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Investigating the influence of online interpersonal interaction on purchase intention based on stimulus-organism-reaction model

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Abstract

Based on the stimulus-organism-reaction model, we study the direct effects of the three interpersonal attraction factors (perceived similarity, perceived familiarity, and perceived expertise) on purchase intention in the social commerce era, as well as the mediating roles of the normative and informational influence of reference groups in the above relationship. We apply structural equation model to the study samples consisting of 490 WeChat users. The results of empirical research indicate that the three interpersonal attraction factors have positive effects on purchase intention. Both the normative and informational influence fully mediate the effect of perceived familiarity on purchase intention, but only partially mediate the effects of perceived similarity and perceived expertise on purchase intention. The findings provided practitioners with insights into enhancing users' intention to purchase in social commerce.

Keywords: Online interpersonal interaction, Reference group, Purchase intention, SOR model

Background

On January 31, 2018, the China Internet Network Information Center (CNNIC) released the *41st Statistical Report on China's Internet Development* in Beijing. By December 2017, the number of Internet users in China reached 772 million, accounting for 55.8% of the total population, which exceeds the global average (51.7%) by 4.1% and the Asian average (46.7%) by 9.1%. The rapid development of digital technology and Internet has changed the traditional model of interpersonal interaction. The "Hyperpersonal Communication" model states that people who are engaged in computer-mediated communication may experience greater levels of intimacy, unity and liking than face-to-face interaction users [1]. Online interpersonal interaction demonstrates the relationships of social groups on Internet platforms. It is a practical activity that shares knowledge through digitized and symbolized information among the highly integrated societies and individuals online and in the real world.

WeChat is the most popular and widely used social platform app in China. Based on an analysis of WeChat user data, the *WeChat Users & Business Ecosystem Report 2017* showed that by December 2016, there were about 889 million active WeChat users every month, and those users spent 1967 min on average on WeChat each month. About 45%

of them have more than 200 contacts, and most users add more than 5 WeChat friends every month. The information consumption promoted by WeChat has reached 1742.5 billion RMB annually. As a popular social tool, WeChat is gradually changing the social method of the interaction. The overall relationship has been transformed from a strong relationship with high similarity, high intimacy, and high reciprocity to a weak relationship with strong differences and low popularity. Therefore, the web 2.0 era social networking platforms, for instance, WeChat, have gradually become the main tools for people to express their emotions or share their experiences.

However, self-cognition and behaviors of an individual are readily influenced by emotions and attitudes of others. Hence, the process of interpersonal interaction could form different reference groups. When people consider whether or not to purchase a product, they will evaluate it according to the attitude and value orientations of their reference groups [2]. They will refer to their families and friends, even the people who are never met before. With the rapid development of the "Internet+", the online interpersonal interactions and reference groups have become important influence factors for consumers' purchase intention. Although many scholars have conducted extensive research on interpersonal interactions, reference groups and consumers' purchase intention, they only focused on the on-site service and traditional face-to-face interactions, and there is no conclusive results regarding the influence mechanism of online interpersonal interaction on purchase intention.

Previous studies have shown that the structural equation model based on bootstrap can overcome the shortcoming of Sobel test method in dealing with small sample, and can effectively reduce measuring error. Hayes and Scharkow [3] examines whether the method makes a difference in the conclusion of an investigator, and finds that the bias corrected bootstrap confidence interval is the most trustworthy test if power is of utmost concern.

The purpose of this paper is to explore the influence of the interpersonal interaction factors on purchase intention from the perspective of the online reference groups. The novelty of the research is the identification of the significant factors that affects the purchase intention, and the application of structural equation modeling analysis based on bootstrap to study. This study bridged the research gaps in the social commerce literature. By using the theory of SOR, we propose a research model via WeChat data. In addition, we found the influence mechanism of interpersonal interactions on purchase intention.

Literature review and research hypothesis

The SOR model

The concept of SOR model was originally developed from stimulus response theory. This model describes how individuals respond to external stimuli. Later, the SOR model was improved by incorporating the concept of organism between stimulus and respond by Mehrabian and Russell [4]; the SOR model treats environmental cues as act as stimuli that affect an individual's cognitive and affective reactions, which can affect individual's internal cognitions and emotions, in turn, affect behavior. In social commerce context, stimulus factors include content, network and interaction characteristics. Organism refers to the individual's internal cognitions and emotions state, such as value

perception, social/relational oriented perception and affection. And response includes factors like search, evaluation and purchase, etc.

