Empirical Study on Influence Factors of Adaption Intention of Online Customized Marketing System in China

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Abstract

This paper studies the influence factors and the influence mechanism which effect adoption intention of online customized marketing system, which is based on TRI model and the theory of resistance to marketing persuasion as the main framework of the research model from two aspects of technical and marketing characteristics. According to empirical study based on 303 Chinese users, we found that the user's optimism, creativity and system inadaptability directly influence on the adoption intention in terms of technology attribution, marketing supply appeal, marketing supply fitness, perceived controlling and perceived pressure influence on the adoption intention in terms of marketing attribute, meanwhile, recommendation fitness are influenced by customized label, customized participation and explanation of recommendation. Marketing supply attractiveness is influenced by product attributes, novelty and form of customized supply. And users' concern about security of system has no significant influence on users' adoption of online customized marketing system. The people at different education are different significantly in their adaption attention. Finally management suggestion for operators was given.

Keywords: TRI model, theory of resistance to marketing persuasion, Marketing supply evaluation, Online customized marketing system, adoption intention

1. Introduction

With the support of mobile computing, Internet of things, Cloud computing and other a series of emerging technologies, the new applications pattern such as social media, collaborative creation, virtual service continued to expand the scope and forms of human creating and using information. So now, global data presents unprecedented explosive growth. After the A.M. Turing award winner Jim Gray put forward the fourth paradigm scientific research--data intensive scientific research which is on the basis of the big data, IT industry take more positive actions, continuing to focus on data reuse and data mining and the application of that was widely carried out in marketing, sales, human resources, e-commerce and other business fields. Big data and data mining technology provide a positive technology environment for enterprises to implement "one to one marketing" and "customized marketing", and then it make possible for enterprises to provide every customer customized services and products to meet their special needs and preferences. Online customized marketing system is born under such circumstances. Companies collect, statistic and analysis all kinds of behavior data and information left behind the user's access to the network (virtual community, instant messaging, webpage and so on), and then use intelligent algorithm to speculate each user's preferences and interests. Thus, companies find the commodity and information which accord with users' personalized preferences in the huge amounts of goods and information, and proceed initiative marketing to truly achieve the accuracy of "one to one marketing" as shown in Figure 1.
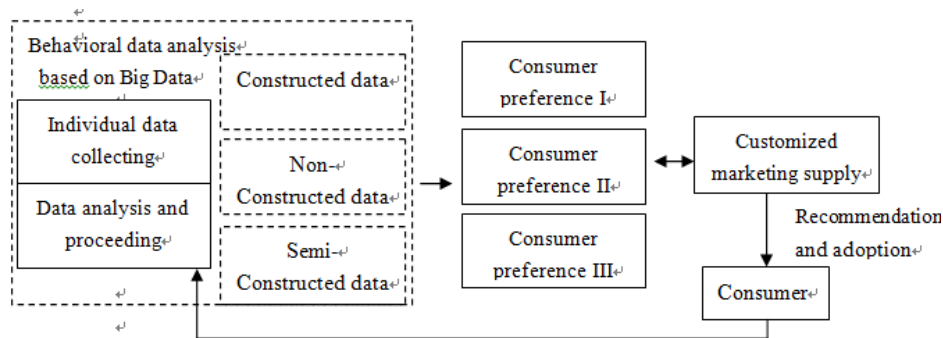
Figure 1. Customized Marketing System Working Principle

Customized marketing system can well meet the customer demand, improve the user experience, the accuracy of the one-to-one marketing and sales performance of enterprises. As the results showed in the research of Bhavik Pathak [1] (2010), online recommendation strength has a positive effect on sales result and at the same time recommendation system strengthens the long tail phenomenon in electronic commerce. R. Eric Hostler [2] (2012) takes Movie Magic system as an example to analyze the influence of recommendation system for product promotion, customer satisfaction and customer loyalty of the web site. Research results show that the recommended systems have obvious effect on improving the promotion, customer satisfaction and loyalty. Muhammad Aljukhadar [3] (2012) present that when consumers perceive information overload, especially making complicated choices, they will be willing to turn to such as a tool like the recommendation system for help. On this occasion, using recommendation system will bring positive impact on the quality of decisions, at the same time recommendation system can also improve consumer confidence of making decisions and interactivity of perception to electronics stores. After e-commerce websites using personalized recommendation, sales can increased by 2% ~ 8%, especially in books, movies, CD audio and video, daily provisions and other industries that product prices are relatively lower and have a wide variety of product . In this case, providing users with personalized recommendation services can greatly improve the sales.

