

# The path analysis of online interpersonal interaction on purchase intention based on two-factor structure of trust and distrust

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**ABSTRACT:** Compared with technical competence, online interpersonal interaction is a stronger inspiring element, which significantly impacts the purchase intention. Under the influence of the media characteristics of internet, online transactions are riskier with much stronger uncertainty. This makes customer trust more complicated and diversified, which even displays the coexisting situation of trust and distrust, as well as correlation and difference. This research sets out to clarify the measuring dimensions of online interpersonal interaction, explore the two-factor structure of trust and distrust, and further establish the driving approaches from online interpersonal interaction to purchase intention with empirical test. This research conforms to the macroscopical objective of industry structure upgrade of our country as its achieved results can furthermore help enterprises achieve efficient interaction, stimulate loyalty and improve performance.

**Keywords:** online interpersonal interaction; trust; distrust; purchase intention

## 1 INTRODUCTION

Until June 2015, there were 374 million people shopping online in China. Business applications focused on shopping online and group purchase keep developing rapidly, while Brand Company and B2C e-commerce platform have already become the dominant subjects of the market.

Customers might be attracted by websites' technical skills but they were more interested in two-way interaction with enterprises, and it would have a great impact on their attitude towards enterprises and on their behaviour intentions. Online interpersonal interaction, to some degree, means invisibility, asynchronization and non-intimacy would add much more uncertainty and risk to the transaction, making it harder for customer to obtain sense of security and affability, and bad for stirring up customer's desire for purchasing. Therefore, is distrust an opposite side of trust, or a

completely independent concept? How does trust and distrust induced by online interpersonal interaction affect purchase intention? Are their influences different? These are the main questions of this paper.

## 2 LITERATURE REVIEW

### 2.1 *Online interpersonal interaction*

For studies of interaction online, most people focused on the interaction between users and computers in the early days. Later on, from the angle of information spreading, they took Internet as a convenient tool for information transmission and stressed the interaction between users and information. In the recent years, with the constantly deepening of updating and upgrading of technology, scholars have come to realize that Internet is a natural interaction media which is bidirectional, instant and unbounded. They believe that interaction should not only be confined to the

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level of hardware and software properties, but it should also include direct communication between users, and moreover, online interpersonal interaction should be the top-level interaction.

Online interpersonal interaction is a virtual reflection of social interaction, including customer-staff and customer-customer online interaction. Based on the interaction media, such as computer and Internet, technology development needs lower cost and easier maintenance. Though, it is lack of assistant languages, such as timbre, tone and body language, it could across social classes, overcome space-time restriction and broaden participants' social circle. Its anonymity allows customers to express themselves freely and its mysteriousness inspires customers' passion to communicate. Of course, relationships built from this interaction would be fragile and have lower levels of commitment.

## 2.2 Trust and distrust

Studies on trust and online trust are plenty and mature, however, little attention is paid to the opposite conception of trust — distrust. To a great extent, it is the result of a common assumption that the positive prediction of trust must be the negative prediction of distrust, or the positive result of trust must negatively affect the increase of distrust. That's why most scholars take the relationship between trust and distrust as a one-dimensional bipolar conception, just as the both sides of a coin, which is a traditional trust factor opinion. However, if the distrust is of remarkable influence and in a dimension conception different from the trust, the lack of such an important factor will lead to erroneous estimations of customers' behaviours.

The theory of neurosciences shows that trust and distrust are reactions from different cognitive parts of the brain where trust is associated with the caudate nucleus and medial prefrontal cortex, and distrust is associated with amygdaloid nucleus and the right insular lobe cortex<sup>[1]</sup>. The establishment processes of trust and distrust are different, which would bring different behavioural outcomes. People would face both positive and negative emotional experiences. The balance and consistency of perception are temporary, and the individual would not insist on the balance and consistency<sup>[2]</sup>. Therefore, as the contradiction theory emphasizes, attitudes towards positive and negative reaction should not be simplified as a single option, and trust and distrust are probably two coexistent, related and dissimilar perceptions.