There are two reasons for the application of the SOR paradigm as a holistic theory. First, many studies applied the SOR model to explore consumers' behavior in online environments. For example, using the SOR framework, Park et al. [5] examined the effects of online social network structure characteristics on network involvement and purchase intention. Liu et al. [6] adopted the SOR model to understand the impact of interpersonal interaction factors and flow experience on purchase intention. Second, the SOR model provides a structural manner to explore the impact of interpersonal interaction factors and customer experiences on purchase intention.

Interpersonal interaction factors as environmental stimuli (S)

Recent research identified three aspects of interpersonal interactions: (1) the first is the theoretical characteristic of spreading interpersonal relationships. Interpersonal communication is the process of self-disclosure, self-presentation, and self-cognition. The three-dimensional theory of interpersonal relationships states that people want to satisfy the need for affection through emotional communication, satisfy the need for inclusion through the exchange of information, and satisfy the need for control through cognitive communication [7]. (2) The second is the characteristic of interpersonal interaction and the psychological needs in the virtual community. The open and inclusive Internet expands the space for interpersonal communication and enhanced the universality and autonomy of human interaction [8]. However, the anonymity of online social interactions has resulted in a lack of trust in interpersonal communication and has alienated emotions. (3) The third is the application of interpersonal communication in marketing. Customer interaction significantly influences product marketing. Bruhn [9] demonstrated that the quality of customer interaction in B2B virtual brand communities has a positive effect on brand loyalty. Customers will consider the reviews of others as an important information source [7]. Positive information obtained through human interaction leads to a greater willingness to purchase a product [10, 11].

Influence of reference group as customer internal states (O)

Hyman [12] believed that people realize their social status by comparing themselves to reference groups and that recognition and judgment are two different attitudes within reference groups. After Hyman's study, the research on reference groups has evolved to many different areas such as education, marketing, and economics and has quickly expanded from real world groups to virtual individuals or groups. Park and Lessig [2] defined reference groups as actual or imaginary individuals or groups that influence the standards for individual evaluations, aspirations, and behaviors. When studying consumer behavior from the perspective of reference groups, Deutsch and Gerard [13] found that the influence mechanism of the reference group on consumer behavior could be divided into informational and normative influence. The former is the reference basis for consumers seeking information from the group and occurs as the result of critical thinking, while the latter refers to the influence of the group members' expectations on consumers' consumption behaviors and occurs as the result of peripheral thinking rather than central routing [14].

Reference group theory has been widely applied in online marketing, especially with the current continuous development of the Internet.

Purchase intention as response (R)

In the social commerce context, a customer is exposed to various interpersonal interaction factors and influence, such as perceived similarity, perceived familiarity, perceived expertise, informational influence and normative influence, which will stimulate consumers to purchase [15]. Further, we found that many studies adopted the SOR model to understand consumers' social commerce intention and purchase intention in social commerce [6]. Therefore, we use purchase intention as response in our research.

Interpersonal interaction factors (S) and influence of reference group (O)

In social commerce, customers tend to interact more with familiar members [15]. They obtain or exchange information more frequently with familiar friends and are influenced easily [16]. Recent research indicates that familiarity with group members contributes to group norms [17]. Group members tend to be influenced more by the norms and values of familiar members than by unfamiliar ones. Therefore, the following hypotheses are proposed:

H1a   Perceived familiarity is positively related to the informational influence.
H1b   Perceived familiarity is positively related to the normative influence.

Similarity-attraction theory shows individuals are attracted by those who are similar to them [18]. Therefore, individuals tend to exchange information with those who have similar values, beliefs or norms [15]. Perceived similarity contributes to the development of close relationships, and will lead to greater levels of social affiliation [19]. From this perspective, individuals tend to be more influenced by the norms and values of similar ones. So, it posits that

H2a   Perceived similarity is positively related to the informational influence.
H2b   Perceived similarity is positively related to the normative influence.

The perceived expertise is also predicted to have a positive effect on informational and normative influence. People seek information from individuals with perceived expertise to reduce risks [20]. Consumer expertise affects the knowledge for a product for choice [21]. The theory of social comparison postulates that people attempt to make a better choice with the help of the others that are better than themselves [22]. Therefore, it is expected that

H3a   Perceived expertise is positively related to the informational influence.
H3b   Perceived expertise is positively related to the normative influence.