Information technology permeates all aspects of people's life faster and faster, but according to the empirical research and other studies, people's confusion and adaptability for information technology are also on the increase. E-commerce site such as Amazon.com, DangDang.com and TaoBao.com has been to provide different levels of personalized recommendation service. Although the personalized recommendation algorithm is continuous improving and recommendation accuracy has been greatly improved, in practice, many users of personalized recommendation exists negative cognition or lack of adequate adopt motive , so their intention to accept the recommendation is not active as merchants expected. Finding what are the key factors to affect the user adoption is the priority question to improve the online customized system performance and promoting the business services. Komiak [4] (2003) found that interface design based on the demand dialogue can increase the user's trust in the personalized recommendation, thus affecting users to adopt customized marketing system as a decision aid. Ansari [5] (2000) make a comparison between the personalized recommendation based on Bayes' theorem and content filter found that personalized recommendation based on Bayes' theorem has a better user acceptance. Song Hui [6] (2011) makes recommend results accuracy, recommend diversity, user interaction, system interface design, interaction design and recommend explanation as front variables, and make perceived usefulness and ease of use as intermediary variables to analyze the effect of recommendation system .

Related applications and research of online customized marketing system from the technical aspect is gradually maturing, especially in recommendation algorithm, but the research based on the analysis of users' acceptance behavior in the marketing view is less. From the views of the marketing attribution , this study analyzes the users' psychological and behavior characteristics of adoption intention of online customized marketing system based on the analysis of the technical features, and then put forward guidance for enterprises to design and use better online customized marketing system and further successfully carry out one-to-one precise marketing.

2. Related Theories

2.1. Technology Readiness Index Model (TRI)

Information technology permeates all aspects of peoples' life faster and faster, but according to the empirical investigation and other research findings, people's confusion and adaptability for the information technology are also on the increase. People's acceptance of information technology is not as optimistic as the speed of technological development. A. Parasuraman [7] (2000) put forward TRI model based on industry investigation of financial services, electronic commerce and communications. The model analyze users' attitude and tendency of adopting a new technology from two aspects of positive and negative, and points out that attitude will affect the final adoption behavior, the more positive the attitude is, the more likely to be adopted. The model measures people's attitude towards adopting new technology from optimism, innovation, discomfort and insecurity.

According to the research of A. Parasuraman, if one person treat a new technology more optimism and innovative as well as less inadaptability and security concerns, then he will be more likely to use the new technology. In generally, TRI is a framework which concerns specific technology. Different people have different characteristics, so they still have different views on various aspects of the same technology. Thus, TRI reflects that people's a series of opinions of a new technology, rather than the ability of one person to use the technology.

2.2. Resistance to Marketing Persuasion

Scholars have found that when customers seeking value, they become more difficult to tolerant the marketing way they do not like than before. Yankelovich company research report shows that consumer's resistance of marketing activities has reached an unprecedented level and said that they will avoid buying those products being excessive marketed. Psychological resistance theory raised that when people's perception of the freedom is threatened or weakened, they will arouse vigilance and make efforts to rebuild the individual freedom. In the process of reconstruction, people will implement a series of behavior strategy to resist foreign recommendations, such as indifference, rejection, and negative word of mouth, *etc*. In conclusion, people show a "opposite effect" (negative feelings) to response to the forced information [8-10] (Brehm, 2006; White, 2007; Fitzsimons & Lehmann, 2004). Kirmani A, ZhuRJ [11] (2007) found that when salesmen marketing to the users, consumers will activate persuasion knowledge, the higher levels of persuasion knowledge is, the higher the resistance of product is. Scholars studied the activation of consumer marketing persuasion knowledge and put forward that consumers' cognition of persuading motivations ,persuade skill and strategies will affect the persuasion knowledge activation and activation levels.

