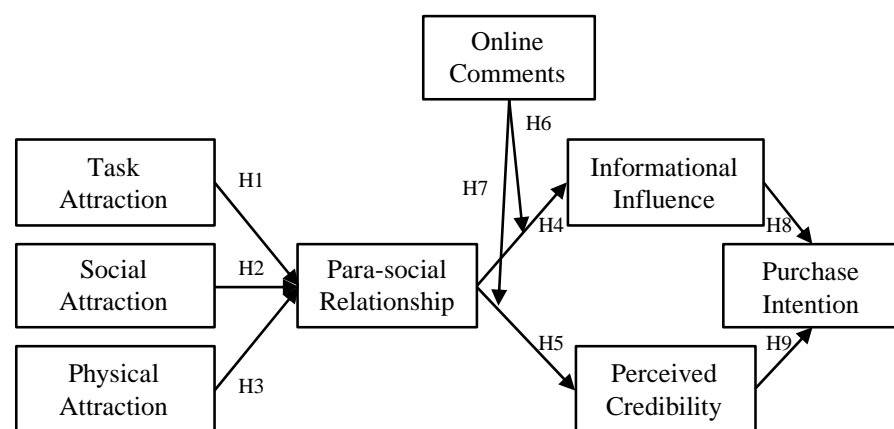


Figure 1. Conceptual framework.

To sum up, following the conceptual framework mentioned above, Table 1 displays the hypotheses that were proposed for this research.

Table 1. Research hypotheses.

Hypothesis 1	Task attraction positively affects PSRs.
Hypothesis 2	Social attraction positively affects PSRs.
Hypothesis 3	Physical attraction positively affects PSRs.
Hypothesis 4	PSRs positively affect informational influence.
Hypothesis 5	PSRs positively affect perceived credibility.
Hypothesis 6	Online comments moderate the effect of PSRs on informational influence.
Hypothesis 7	Online comments moderate the effect of PSRs on perceived credibility.
Hypothesis 8	Informational influence positively affects purchase intention.
Hypothesis 9	Perceived credibility positively affects purchase intention.

3. Research Methodology

3.1. Data Collection

An online questionnaire was conducted and sent via a hyperlink to collect research data. The sample of this research was Instagram users in Taiwan. First, the respondents were asked to answer whether they followed an influencer. By asking this question, we could ensure the reliability and validity of the measures of this research. A total of

300 questionnaires were collected. After excluding three incomplete responses, the sample size was 297. Data were corrected from 20 December 2020 to 1 March 2021.

3.2. Operational Definitions

Operational definitions refer to a detailed explanation of a specific context that is used during data collection. Operational definitions also help researchers to standardize data to aid with their interpretation. Based on the research purpose, the operational definitions of the variables in this research are given below.

3.2.1. Antecedents of Parasocial Relationships

In this research, PSR antecedents were described as variables that may affect PSR when audiences approach influencers on social media. The PSR antecedents examined in this research were task attraction, social attraction, and physical attraction. The measurement items of the PSR antecedents are shown in Table 2.

Table 2. Measurement items of PSR antecedents.

Variable	Code	Measurement Items
Task attraction	TA1	If I wanted to get tasks done (e.g., pick clothes, compare prices, and search for products), I could probably depend on the influencers who I approach most frequently on Instagram.
	TA2	The influencers who I approach most frequently on Instagram would be assets in any task situation (e.g., picking clothes, compare prices, and searching for products).
	TA3	I am confident in the influencers' abilities who I approach most frequently on Instagram to get my task done (e.g., picking clothes, compare prices, and searching for products) on XXX.
	TA4	I could rely on the influencers who I approach most frequently on Instagram to get the task done (e.g., pick clothes, compare prices, and search for products).
Social attraction	SA1	I would like to have a friendly chat with the influencers who I approach most frequently on Instagram.
	SA2	I could become close friends with the influencers who I approach most frequently on Instagram.
	SA3	Some influencers on Instagram would be pleasant to be with.
Physical attraction	PA1	I think the influencers that I approach most frequently on Instagram are quite handsome/pretty.
	PA2	The clothes that the influencers who I approach most frequently on Instagram wear are not becoming.
	PA3	The influencers that I approach most frequently on Instagram are very sexy looking.
	PA4	I find the influencers who I approach most frequently on Instagram are very physically attractive.