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Influence of reference group (O) and purchase intention (R)

Most researches concentrate on the influence mechanism of reference groups on consumer behavior. The influence research of reference groups also identifies two forms of peer influence: normative and informational.

Normative influence is defined as "the tendency to conform to the expectations of others" [23], and has been shown to be positively associated with consumer behaviors of online shopping [24]. Informational influence can be viewed as the pressure to accept information obtained from others as evidence of reality [13]. Accordingly, people who try to find the best choice will make efforts to obtain more information from others. Kuan et al. [25] confirmed that informational influence is as a determining factor of purchase decisions in the online environment. In addition, they find that both informational social influence and normative social influence affect consumers' purchasing decisions in group buying sites [25].

In summary, this paper focuses on the impact of online reference groups on consumers' purchase intention from the aspects of informational and normative influence. Thus, we state the following hypotheses:

H4   Informational influence has a positive effect on consumers' purchase intention.
H5   Normative impact has a positive effect on consumers' purchase intention.

Interpersonal interaction factors (S) and purchase intention (R)

According to the three-dimension theory of interpersonal relation, emotional communication is an important part of group interaction. Groups with matched personality traits are more likely to produce positive and efficient interactions [26, 27]. The interaction behavior between groups will stimulate positive emotions. Therefore, the emotional resonance (i.e., perceived similarity) generated by consumer interactions can positively stimulate purchase intention. The uncertainty of consumer information exchange is relatively high, since it is affected by certain features of the Internet, which makes consumer trust complex and diverse [28]. Frequent intimate and familiar interactions among parties are believed to create stronger mutual trust among consumers. Therefore, strong human interactions (i.e., perceived familiarity) have a positive effect on the consumption behaviors of a group. In addition, as a result of studying information processing and perception communication of group interpersonal interaction, it is found that the expertise displayed by information interaction participants had an effect on the group's purchase intention [29, 30]. The perceived expertise of community members in the context of social commerce had a positive effect on purchase intention by influencing the perceived value of the customer [31].

However,the dimensions of interpersonal communication are not clearly defined. This paper combines the theory and psychological characteristics of interpersonal communication to explore the influence of interpersonal interaction on consumers' purchase intention from the aspects of perceived similarity, perceived familiarity, and perceived expertise.

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H6   Perceived similarity has a positive effect on consumers' purchase intention.

H7   Perceived familiarity has a positive effect on consumers' purchase intention.

H8   Perceived expertise has a positive effect on consumers' purchase intention.

On the Internet, interpersonal interaction stimulates the informational and normative influence of the reference group, reinforces the consumers' convergence into the reference group in behavioral decision-making, and promotes the consumer's purchase intention. On the basis of the aforementioned arguments, we hypothesize the following:

H9   Informational influence mediates the relationship between interpersonal interaction factors and purchase intention.

H10   Normative influence mediates the relationship between interpersonal interaction factors and purchase intention.

Based on the above theoretical analysis, the proposed research model and ten hypotheses are showed in Fig. 1.

Research methodology

Questionnaire design

Questionnaires are devised for collecting responder's psychological responses while occurring to such situation [6]. The measures for normative and informative influences construct adapted from Bearden et al. [32] and Shen et al. [15]. Purchase intention was measured using items adapted from Bai [33]. A revised questionnaire was created after interviewing WeChat users in different social strata, age groups, and genders, taking advices from experts and scholars, and analyzing the content validity of the items. The final questionnaire was formed after small-scale pre-testing that required some items to be deleted and some items to be screened.

The questionnaire used the Likert scales. The responses for the questionnaire items, namely, Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree are coded as "5, 4, 3, 2, 1". Measurement scale items are shown in Table 1.