(1) Consumers' cognition of persuading motivations. Cognition of persuading motivations refers to the consumer judge the motives of marketing information is selfish or altruistic , that is to say the enterprise marketing is in order to provide better service to consumers or just only for their own benefit. Studies find that when users perceive the

persuade information has a strong utilitarian, enterprise maneuverability and fraudulence, users' persuasion knowledge level will be high [11-12], consequently the resistance to marketing supply will become strong (Kirmani & Zhu, 2007; Xie & Boush, 2007)

(2) Consumers' cognitive of marketing skill. That is consumers' response to the enterprise marketing strategy. Feingold & Knapp [13] (1977) put forward if the amount of information of the marketing persuasion is too large, it can make the recipient feel aggression and pressure and may appear the opposite psychological experience, causing consumers resist to such information even to avoid. The expression way and presentation style of marketing persuasion information can also affect the perceived pressure [14]. (Wicklund, 1970). In addition to the form of recommend information itself makes the user has sense of pressure, Edwards [15] (2002) put forward that when the consumer surfing the Internet they usually have a strong purpose. When they receive the products or information out of the scope of the purpose, that is when forced to learn and cognize this information, they may become negative even resistant. But when users make a relatively high evaluation of marketing recommendation supply, they will reduce the level of resistant.

Scholars have also found that user's individual characteristics an also affect marketing persuasion resistance level. Cambell & Kirmani [16] (2000) takes service sales as an empirical example, found that cognitive leisure person uses more persuasion knowledge than the cognitive busy one. Higgins [17] (1997) divides users into aggressive individuals and preventive individuals by the ways they achieve goals, and found that aggressive individuals than preventive individuals enable less persuasion knowledge. Furthermore, scholars have found that people of different ages and genders have significant differences in enabling persuasion knowledge.

2.3. Response to Marketing Offering

Mostly existing research about online customized marketing system is focused on the field of recommendation algorithm, such as content-based recommendations and collaborative filtering recommendations, knowledge-based recommendations, recommendations based on the network structure, combination recommendations and so on. And the initiative intention is to improve the accuracy of recommendation and then to improve users experience. Despite the digital revolution brought by the big data provides a better external environment for enterprise to predict users' demands more precisely and dynamically, consumer behavior scientist consider that there are other factors that affect consumers' evaluation to online marketing supply, in addition to excellent algorithm and machine learning. Dell computers does not design perfect products for the target customers, but provides a platform for target customers, making customers can configure and order personal computer products according to their own preferences. Thus users are involved in the product design and marketing process. Through establishing connections between the users and enterprise products to strengthen the perception of close ties and the corresponding sense of ownership, users increase further satisfaction of the products and services. Simonson [18] (2005) points out that the crucial factors of purchasing customized product are competitive price, Risk return ratio, product type (necessity or luxury goods),perceived fitness and attraction that are moderated by trust from the salesman, preference construction and decision surrounding. The level of evaluation to marketing supply is influenced by perceived fitness, perceived attraction and attribution value [19] (Li Li,2007). The evaluation to recommendation related both recommendation accuracy and recommendation variety [20] (Song Hui, 2013).

3. Research Model

Online customized marketing system is an applied technology generated under the background of big data technology, it can record and collect the large-scale, diversified,

complicated and long-term distributed structured and unstructured data generated by a variety of data source such as online trades, E-mail, the network clicking stream, virtual social network, and other to speculate the interests and preferences of users. And online customized marketing system has also marketing attribution which simulates salesman providing marketing supply and helping customer make purchase choice and finally finish purchase.

According to TRI model, users' attitude and behavior in the process of adopting a new technology will be affected by such factors like discomfort, optimism, innovativeness and insecurity. Online customized marketing system is a kind of new technology, so it is adapted to the model. Detail as following:(1) the system discomfort is when people begin to contact and use online customized marketing system, because of not familiar with interface and so on, users will feel discomfort. This sense of discomfort will hinder people adopting and using the technology actively; (2) Optimism refers to people's positive and optimistic attitude towards online customized marketing system. They believe that online customized marketing system can bring convenience and efficiency to work and life. The more optimistic people is, the more likely to accept the technology; (3) Innovation refers to the ability of people to accept a new technology or information system. That is to say that they will try to use online customization marketing system and adopt the supplied content actively earlier than others; (4) Insecurity. Under the big data technology environment, people's behavior data on the Internet is in the hands of merchants, including shopping habits, friends contact, reading habits and retrieve habit. Even after a large amount of non-private data is collected, it will also expose privacy [20] (Viktor mayer-schonberger, 2013). The threat people are faced with is not only limited to personal privacy divulged, but also many security risks in the process of storage, dispose, transmission and other[21] (Deng-guo Feng, 2014).To prevent privacy disclosure lead to economic and reputation losses, e-business customers will reduce or cancel online participation. So it will restrict the application of online customized marketing system to a certain extent.