## 3 CONCEPTION MODEL AND ASSUMPTION

### 3.1 Dimensions of online interpersonal interaction

According to scholars' empirical research on online interpersonal interaction, this research set the dimen-

sion of customer-staff online interaction for the following aspects:

**Responsiveness.** It is about the bidirectionality, synchronism and responsive capability that customer perceived<sup>[3, 4]</sup>, which is relevant to the speed, intention and correlation that the subsequent response information reacts to the foregoing information.

**Personalization.** It mainly means that staffs receive and actively analyse information about customers' personal characteristics and demands to show care and offer personalized service<sup>[5]</sup>.

**Assurance.** The knowledge and politeness of staffs convince customer that they are competent in their specialized fields<sup>[6]</sup>.

Also, the research set the dimension of customer-customer online interaction for the following aspects:

**Reciprocity.** It means that customers communicate, assist and share with each other on mutually interested information, doubts and comments and so on<sup>[7]</sup>.

**Connection.** It is about the level that customers share helpful information of common concerns about events or values<sup>[8]</sup>.

**Recognition.** Mainly, it refers to the customer perception of the strength of relationship between each other, and their acknowledgement and affirmation of their identity in the group<sup>[9]</sup>.

The sufficient interaction between customers would adjust their expectation of service into a reasonable range, and help enterprises or staffs understand customers' individual needs so that they could offer better service.

*H<sub>1</sub>: Customer-customer online interaction has a significant positive effect on customer-staff online interaction.*

### 3.2 The Driving effect on trust and distrust by online interpersonal interaction

“Interaction” and “trust” are the most important variables in explaining network customer behaviours. Trust could be actively managed and propelled to some extent, which is under the influence of dynamic features of two parties' behaviours during interaction.

As for responsiveness, customers' perception of staffs' prompt feedback and convenient communication could improve their trust; in personalization, staffs' willingness and efforts to offer customized specific service and to satisfy customers' needs could make customers feel care and kindness, thus customers' trust could be established and improved consequently; as for assurance, the degree of specialization service that staffs offered is a key factor to improve customer trust.

*H<sub>2a</sub>: Customer-staff interaction online has a significant positive effect on trust.*

The biggest motivation of customer-customer interaction is to exchange comments on products or services and share their experiences. This kind of in-

Table 1. Valid sample structure description

Gender		Age		Income		Education		Age of shopping-online	
Male	45.38%	Under 18	0.12%	Without income	3.53%	High school or below	1.58%	Less than 1 year	0.24%
Female	54.62%	19-25	18.25%	Under 1000	1.34%	College degree	11.8%	1-2year	4.14%
		26-35	64.36%	1000-2999	8.39%	Bachelor	75.43%	2-3year	13.14%
		36-45	14.11%	3000-4999	28.83%	Above Bachelor	11.19%	3-4year	25.91%
		46-55	2.8%	5000-7999	30.66%			4-5year	21.78%
		Above 56	0.36%	8000-14999	23.97%			Above 5 year	34.79%
				Above 15000	3.28%				

formation exchange mostly begins with one-way information searching, but after sharing the same feeling and better communication, the reciprocity and the connectivity of interaction would have an impact on customer trust. As for the sense of identity, customers' familiarity and identification about the group would have the same influence on customer trust.

*H<sub>3a</sub>: Customer-customer interaction online has a significant positive effect on trust.*

Capacity and kindness of online enterprises are important factors negatively influencing distrust, but these two conceptions are largely determined by staffs. The customization of online service, knowledge and skills, the convenience of interaction and customer-customer communication are negatively correlated with distrust<sup>[10]</sup>. Quality of service, connection and communication and other interpersonal interaction factors have distinct negative influence on distrust.