Data collection

The sample data were mainly derived from college students, with a total of 533 questionnaires issued. After deleting the surveys with invalid or missing data, 490 valid
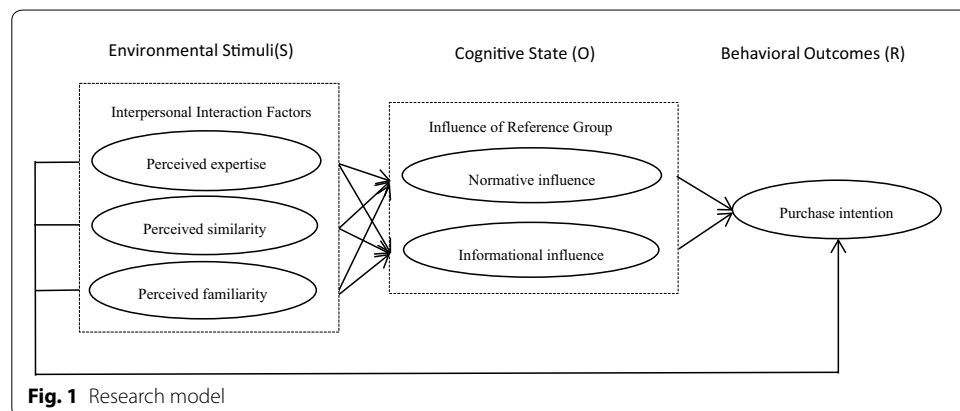

Fig. 1 Research model

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Table 1 Scale design

Construct	Code	Measures	Sources
Perceived expertise	A10_1	Some users in WeChat's Moments are very knowledgeable about many brands or products	Liu et al. [6]
	A10_2	Some users in WeChat's Moments are experts on many brands or products	
	A10_3	Some users in WeChat's Moments are highly experienced in consuming the products	
	A10_4	Compared to other similar social media, WeChat has a lot of information and knowledge about brands or products	
Perceived similarity	A11_1	With regard to the styles in brands or products, I am similar to some users in WeChat's Moments	Liu et al. [6]
	A11_2	With regard to the tastes in brands or products, I am similar to some users in WeChat's Moments	
	A11_3	With regard to my likes and dislikes about brands or products, I am similar to users in WeChat's Moments	
	A11_4	With regard to preferences in brands or products, I am similar to users in WeChat's Moments	
Perceived familiarity	A12_1	Users in WeChat's Moments are as familiar to me as good friends	Liu et al. [6]
	A12_2	I maintain close contacts with users on the WeChat Moments	
	A12_3	I have frequent interactions with other users on the WeChat Moments through commenting or replying behaviors	
	A12_4	I often communicate with users in the WeChat Moments	
Informational influence	A13_1	If I have little experience with a product, I usually ask usersin the WeChat Moments about the product	Bearden et al. [32]; Shen et al. [15]
	A13_2	I often consult other users on the WeChat Moments to help choose the best products	
	A13_3	In order to purchase the right product, I usually observe what other usersof the WeChat Moments are buying and using	
	A13_4	I often collect information from users in the WeChat Moments about a product before I buy it	
Normative influence	A14_1	It is very important to me whether the users in the WeChat Moments like the products and brands I buy	Bearden et al. [32]; Shen et al. [15]
	A14_3	I achieve a sense of belonging by purchasing the same products or brands that other users of the WeChat Moments purchase	
	A14_4	I hope that my friends on the WeChat Moments will like the products I purchase online	
Purchase intention	A15_1	I obtained product information from the WeChat Moments and have purchased the product	Bai et al. [33]
	A15_2	I obtained product information from the WeChat Moments and immediately purchased the product	
	A15_3	I obtained product information from WeChat Moment and might purchase the product in the future	

A14_2 was deleted after pre-testing

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questionnaires were obtained. The demographic characteristics of respondents were as follows: women accounted for 65.8%, and men accounted for 34%; respondents with undergraduate or higher education that were 19 to 24 years old accounted for 94% and 85%, respectively; 60% of the respondents used WeChat more than 1 h per day; 50% of the respondents spent more than 100 RMB per month on WeChat shopping; and approximately 56% of the respondents used WeChat for more than 2 years. The statistics indicated that the respondents had used WeChat for a relatively long time and had rich online shopping experiences. The sample is a representative of the population shopping on the WeChat app.

Data analysis and discussion

Scale reliability and validity test

Cronbach's α values were used to test the reliability of the scale. The value of Cronbach's α in each scale is above 0.9, indicating that the scale items are consistent and that the scale has high reliability. The test results are tabulated in Table 2.