This research defined task attraction as a concept that concerns judgments about whether influencers on social media can help audiences finish tasks. Task attraction was measured with four items adapted from McCluskey and McCain [15]. Social attraction is audiences' positive perception of similarity, likes, and compatibility with influencers on social media. Social attraction was measured with three items adapted from McCluskey and McCain [15]. Physical attraction is the positive attitude of audiences appreciating the physical characteristics and facial appearance of influencers on social media. Physical attraction was measured with four items adapted from McCluskey and McCain [15].

3.2.2. Parasocial Relationships, Informational Influence, Perceived Credibility, and Purchase Intention

PSRs reflect the non-face-to-face relationship between audiences and influencers on social media, which involves deep intimacy and psychological connections. This research

included three constructs as the dimensions of PSRs, namely, friendship, self-disclosure, and understanding, with six measured items (see Table 2). Friendship was measured with two items adapted from Adam and Sizemore [93]. Self-disclosure was measured with two items adapted from Kim and Song [12]. This research defined informational influence as a process of information giving that audiences accept. Informational influence was measured with four items (see Table 3) adapted from Park and Lessig [1]. Perceived credibility in this research was defined as a determining factor about audience beliefs of influencers on social media. Perceived credibility was measured with three items (see Table 3). Purchase intention in this research is the degree to which a consumer is willing to purchase a product, which is used as a proxy for actual purchasing behavior.

Table 3. Measurement items of parasocial relationships, informational influence, perceived credibility, and purchase intention.

Variable	Code	Measurement Item
Parasocial relationship	PSR1	I could have a warm relationship with the influencer who I approach most frequently on Instagram.
	PSR2	I would give the influencer who I approach most frequently on Instagram emotional support.
	PSR3	The influencer who I approach most frequently on Instagram talks about their romantic partners.
	PSR4	The influencer who I approach most frequently on Instagram talks about personal habits.
	PSR5	While viewing the show of the influencer who I approach most frequently on Instagram, I could feel the emotions they portrayed.
	PSR6	During viewing the influencer who I approach most frequently on Instagram, I feel I could really get inside their head.
Informational influence	II1	I seek information from the influencer who I approach most frequently on Instagram since I consider them an expert.
	II2	I frequently gather information about a product from the influencer who I approach most frequently on Instagram before I buy that product.
	II3	What the influencer who I approach most frequently on Instagram does influences my choice of virtual items.
	II4	To make sure I buy the right virtual items, I often observe what the influencer who I approach most frequently on Instagram is buying and using.
Perceived credibility	EC1	The influencer who I approach most frequently on Instagram and I are very alike.
	EC2	I can easily identify with the influencer who I approach most frequently on Instagram.
	EC3	I consider the influencer who I approach most frequently on Instagram to be trustworthy.
Purchase intention	I1	In the next six months, I am likely to purchase items offered by the influencer who I approach most frequently on Instagram.
	I2	In the next six months, I am certain to purchase items offered by the influencer who I approach most frequently on Instagram.
	I3	In the next six months, I will definitely purchase items offered by the influencer who I approach most frequently on Instagram.

3.2.3. Parasocial Relationships and Online Comments

Online comments are informational exchanges of audience members' positive opinions on social media. The effects of online comments were measured with three items (see Table 4).

Table 4. Measurement items regarding the effects of online comments.

Variable	Code	Measurement Item
Online comments	OC1	Not reading versus reading audience members' comments.
	OC2	I closely follow the suggestions of the positive comments and do what was recommended.
	OC3	I agree with the opinions suggested in the comments.

4. Data Analysis and Empirical Results

4.1. Reliability and Validity Analysis

Cronbach's α is an indicator of internal consistency that can analyze how closely related a set of items are as a group. A value of Cronbach's α greater than 0.8 is ideal to support the reliability of a set of measurements [94]. If the coefficient is lower than 0.35, it should be rejected [94]. As shown in Table 5, the Cronbach's α of each construct was greater than 0.8, indicating the good reliability of the questionnaire.

Table 5. Factor loading.