*H<sub>2b</sub>: Customer-staff interaction online has a significant negative effect on distrust.*

*H<sub>3b</sub>: Customer-customer interaction online has a significant negative effect on distrust.*

### 3.3 Effects of trust and distrust on purchase intention

When shopping online, the higher the customer's trust level is, the stronger the purchase intention would be—trust is remarkable positively correlated with purchase intention. Distrust is separated and negatively correlated with trust; in addition, distrust has distinct negative influence on purchase intention. Moreover, due to the high uncertainty and high risk in the virtual environment, customers are more likely to distrust<sup>[11]</sup>, so distrust could better predict customers' behaviours and has a bigger impact on purchase intention.

*H<sub>4a</sub>: Trust has a significant positive effect on purchase intention.*

*H<sub>4b</sub>: Distrust has a significant negative effect on purchase intention.*

The hypothetical model is shown in Figure 1.

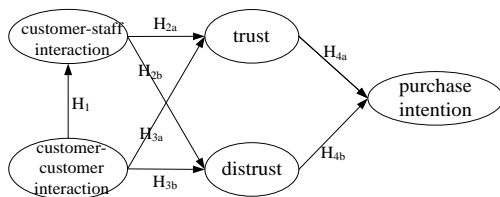


Figure 1. Hypothetical model

## 4 RESEARCH METHODS

There are five constructs, including customer-staff online interaction, customer-customer online interaction, trust, distrust and purchase intention, and all the measuring items are from literature. As for customer-staff online interaction, 5 measurements of responsiveness based on studies of Ruyter et al.<sup>[12]</sup>, 4 measurements of personalization based on the studies of Komiak et al.<sup>[13]</sup>, and 4 measurements of assurance based on Gefen<sup>[6]</sup> were chosen. As for customer-customer online interaction, 4 measurements of reciprocity based on studies of Sulin<sup>[14]</sup> and Wasko & Faraj<sup>[15]</sup>, 3 measurements of connection based on studies of Chiu et al.<sup>[16]</sup>, and 3 measurements of recognition based on studies of Algesheimer et al.<sup>[17]</sup> and Bagozzi & Dholakia<sup>[18]</sup> were chosen. As for trust and distrust, 3 measurements based on studies of Cho<sup>[19]</sup> and Ou & Sia<sup>[20]</sup> were chosen. As for purchase intention, 3 measurements based on studies of Wu et al.<sup>[21]</sup> were chosen. All the measurements are evaluated with 7 point scale, while “1” means totally disagree, “4” means prosaic, and “7” means totally agree.

Users of social e-commerce sites were taken as study subjects, including taobao, mogujie, renren, meilishuo, kaixin001, douban, Vancl, vapee, SMZDM and so on. This research collected surveys on a professional internet survey platform—www.sojump.com. 289 valid questionnaires were collected for pre-investigation, and after that, another 533 valid questionnaires were collected for formal investigation. Structure feature of the total sample is shown in Table 1.

The method of partial least squares (PLS) was applied to test hypotheses path in this research. PLS is a practical second-generation multivariate causal model analysis tool, which is often used in analysing the relationship between the multiple independent variable and dependent variable. This method has an advantage that it does not require large volume of samples or normal distribution of the data, and it could bring a more stable result.

## 5 EMPIRICAL FINDINGS

### 5.1 Pre-investigation

The KMO values of questionnaires were all larger than 0.7. After Bartlett's Test of Sphericity and prin-