In terms of content validity, after integrating the existing literature, expert validations and pre-test analyses, each scale item reflects the target content representatively. Therefore, the content validity of the scale is considered to be relatively high. In terms of the construct validity, all the items were used to conduct an exploratory factor analysis and demonstrate the structural logic of the scale. The KMO (Kaiser-Meyer-Olkin) value is 0.973. The MSA (Measure of Sample Adequacy) values of the items are all above 0.953, which proves that the scale is suitable for factor analysis. The analysis results are tabulated in Table 3.

After the exploratory factor analysis, six common factors were extracted, of which factor one includes items A12-1 to A12-4 (perceived familiarity), factor two includes A11-1 to A11-4 (perceived similarity), factor three includes A10-1 to A10-4 (perceived expertise), factor four includes A13-1 to A13-4 (informative influence), factor five includes A14-1, A14-3, and A14-4 (normative influence), and factor six includes A15-1 to A15-3 (purchase intention). The results are consistent with the theoretical structure of the scale.

Model fitting analysis

Analysis of moment structures (AMOS) software was applied for the confirmatory factor analysis of the overall model structure. The results of fitting are shown in Fig. 2, in which the values are all normalized estimates. We also used goodness-of-fit to assess the

Table 2 Scale reliability analysis

Construct	Cronbach's α
Perceived expertise	0.943
Perceived similarity	0.967
Perceived familiarity	0.917
Informational influence	0.946
Normative influence	0.932
Purchase intention	0.913

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Table 3 Exploratory factor analysis results

| Code	Component					
	1	2	3	4	5	6
A12_4	.813	.223	.216	.214	.159	.190
A12_2	.799	.205	.233	.216	.179	.117
A12_3	.781	.199	.185	.209	.186	.261
A12_1	.661	.303	.317	.184	.242	.095
A11_3	.301	.746	.327	.275	.199	.240
A11_4	.311	.730	.354	.280	.195	.218
A11_2	.279	.728	.329	.293	.217	.236
A11_1	.278	.723	.322	.234	.277	.231
A10_1	.271	.277	.751	.240	.198	.252
A10_2	.302	.325	.729	.258	.229	.192
A10_3	.291	.314	.723	.296	.146	.205
A10_4	.271	.368	.661	.267	.237	.195
A13_4	.280	.288	.285	.707	.273	.204
A13_2	.267	.308	.287	.705	.223	.238
A13_3	.267	.306	.272	.651	.322	.275
A13_1	.305	.214	.329	.617	.284	.279
A14_1	.317	.249	.263	.309	.708	.202
A14_3	.290	.290	.236	.373	.654	.295
A14_4	.303	.290	.256	.349	.638	.347
A15_1	.280	.274	.261	.304	.256	.723
A15_3	.218	.333	.289	.340	.287	.606
A15_2	.306	.328	.350	.298	.294	.588
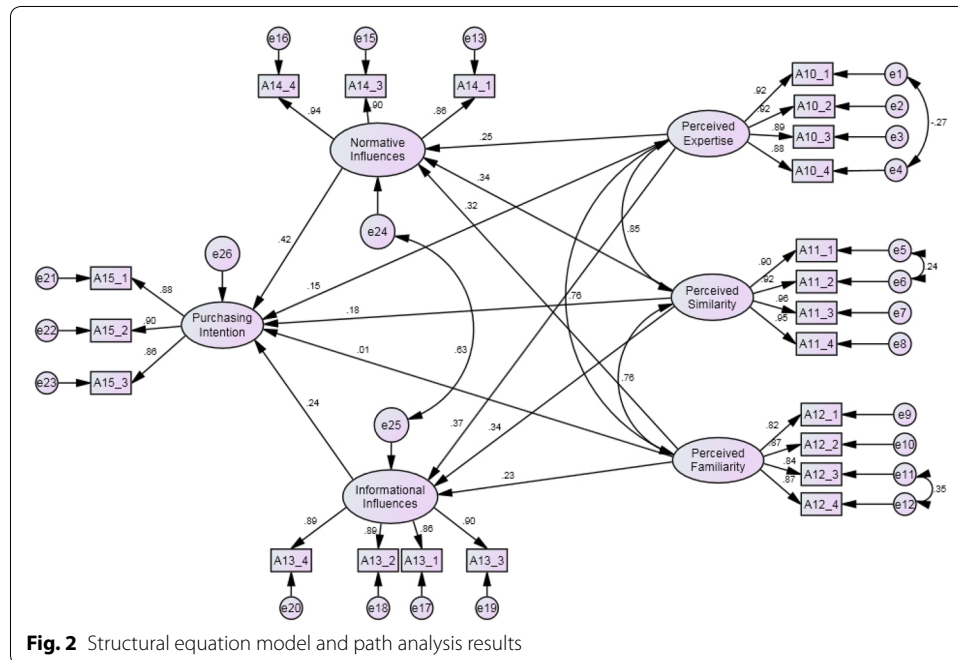
Fig. 2 Structural equation model and path analysis results