When online customization marketing system recommend content to users , according to the theory of resistance to marketing persuasion users adaptation of marketing supply will be influenced by the marketing resistance level. When the user feel the marketing supply that marketing system is providing is not according to their own preferences and interests and not in order to improve service levels, but the enterprise for the sake of their own interests to do a deliberate and an intention of manipulation advertisement form, the consumers will resist marketing supply, thus further resist marketing system[22][23] (Feingold & Knapp, 1977; Wicklund,1970). Study puts forward that when the amount of information of marketing persuasion communication is too large, the expression and present style of information transmitted and so on will cause recipient feel aggression and pressure, appear the opposite psychological experience and induce consumer to resist and avoid such information. Compulsive perception will further increase the users' discomfort of the system.

The higher users' evaluation to the marketing supply is, the more easily to adopt the marketing system. While evaluations of consumers to marketing supply products are influenced by both fitness and attractiveness of the product. To make consumers feel a product conforms to the preference, and the fitness degree of system recommend product is high, system can provide the supply in a way of customized, especially for those consumers who don't have a clear preference or not enough aware of their own preference. If they trust marketers of the one-to-one marketing, "customization" label itself can have a positive impact on the people who perceive fit. If consumers know that customized supply is based on their preferences and participate in the design of the supply actively, the participation is likely to be a strong hint to indicate that supply is in accordance with consumers' preferences. On one hand, the interpretation of the recommend results also can increase the degree of fit for the user. On the other hand, the attractiveness of the

products that online customized marketing system recommended is always influenced by the form of product supply, the novelty of supply and the product properties. If the level of product perceived attractiveness and the perceived fitness is higher, it can also increase customers' confidence in using the technology, and further increase customers' optimism to the system. Based on the analysis above, the following research model is shown in Figure 2:
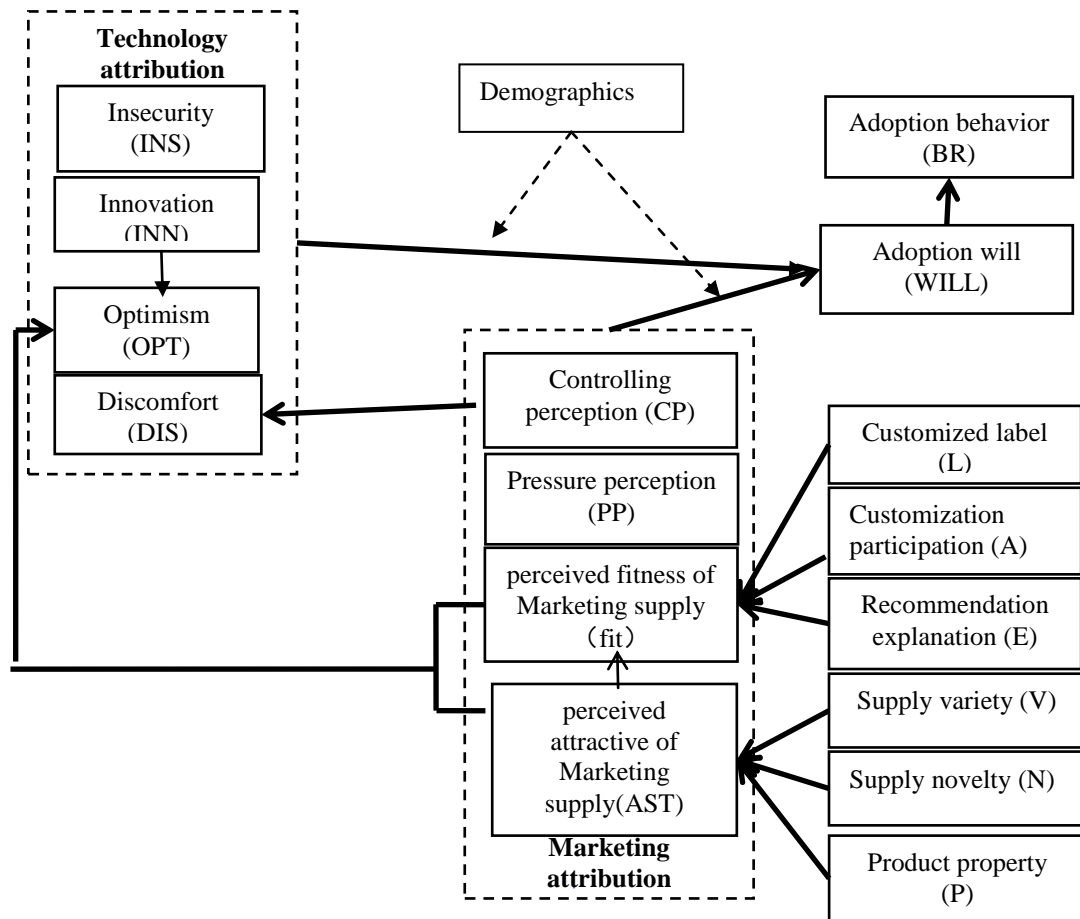
Figure 2. Model of Influence Factors of Online Customized Marketing System Adoption Intention