Table 2. Questionnaires and exploration data

Dimension	Item	Description	Standard factor loading	$\alpha$
<b>Customer-stuff online interaction</b>				
Responsiveness ICS1	ICS11	Customer Service staff could reply timely.	0.648	0.849
	ICS12	Customer Service staff's replies are highly related to my questions.	0.941	
	ICS13	Customer Service staff are willing and patient to communicate with me.	0.697	
	ICS14	Customer Service staff are willing to help me.	0.675	
Personalization ICS2	ICS21	Customer Service staff care for me according to my personal characteristics.	0.952	0.903
	ICS22	Customer Service staff know my specific demand.	0.770	
	ICS23	Customer Service staff offer me personalized service.	0.905	
	ICS24	Customer Service staff consider my best interests.	0.803	
Assurance ICS3	ICS31	I believe it's safe to contact Customer Service staffs.	0.767	0.821
	ICS32	Customer Service staffs are always polite.	0.901	
	ICS33	Customer Service staffs have sufficient knowledge and ability to solve my problems.	0.726	
<b>Customer-customer online interaction</b>				
Reciprocity ICC1	ICC11	In the social e-commerce site, it's fair and mutual beneficial to help others.	0.772	0.814
	ICC12	When I am in need, I could get kind help from other users.	0.692	
	ICC13	For other users' problem, I will try my best to provide assistance.	0.927	
Connection ICC2	ICC21	I have close relationship with other users on the social e-commerce site.	0.892	0.892
	ICC22	I keep a frequent connection with other users on the social e-commerce site.	0.777	
	ICC23	I often chat with other users on the social e-commerce site for communication and exchange feelings.	0.831	
Recognition ICC3	ICC31	I am an important member of the user community.	0.770	0.847
	ICC32	I treasure the friendship with other users.	0.579	
	ICC33	When other users plan something, I tend to think "what should we do," rather than "how they do it".	0.872	
<b>Trust</b>				
T	T1	The social e-commerce site is reliable.	0.907	0.911
	T2	The social e-commerce site is responsible.	0.942	
	T3	The social e-commerce site would not do anything to loot or harm customers.	0.917	
<b>Distrust</b>				
DT	DT1	The social e-commerce site would take advantage of customers' weakness.	0.859	0.808
	DT2	The social e-commerce site would harm customers' interest for its own benefit.	0.846	
	DT3	The social e-commerce site would interact with customers in a hypocritical and cheating way.	0.852	
<b>Purchase Intention</b>				
PI	PI1	I would consider buying what I need in the social e-commerce site.	0.862	0.763
	PI2	The social e-commerce site is an important way of my shopping online.	0.838	
	PI3	I am willing to have interaction and transaction in the social e-commerce site.	0.803	

ciple component analysis, all the items preferably focused on factors. The Cronbach's  $\alpha$  values were larger than 0.7. All the items were from literature of scholars; all the content was inspected carefully by professionals, and then was pre-investigated and adjusted, to make sure that the design of questionnaire should ensure the correct expression of the question, and items should focus on survey subject and should reflect good validity of the content. Questionnaires and exploration data is shown in Table 2.

### 5.2 Formal testing

After confirmatory factor analysis (see Table 3, 4, 5), both the Cronbach's  $\alpha$  values and construction reliability  $\rho_c$  were larger than 0.7, and both standardized coefficients and AVE value were larger than 0.5, which means that the measure of each factor is valid enough. Totally speaking,  $\chi^2/df$  was less than 3, GFI, AGFI, NFI, IFI and CFI were larger than 0.9, RMR was less than 0.05, RMSEA was less than 0.08, so the model fits quite well.

The result of reliability and validity analysis of each

dimension in the formal testing is nice. Chi-square test was used to further validate the relations between trust and distrust, the correlation coefficient of trust and distrust was -0.80 (see Table 6), which represented a significant negative correlation relationship, showing that trust and distrust are two different concepts.