Table 4　Overall structure fitting analysis of the model

Fitting Indicator	Ideal range	Indicator value	Fitting result
Chi square /degree of freedom (CMIN/DF)	1–3	1.952	Excellent
Root mean residual (RMR)	< 0.05	0.034	Excellent
Goodness of fit index (GFI)	> 0.9	0.938	Excellent
Adjusted goodness of fit index (AGFI)	> 0.9	0.918	Excellent
Parsimony goodness of fit index (PGFI)	> 0.5	0.712	Excellent
Normed fit index (NFI)	> 0.9	0.973	Excellent
Relative fit index (RFI)	> 0.9	0.968	Excellent
Incremental fit index (IFI)	> 0.9	0.987	Excellent
Tucker Lewis Index (TLI)	> 0.9	0.984	Excellent
Comparative fit index (CFI)	> 0.9	0.987	Excellent
Parsimony adjustment to the NFI (PNFI)	> 0.5	0.809	Excellent
Parsimony adjustment to the CFI (PCFI)	> 0.5	0.820	Excellent
Root mean square error of approximation (RMSEA)	< 0.05	0.042	Excellent

Table 5　Path coefficient estimate results

Path	Estimate	Standard error (S.E)	Critical ratio (C.R)	P value	Standardized estimate
Informational influence ← perceived expertise	.386	.060	6.422	***	.368
Informational influence ← perceived similarity	.356	.059	6.052	***	.338
Informational influence ← perceived familiarity	.248	.051	4.882	***	.230
Normative influence ← perceived expertise	.266	.064	4.186	***	.254
Normative influence ← perceived similarity	.357	.063	5.685	***	.340
Normative influence ← perceived familiarity	.342	.055	6.210	***	.318
Purchase intention ← informational influence	.232	.071	3.251	.001	.237
Purchase intention ← perceived expertise	.159	.054	2.959	.003	.155
Purchase intention ← perceived similarity	.181	.052	3.486	***	.176
Purchase intention ← perceived familiarity	.009	.046	.198	.843	.009
Purchase intention ← normative influence	.407	.066	6.180	***	.416

*** refers to P < 0.001, indicating that the estimate was significant at the level of 0.001

model fitting. From Table 4, the CMIN/DF value is less than 3 at 1.952, indicating that the sample data fit well with the model. In addition, the remaining statistics of the model fitting are in the ideal range, meaning that the model fits well generally.