4. Methodology

4.1 Sample

We randomly selected samples as the research object, using a combination of the online questionnaire, street intercept and operator business hall intercept. In this study 310 questionnaire were sent out in total, and 303 validate ones were called back. The effective recovery rate is 97.74%. Samples are mainly from Beijing, Tianjin, An'hui, Sichuan and Henan in China. The validity of questionnaire are related to two principles: (1) If there are continuous and massive same answers of items in scale emerging in one sample, we consider that this sample is invalid; (2) If on one sample more than 10% of value rates were missed, we consider that this sample is invalid.

In this study gender distribution of samples is: Male accounts for 48.2% and female is 51.8%. For age distribution, samples are mainly composed of 18 to 24 years old which accounts for 83.17%. 25 to 30 years old accounts for 11.22%. The people contact network over 7 years accounts for 39.93%, 4 to 5 years accounts for 25.74%, 2-3 years accounts

for 6.5%, less than 1 year accounts for 1.32%. Online shopping experience is mostly 2-3 years, accounting for 55.45%; 4 to 5 years accounting for 26.07%; the people shop online 1-4 times a month accounts for 63.04%, 5-8 times is 12.21%. When referring to customized marketing system or similar function one, 61.72% respondents mentioned TaoBao.com, 14.53% mentioned Jing Dong .com, 5.3% mentioned Amazon.com, and 12.87% never used.

Overall sample distribution accords with characteristics of customer segment of technology service, the survey has high reliability.

4.2 Analysis of Reliability and Validity

After a pre-survey using the initial scale, based on the reliability and validity analysis, we delete the items that have not reached the minimum reliability and validity standard, and we made the modification to the sentence and the structure in combination to the feedback from the respondents. Then the final formal questionnaire was formed. Finally, the reliability and validity indexes of the final questionnaire are all passed.

Cronbach's α coefficient is used to test scales reliability by software SPSS20.0 in this study, and the result is shown in Table 1. Cronbach's α coefficient in this study are all above 0.6, indicating that the internal consistence of items constituting scales is high and this research scale has good internal reliability.

Table 1. Reliability Analysis Result

Construction	Item	Cronbach'a
Innovation	Q1,Q2,Q3,Q4	0.776
Insecurity	Q5,Q6,Q7,Q8,Q9,Q10,Q11	0.854
Optimism	Q12,Q13,Q14,Q15	0.814
discomfort	Q16,Q17,Q18,Q19,Q63	0.686
Perceived Marketing supply	Q20,Q21,Q22	0.747
Customization label	Q23~Q25	0.753
Customization participation	Q26~Q28	0.819
Recommendation explanation	Q29~Q31	0.704
Recommendation attractive	Q32.Q33.Q34	0.787
Recommendation	Q35~Q37	0.707
recommendation novelty	Q38~Q40	0.770
Recommendation product property	Q41~Q43	0.772
Perceived Controlling	Q44.Q45.Q46	0.786
Perceived pressure	Q47.Q48.Q49.Q50	0.783
Adoption will	Q51~Q55	0.804
Adoption behavior	Q56~Q58	0.779

The measurement subject chosen for this study has been formed by referring to the scholars' mature scales in a large amount of reading literature and also considering the features of mobile payment service. Therefore, the constructed variables of this study have better content validity. And the premise of Cronbach's a coefficient measuring the reliability of questionnaire is that all the dependent variable and the independent variable are completely related, but this relationship is a kind of ideal state and it is difficult to reach in the actual research. In order to make up for the defect, based on Cronbach's a, this study uses the measurement model of structural equation model (SEM) by AMOS software to test the reliability of individual item reliability (2), potential variable component reliability (CR) and the average variance extracted (AVE).The higher the index of the three measures is, the better variable reliability and convergent validity are. The specific criteria are that the minimum acceptable level is more than 0.55 (Hair *et al,* 2006), CR is more than 0.6 (Bagozzi & Yi, 1988), AVE is more than 0.5 (Hair *et al*, 2006) the results is in the following Table 3.