Construct	Measure Item	Factor Loading	Corrected Item—Total Correlation	Cronbach's α	CR	AVE
Task attraction	PA1	0.87	0.88	0.92	0.95	0.84
	PA2	0.95	0.82			
	PA3	0.92	0.82			
	PA4	0.92	0.77			
Social attraction	SA1	0.91	0.86	0.93	0.93	0.82
	SA2	0.92	0.88			
	SA3	0.88	0.83			
Physical attraction	TA1	0.93	0.85	0.93	0.93	0.76
	TA2	0.87	0.92			
	TA3	0.87	0.90			
	TA4	0.81	0.90			
Parasocial relationship	PSR1	0.79	0.68	0.88	0.88	0.54
	PSR2	0.77	0.69			
	PSR3	0.65	0.65			
	PSR4	0.69	0.69			
	PSR5	0.76	0.70			
	PSR6	0.75	0.68			
Informational influence	II1	0.85	0.83	0.93	0.92	0.75
	II2	0.91	0.86			
	II3	0.86	0.83			
	II4	0.86	0.83			
Perceived credibility	EC1	0.78	0.77	0.91	0.91	0.78
	EC2	0.92	0.87			
	EC3	0.94	0.85			
Online comments	OC1	0.80	0.76	0.90	0.90	0.76
	OC2	0.96	0.89			
	OC3	0.84	0.78			
Purchase intention	I1	0.86	0.86	0.95	0.95	0.87
	I2	0.96	0.93			
	I3	0.96	0.92			

Composite reliability (CR) is an alternative indicator that is used to test correlation with the measurement items. CR estimates should be greater than 0.6 for acceptability [94]. As shown in Table 5, all CR estimates were greater than 0.8, which ensured the reliability of the collected data.

Average variance extracted (AVE) is a measurement of validity. Bagozzi and Youjae [1] suggested that the AVE should be above 0.5. As shown in Table 5, all AVE estimates were greater than the recommended value of 0.5, indicating that the latent variables were valid.

Confirmatory factor analysis (CFA) was performed via SPSS 22 to test the validity of the proposed research model. Factor loading can be used to explain the relationship between observed variables and latent factors. Factor loading exceeding 0.5 can be considered to be an adequate indicator of validity [95]. As shown in Table 5, the factor loading of all items was acceptable.

4.2. Results of the Regression Analysis and Hierarchical Moderated Regression Analysis

Regression analysis and hierarchical moderated regression analysis were used to test the hypotheses. Hierarchical moderated regression analysis was used to test the hypotheses for two primary reasons. First, the relatively straightforward predicted relationships between dependent, independent, and moderator variables were investigated. Second, two two-way moderating relationships were investigated in this study for the avoidance of SEM in complicated moderating tests. All scales were averaged to form a composite. To examine the individual moderating effects, data were mean-centered to avoid multicollinearity when multiplying the moderating variables by the parasocial relationship. The proposed model was tested using SPSS 22 to explore the direct effect of task attraction on parasocial relationships, social attraction on parasocial relationships, physical attraction on parasocial relationships, parasocial relationships on informational influence, parasocial relationships on perceived credibility, informational influence on purchase intention, perceived credibility on purchase intention, and the moderating effects of online comments.

The results of the regression models are shown in Table 6. Model 1 evaluated H1–H3; model 4 evaluated H4 and H6; model 7 evaluated H5 and H7; model 8 evaluated H8 and H9. As shown in model 1, task attraction had a direct positive effect on parasocial relationships ($\beta = 0.078, p < 0.05$); therefore, H1 was supported. Social attraction had a direct positive effect on parasocial relationships ($\beta = 0.239, p < 0.05$); therefore, H2 was supported. Physical attraction had a direct positive effect on parasocial relationships ($\beta = 0.335, p < 0.05$); therefore, H3 was supported. Hypotheses H1, H2, and H3 were tested by estimating the following equation using multiple regression analysis:

$$Y_i = \beta_0 + \beta_1 TA_i + \beta_2 SA_i + \beta_3 PA_i + \varepsilon_i \text{ (model 1),}$$

where Y—parasocial relationship, TA—task attraction, SA—social attraction, PA—physical attraction, C—commitment, ε —error term, and i—respondent. The β_0 – β_3 values were coefficients to be determined.