Mediating effect test

The maximum likelihood method was used to estimate the path coefficients. From Table 5, the path coefficients of perceived expertise and perceived similarity to consumers' purchase intention are significant at the levels of 0.05 and 0.001, respectively; however, the path coefficients of perceived familiarity to purchase intention are not significant. The path coefficients of perceived familiarity, perceived similarity, and perceived expertise to informational influence and normative influence are significant at the level of 0.001 and the coefficients are positive. Therefore, H1a, H1b, H2a, H2b, H3a and H3b are supported. The path coefficient of informational influence and normative influence to purchase intention is significant at the level of 0.001. The significant pathways are shown in Fig. 3.
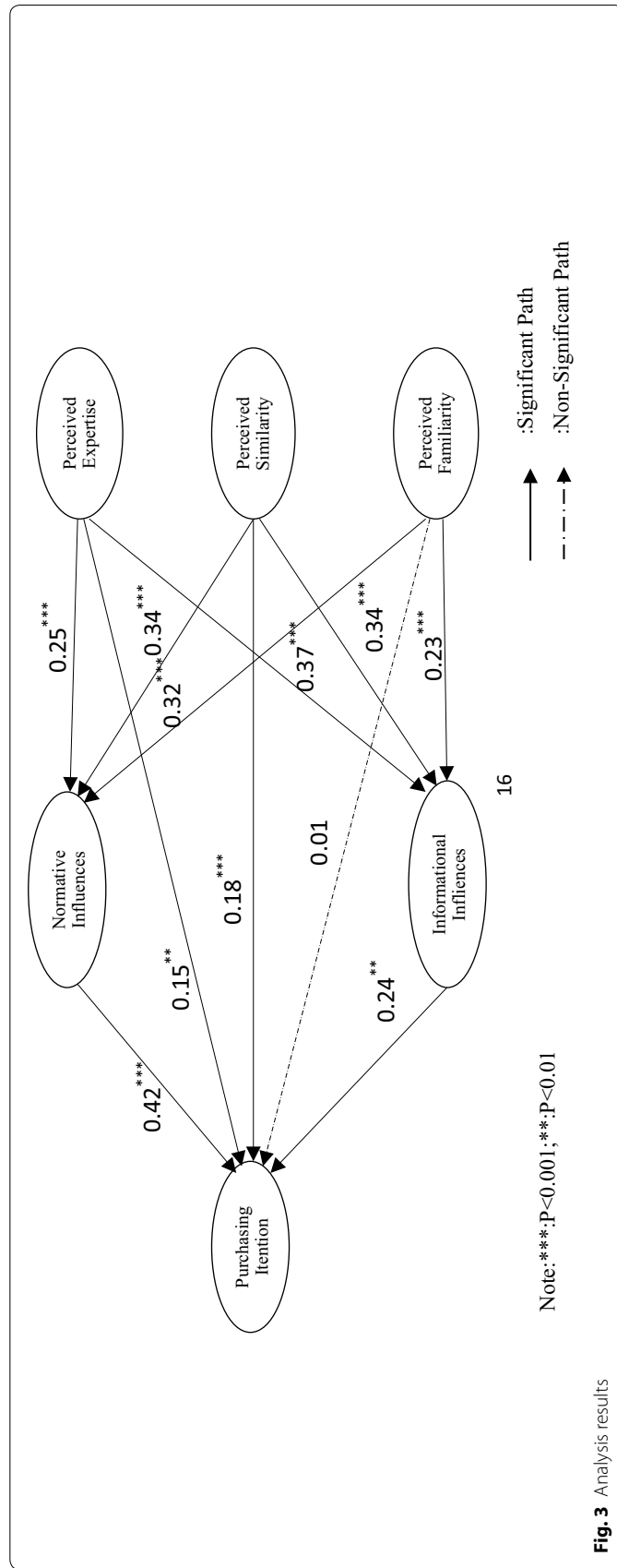
Fig. 3 Analysis results

Table 6 Bootstrap-based overall impact test (n=2000)

Construct	Perceived familiarity	Perceived similarity	Perceived expertise	Normative influence	Informational influence
Normative influence	.318 (.001)	.340 (.001)	.254 (.001)	–	–
Informational influence	.230 (.001)	.338 (.001)	.368 (.001)	–	–
Purchase intention	.195 (.002)	.398 (.001)	.348 (.001)	.416 (.002)	.237 (.057)

Table 7 Bootstrap-based direct impact test (n = 2000)

Construct	Perceived familiarity	Perceived similarity	Perceived expertise
Purchase intention	.009 (.862)	.176 (.004)	.155 (.029)

Table 8 Bootstrap-based indirect impact test (n = 2000)

Construct	Perceived familiarity	Perceived similarity	Perceived expertise
Purchase intention	.187 (0.001)	.222 (0.001)	.193 (0.001)

The mediating effect of the model was tested by adopting the bootstrap method ($n = 2000$). The significance test results of the model's overall impact are shown in Table 6. Perceived similarity, perceived familiarity, and perceived expertise have a significant effect on the purchase intention at the level of 0.001, and the coefficient is positive. Therefore, H6, H7, and H8 are supported. The effects of both the informational influence and the normative influence on purchase intention are significant at the levels of 0.05 and 0.1, respectively, and the coefficients are positive. Therefore, H4 and H5 are supported.

The significance test results of the model's direct impact are shown in Table 7. The direct impact of perceived similarity and perceived expertise on purchase intention is significant at the level of 0.05, and the direct impact of perceived familiarity on purchase intention is not significant.

The significance test results of the model's indirect impact are shown in Table 8. The indirect impact of perceived familiarity, perceived similarity, and perceived expertise on purchase intention are significant at the 0.001 level, and the coefficients are all positive; thus, H9 and H10 are supported.