Table 5. Reliability and validity of formal test

Dimension	$\rho_c$	AVE	$\alpha$
ICS	0.932	0.821	0.891
ICC	0.929	0.813	0.885
T	0.817	0.599	0.663
DT	0.915	0.782	0.861
PI	0.919	0.791	0.868

Table 6. Distinction inspection of trust and distrust

Matching Factor	Unrestricted pattern		Restrict pattern		Difference and conspicuousness of $\chi^2$	$\Delta df$
	$\chi^2$	df	$\chi^2$	df		
T-DT	36.391	8	608.261	9	571.87***	1

According to the result of PLS operation (see Table 7), all of the assumptions are supported. R2 of the four

Table 3. Estimation parameter of customer-stuff online interaction

Factor	Item	Standardized coefficient	T	$\rho_c$	AVE	$\alpha$
Responsiveness ICS1	ICS11	0.787	—	0.9163	0.7325	0.878
	ICS12	0.771	18.944***			
	ICS13	0.819	20.413***			
	ICS14	0.832	20.796***			
Personalization ICS2	ICS21	0.784	—	0.9242	0.7531	0.889
	ICS22	0.822	20.400***			
	ICS23	0.829	20.615***			
	ICS24	0.839	20.928***			
Assurance ICS3	ICS31	0.820	21.247***	0.8946	0.7389	0.822
	ICS32	0.703	17.374***			
	ICS33	0.817	—			
<i>df</i>		41	$\chi^2$	103.454		
$\chi^2/df$		2.523				
GFI		0.965	AGFI	0.944		
NFI		0.974	IFI	0.984		
CFI		0.984	RMR	0.038		
RMSEA		0.054				

Table 4. Estimation parameter of customer-customer online interaction

Factor	Item	Standardized coefficient	T	$\rho_c$	AVE	$\alpha$
Reciprocity ICC1	ICC11	0.769	16.803***	0.8961	0.742	0.825
	ICC12	0.830	17.939***			
	ICC13	0.744	—			
Connection ICC2	ICC21	0.857	24.995***	0.9353	0.8282	0.896
	ICC22	0.877	25.960***			
	ICC23	0.853	—			
Recognition ICC3	ICC31	0.766	16.873***	0.8912	0.7319	0.815
	ICC32	0.834	18.344***			
	ICC33	0.717	—			
<i>df</i>		24	$\chi^2$	70.190		
$\chi^2/df$		2.925				
GFI		0.972	AGFI	0.947		
NFI		0.978	IFI	0.985		
CFI		0.985	RMR	0.032		
RMSEA		0.060				

dependent variables, customer-staff online interaction, trust, distrust and purchase intention were 0.601, 0.570, 0.536 and 0.599, showing that the fit index of the model is quite good.

Table 7. Hypothesis testing

Assumption	Coefficient	T	P	Result
<b>Main effect</b>				
DT→PI	-0.527	11.028	0.000	Acceptance
ICC→DT	-0.350	5.030	0.000	Acceptance
ICC→ICS	0.775	32.940	0.000	Acceptance
ICC→T	0.239	4.165	0.000	Acceptance
ICS→DT	-0.425	5.561	0.000	Acceptance
ICS→T	0.553	10.244	0.000	Acceptance
T→PI	0.324	8.107	0.000	Acceptance
<b>R<sup>2</sup></b>				
DT	0.536			
ICS	0.601			
PI	0.599			
T	0.570			

## 6 CONCLUSION

This research found that trust and distrust are two different concepts, instead of the poles of the same latitude, and have a significant negative correlation

relationship between each other. People should take different strategies to improve trust and reduce distrust. The coexisting, correlative and repellent status of trust and distrust verified the phenomenon emphasized in the cognitive motivation theory that the individual is always trying to maintain an ideal psychological imbalance in the process of cognition.

Trust and distrust play a significant but unsymmetrical influence on purchase intention, while distrust has a greater influence on purchase intention. This phenomenon could be explained by novelty effect and prospect theory. In the “insecure” and “uncertain” circumstance of network and in the unique Chinese “diversity-orderly-structure” trust mode, distrust would be easier to affect the individual’s manner and behaviors, which means that “preventing” and “weakening” distrust should be considered more for the enterprises.

It would be more effective to enhance or inspire trust by improving customer-stuff online interaction, and to reduce or prevent distrust by improving customer-customer online interaction. Besides, sufficient knowledge sharing and emotional support between customers is beneficial for the establishment of reasonable expectations and smooth communication of service.

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