In model 2, the main effect variable was entered. Model 3 included the main effect variable and moderating variable. Model 4 included the main effect variable, moderating variable, and one two-way interaction term. The explanatory power of model 4 ($R^2 = 0.256$) was higher than that of model 2 ($R^2 = 0.221$) and model 3 ($R^2 = 0.239$); the explanatory power of model 3 was also higher than that of model 2 ($\Delta R^2 = 0.018, \Delta F = 7.048, p < 0.05$). The inclusion of two two-way interaction terms then caused a significant improvement in the explanatory power of model 4 over model 3 ($\Delta R^2 = 0.017, \Delta F = 6.755, p < 0.05$). As shown in model 4, parasocial relationships had a direct positive effect on informational influence ($\beta = 0.332, p < 0.05$); therefore, H4 was supported. The interaction effect of parasocial relationships and online comments was significant and positive ($\beta = 0.132, p < 0.05$). The positive sign of the coefficient indicated that when there were more online comments, the effect of a parasocial relationship on informational influence increased. Hence, H6 was supported. Hypotheses H4 and H6 were tested by estimating the following equation using hierarchical moderated regression analysis:

$$Y_i = \beta_0 + \beta_1 PSR_i + \beta_2 OC_i + \beta_3 (PSR_i \times OC_i) + \varepsilon_i \text{ (model 4),}$$

where Y —informational influence, PSR—parasocial relationship, OC—online commitment, ϵ —error term, and i —respondent. The β_0 – β_3 values were coefficients to be determined.

Table 6. Regression results.

Model 1						
Dependent variable: parasocial relationships	β		t			
<i>Main effects</i>						
Task attraction (TA)	0.078 *		2.255			
Social attraction (SA)	0.239 *		6.026			
Physical attraction (PA)	0.335 *		7.171			
R^2			0.475			
ΔR^2			0.475			
ΔF			89.381			
Model 2		Model 3		Model 4		
Dependent variable: informational influence	β	t	β	t	β	t
<i>Main effect</i>						
Parasocial relationship (PSR)	0.470 *	9.197	0.355 *	5.309	0.332 *	4.971
<i>Moderator</i>						
Online comments (OC)			0.177 *	2.655	0.178 *	2.698
<i>Two-way interaction</i>						
PSR \times OC (H6)					0.132 *	2.599
R^2	0.221		0.239		0.256	
ΔR^2			0.018 *		0.017 *	
ΔF			7.048		6.755	
Model 5		Model 6		Model 7		
Dependent variable: perceived credibility	β	t	β	t	β	t
<i>Main effect</i>						
Parasocial relationship (PSR)	0.745 *	13.749	0.587 *	8.364	0.568 *	8.066
<i>Moderator</i>						
Online comments (OC)			0.215 *	3.440	0.216 *	3.473
<i>Two-way interaction</i>						
PSR \times OC (H7)					0.100 *	2.050
R^2	0.388		0.412		0.420	
ΔR^2			0.023 *		0.008 *	
ΔF			11.837		4.203	
Model 8						
Dependent variable: purchase intention	β		t			
<i>Main effects</i>						
Informational influence (II)	0.254 *		3.924			
Perceived credibility (EC)	0.467 *		7.018			
R^2			0.278			
ΔR^2			0.278 *			
ΔF			57.242			

Note: * $p < 0.05$.

In model 5, the main effect variable was entered. Model 6 included the main effect variable and moderating variable. Model 7 included the main effect variable, moderating variable, and one two-way interaction term. The explanatory power of model 7 ($R^2 = 0.420$) was higher than that of model 5 ($R^2 = 0.388$) and model 6 ($R^2 = 0.412$); the explanatory power of model 6 was also higher than that of model 5 ($\Delta R^2 = 0.023$, $\Delta F = 11.837$, $p < 0.05$). The inclusion of two two-way interaction terms caused a significant improvement in the

explanatory power of model 7 over model 6 ($\Delta R^2 = 0.008$, $\Delta F = 4.203$, $p < 0.05$). As shown in model 7, parasocial relationships had a direct positive effect on perceived credibility ($\beta = 0.568$, $p < 0.05$); therefore, H5 was supported. The interaction effect of parasocial relationships and online comments on informational influence was significant and positive ($\beta = 0.091$, $p < 0.05$). The positive sign of the coefficient indicated that, when there were more online comments, the effects of parasocial relationships on informational influence increased. Hence, H6 was supported. The interaction effect of parasocial relationships and online comments on perceived credibility was significant and positive ($\beta = 0.100$, $p < 0.05$). The positive sign of the coefficient indicated that when there were more online comments, the effects of parasocial relationships on perceived credibility increased. Hence, H7 was supported. Hypotheses H5 and H7 were tested by estimating the following equation using hierarchical moderated regression analysis:

$$Y_i = \beta_0 + \beta_1 \text{PSR}_i + \beta_2 \text{OC}_i + \beta_3 (\text{PSR}_i \times \text{OC}_i) + \varepsilon_i \text{ (model 7)},$$

where Y—perceived credibility, PSR—parasocial relationship, OC—online commitment, ε —error term, and i—respondent. The β_0 – β_3 values were coefficients to be determined.