The analysis of the model fitting results from Table 6 to Table 8 indicates that the normative and informational influence have a mediating effect on the influence of perceived familiarity on the consumer's purchase intention and a partial mediating effect on the influence of perceived similarity and perceived expertise on the purchase intention. The direct impact of perceived similarity on purchase intention is 44% (0.176/0.398), and the indirect impact is 56% (0.222/0.398); the direct impact of perceived professionalism on purchase willingness is 45% (0.155/0.348), and the indirect impact is 55% (0.193/0.348).

Conclusions

Besides providing a new theoretical perspective, this paper analyzes the influence mechanism between online interpersonal interaction and consumers' purchase intention from the perspective of reference groups, which can be viewed as a compensation for the insufficiency in the research of previous scholars.

Theoretical implications

First, concerning normative influence, several hypotheses are tested. Significant relationships are confirmed between perceived familiarity, similarity and expertise to normative influence. Consumers exposed to interpersonal interaction factors, are more susceptible to the impact of perceived similarity. A possible explanation is that the extent to which individuals perceive similarity with referent others who comprise their social group is a key indicator of their identification with the group [34].

Second, perceived familiarity, similarity and expertise also relate significantly and positively to informational influence. However, perceived expertise contributes the most to the informational influence. In other words, informational influence is often easy to be exerted by persons who are perceived as knowledgeable, credible and having expertise.

Meanwhile, our analysis indicates that the three dimensions of human interaction (perceived familiarity, similarity, and expertise) have different influences on consumers' purchase intention, but they all have significant relationships. Perceived familiarity does not directly strengthen consumers' purchase intention. However, it does influence consumers' decisions based on the normative influence and the informational influence of reference groups.

Third, the normative and informational influences have mediating effects on perceived similarity, expertise and purchase intention. Additionally, the indirect impact of perceived similarity on purchase intention is more than direct impact, so does the perceived expertise. The results imply that perceived similarity and expertise bring the normative and informational influences and further increase the intention to purchase. On the one hand, when consumers perceive that others are similar and professional to them, individuals are likely to experience greater levels of personal identification, which in turn makes them conforming to group norms to have purchase intention [35]. On the other hand, personal interaction with similar and professional peers to exchange information can lead to a perception of trust, which in turn facilitates consumers' purchase intention to buy [36].

Managerial implication

According to the empirical results and the existing references, this paper primarily explores how companies stimulate consumers' purchase intention by promoting interpersonal consumer interactions on the Internet and strengthening the reference group influence from the perspective of marketing.

First, this study suggests practitioners to pay attention on the construction of online shopping communities. Individuals who have a strong affinity and emotional resonance should be grouped to strengthen interpersonal interactions, which can increase familiarity and similarity among groups.

Second, practitioners should provide professional shopping guidance in the forms of professional and scientific introductions and articles for marketing. Marketers can build WeChat-based virtual communities and promote communication and learning through the establishment of public WeChat accounts, which will stimulate more consumer behaviors.

Third, the identity and sense of belonging by group members should be strengthened. Consumption can be promoted by exchanging information and group recognition. Marketers can strengthen the after-sales service of goods, satisfy the consumers' after-sales needs, and enhance the recognition of goods or services among group members. Marketers can also encourage consumers to review the products before they purchase, to share experiences and strengthen their sense of belonging to the group, thereby developing informational influence algorithm to promote remote communication [37].

Future research is suggested to apply the proposed SOR model in other marketing settings, and to justify the performance of this study with other methods.

Abbreviations
SOR: stimulus-organism-reaction; AMOS: analysis of moment structures; CMIN/DF: chi square /degree of freedom; RMR: root mean residual; GFI: goodness of fit index; AGFI: adjusted goodness of fit index; PGFI: parsimony goodness of fit index; NFI: normed fit index; RFI: relative fit index; IFI: incremental fit index; TLI: Tucker Lewis Index; CFI: comparative fit index; PNFI: parsimony adjustment to the NFI; PCFI: parsimony adjustment to the CFI; KMO: Kaiser-Meyer-Olkin; S.E: standard error; C.R: critical ratio; MSA: measure of sample adequacy.

Authors' contributions
The authors have contributed significantly to the research work presented of this manuscript. All authors read and approved the final manuscript.

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Competing interests
The authors declare that they have no competing interests.

Availability of data and materials
The datasets used during the current study are available from the corresponding author on reasonable request.

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