As shown in model 8, both informational influence ($\beta = 0.254$, $p < 0.05$) and perceived credibility ($\beta = 0.467$, $p < 0.05$) had a positive effect on purchase intention; therefore, H8 and H9 were supported. Hypotheses H8 and H9 were tested by estimating the following equation using multiple regression analysis:

$$Y_i = \beta_0 + \beta_1 \text{II}_i + \beta_2 \text{EC}_i + \varepsilon_i \text{ (model 8)},$$

where Y—purchase intention, II—informational influence, EC—perceived credibility, ε —error term, and i—respondent. The β_0 – β_2 values were coefficients to be determined.

4.3. Results of Research Hypotheses Testing

The results of the research hypothesis testing are shown in Table 7.

Table 7. Results of research hypothesis testing.

	Research Hypotheses	Supported
Hypothesis 1	Task attraction positively affects PSRs.	YES
Hypothesis 2	Social attraction positively affects PSRs.	YES
Hypothesis 3	Physical attraction positively affects PSRs.	YES
Hypothesis 4	PSRs positively affect informational influence.	YES
Hypothesis 5	PSRs positively affect perceived credibility.	YES
Hypothesis 6	Online comments moderate the effect of PSRs on informational influence.	YES
Hypothesis 7	Online comments moderate the effect of PSRs on perceived credibility.	YES
Hypothesis 8	Informational influence positively affects purchase intention.	YES
Hypothesis 9	Perceived credibility positively affects purchase intention.	YES

5. Discussion and Suggestions

5.1. Theoretical Implications

Social media are changing the dynamics of the relationship between audiences and their media influencers. In the past, such a relationship used to not be interactive. Social media have changed this one-sided relationship into a more interactive and reciprocal one. Little is known as to whether or how this changing media environment affects parasocial relationships. Therefore, the process and outcome of parasocial relationships in

this new media environment may be different. Thus, this study challenged the existing understanding of parasocial relationships in the social media context. First, this research on the literature on PSRs was conducted as a determinant of purchase intention on social media. It was developed by integrating task attraction, social attraction, and physical attraction as the antecedents of PSRs. This was consistent with prior studies of McCluskey and McCain [15], which showed that task attraction positively affected PSRs, indicating that audiences obtain valuable information about how to finish a task, facilitating their PSRs toward influencers on social media. Moreover, social attraction had significant effects on PSRs. This research provided support based on what is experienced or seen rather than on theory according to the findings of McCluskey and McCain [15], providing extra evidence regarding audience communication through the sharing of thoughts and interests of influencers on social media, which allows them to establish better PSRs. Further, the results revealed that physical attraction had significant effects on PSRs. Consistent with McCluskey and McCain [15], this research proposed that, when media characters are physically attractive, audiences find more similarities with media characters' personalities, thus strengthening PSRs.

Second, the results showed that informational influence both had a direct positive effect on purchase intention and mediated the relationship between PSRs and purchase intention. PSRs caused audiences to be more willing to believe information from influencers on social media. When audiences thought that the knowledgeable recommendations from influencers on social media were trustworthy, it fulfilled audiences' need to strengthen their purchase intention. Moreover, perceived credibility played the same role between PSRs and purchase intention. PSRs caused audiences to believe influencers on social media more through having stronger friendships and understanding; as such, audiences perceived the trustworthiness of influencers on social media more, making them feel less risk and costs regarding purchases.

Despite the parasocial relationships that audience members have with their influencers, uncertainty can still prevail when it comes to the informational influence and perceived credibility of influencers. Previous research exploring whether parasocial relationships strengthen or weaken informational influence and perceived credibility remains limited. Context is needed, which can be instantiated through online comments by audiences. Thus, our research extended parasocial relationship theory by incorporating online comments as a moderator. This research investigated the context in which the quality of the PSR had a stronger effect on informational influence. Consistent with expectations, the results revealed that online comments positively moderated the relationship between PSRs and informational influence. Audiences who referenced more positive comments of influencers on social media had stronger PSRs and therefore a higher informational influence compared with audiences who referenced fewer positive comments. When audiences took positive comments as evidence, it prompted willingness to reference influencers on social media. In other words, there was a need for positive comments for audiences to increase their understanding of media characters and thus to believe the information these characters presented [31]. Similarly, online comments positively moderated the relationship between PSRs and perceived credibility. Audiences who referenced more positive comments of influencers on social media had stronger PSRs and thereby higher perceived credibility compared with audiences who referenced fewer positive comments. When audiences take positive comments as evidence, it prompts their positive attitude toward influencers on social media [78]. In other words, there was a need for positive comments for audiences to reduce audience uncertainty and hence the risk associated with believing media characters.

5.2. Managerial Implications

This research provides practical implications for influencers on social media to drive purchase intention. First, interpersonal attraction had a strong effect on changing audience attitudes. Task attraction played a crucial role in meeting audiences' expectations regarding finishing tasks through the suggestions from influencers on social media. The results

suggested that influencers on social media should provide enough efficient opinions to help audiences achieve their goals. Social attraction had a great influence on audiences regarding changing their attitudes toward influencers on social media. This research suggested that influencers on social media should communicate with audiences more often to enhance their friendly image. In contrast with previous research, physical attraction was shown to positively affect PSRs. Physical attraction was more important for audiences; influencers on social media should pay more attention to improving their appearance, which creates a better impression for audiences. Second, PSRs played a key role in the relationship between audiences and influencers on social media. Audiences who had PSRs with influencers on social media actually showed more belief and understanding with influencers on social media than other audiences who did not have PSRs. They also showed more willingness to believe what influencers on social media said. Thus, just like what some celebrities did with audiences on traditional media, social media influencers should keep building PSRs with audiences [10]. For instance, influencers on social media should not only generate content but also engage in two-way communication with audiences, which can cause audiences to have more interactions with them and foster stronger PSRs.

Third, this research indicated that informational influence played an important role in affecting audiences' purchase intention in a well-established PSR situation. Audiences' purchase intention becomes stronger through obtaining valuable information from influencers on social media. Influencers on social media must increase appropriate communication through knowledgeable information to convince audiences [96]. Moreover, the perceived credibility of influencers on social media showed the effect of reducing audiences' perceived risk. Audiences were more willing to purchase through influencers on social media when they felt enough credibility in the relationship. This research recommends that influencers on social media should always keep their promises to audiences and be honest while recommending products.

Lastly, influencers on social media should attach great importance to online comments that are positive about them. Positive online comments are key elements that enhance the effect of PSRs. Positive comments provide an audience with evidence and cues to increase the audiences' belief in the information given by influencers on social media. Influencers on social media should check and reply to all comments as much as possible [1]. Influencers on social media should present themselves in an honest manner to enhance audiences' positive attitudes. This causes audiences to feel that they are important to influencers on social media and maximizes the effect of positive comments.

5.3. Limitations and Future Research

This research had some limitations, but it also offers future research approaches. First, the results of this research showed that physical attraction affected PSRs the most. When young people built a relationship with influencers on social media, appearance could directly cause them to build PSRs. Young people also thought that influencers on social media were credible after building PSRs. This means that influencers on social media could cause audiences to purchase with their physical attraction. Thus, future research can focus on this new behavior between young people and influencers on social media. Second, this study concentrated on voluntary response surveys of social media audiences who identified as having at least one influencer they followed often. Voluntary response surveys tend to oversample groups who have specific opinions and strengthen attitudes; thus, the results cannot be generalized to some groups without exercising caution. Third, as in some past research, this research was limited to data that were collected by using online surveys. Despite this research's ample sample size, online survey samples tend to have some issues regarding external validity; thus, these results should be further validated by adopting various sampling methods. Following reviewer suggestions, we have added the following statements to this section. Fourth, with social media influencers as the research focus, our results cannot be generalized to influencers on social media with different attributes, thus challenging the mainstream assumption of social media. Future research can investigate

influencers on different media platforms through the improved theory, context, and method (TCM) framework proposed by Lim et al. [96]. Future studies should employ different research designs, such as experimental research, to further validate the findings of this study. Lastly, whether the moderating roles of negative online comments also affect the perceived informational influence and credibility of influencers on social media is also an important question for future focus.

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