Table 2. Parameter of Measurement Model

Construction	Item	Factors loading(λ)	Individual item reliability(λ^2)	Measurement error	CR	AVE
Innovation	Q1	0.654	0.428	0.572	0.779	0.469
	Q2	0.649	0.421	0.579		
	Q3	0.76	0.578	0.422		
	Q4	0.67	0.449	0.551		
Insecurity	Q5	0.607	0.368	0.632	0.766	0.452
	Q6	0.619	0.383	0.617		
	Q7	0.754	0.569	0.431		
	Q8	0.699	0.489	0.511		
Optimism	Q12	0.792	0.627	0.373	0.816	0.527
	Q13	0.662	0.438	0.562		
	Q14	0.731	0.534	0.466		
	Q15	0.714	0.510	0.490		
Discomfort	Q16	0.724	0.524	0.476	0.678	0.415
	Q18	0.592	0.350	0.650		
	Q19	0.608	0.370	0.630		
Perceived recommendation fitness	Q20	0.648	0.420	0.580	0.75	0.5
	Q21	0.75	0.563	0.438		
	Q22	0.721	0.520	0.480		
Perceived recommendation attractive	Q32	0.788	0.621	0.379	0.785	0.55
	Q33	0.715	0.511	0.489		
	Q34	0.718	0.516	0.484		
Perceived controlling	Q44	0.729	0.531	0.469	0.789	0.556
	Q45	0.806	0.650	0.350		
	Q46	0.697	0.486	0.514		
Perceived pressure	Q47	0.748	0.560	0.440	0.745	0.495
	Q48	0.747	0.558	0.442		
	Q50	0.607	0.368	0.632		
Adoption will	Q51	0.681	0.464	0.536	0.692	0.429
	Q52	0.616	0.379	0.621		
	Q55	0.666	0.444	0.556		
Adoption behavior	Q56	0.779	0.607	0.393	0.781	0.544
	Q57	0.766	0.587	0.413		
	Q58	0.663	0.440	0.560		
Customization label	Q23	0.72	0.518	0.482	0.755	0.508
	Q24	0.638	0.407	0.593		
	Q25	0.774	0.599	0.401		
Customization participation	Q26	0.796	0.634	0.366	0.827	0.615
	Q27	0.836	0.699	0.301		
	Q28	0.715	0.511	0.489		
Recommendation explanation	Q29	0.656	0.430	0.570	0.725	0.47
	Q30	0.76	0.578	0.422		
	Q31	0.632	0.399	0.601		
Recommendation variety	Q35	0.708	0.501	0.499	0.782	0.545
	Q36	0.788	0.621	0.379		
	Q37	0.715	0.511	0.489		
Recommendation novelty	Q38	0.718	0.516	0.484	0.773	0.531
	Q39	0.73	0.533	0.467		
	Q40	0.738	0.545	0.455		
Recommendation product property	Q41	0.76	0.578	0.422	0.778	0.54
	Q42	0.787	0.619	0.381		
	Q43	0.651	0.424	0.576		

Fitting index：χ^2/df=1.787; p=0.000 ;RMSEA=0.051; GFI=0.928 ; AGFI=0.977;CFI=0.881;NFI=0.945

4.3 Parameter Estimation

This study used AMOS20.0 software to estimate parameter value for mobile payment integration model. Result is shown in Table 3.

Table 3. Path Parameter Estimation

No	Hypothesis			Standard path value	S.E.	C.R.	P	Whether to support the hypothesis
H1	AST	<---	V	.0.02	.087	8.044	***	Y
H2	AST	<---	P	.812	.102	3.465	***	Y
H3	AST	<---	N	.744	.121	1.137	.014	Y
H4	FIT	<---	AST	.464	.097	4.937	***	Y
H5	FIT	<---	L	.560	.110	3.064	***	Y
H6	FIT	<---	A	.314	.073	.125	.030	Y
H7	FIT	<---	E	.143	.099	.239	.011	Y
H8	OPT	<---	INN	.249	.061	3.367	***	Y
H9	OPT	<---	FIT	.324	.153	6.022	***	Y
H10	DIS	<---	CP	.628	.086	6.769	***	Y
H11	OPT	<---	AST	.402	.093	4.694	***	Y
H12	WILL	<---	INN	.174	.055	2.253	.024	Y
H13	WILL	<---	INS	-.041	.046	-.627	.530	N
H14	WILL	<---	OPT	.085	.099	1.035	.006	Y
H16	WILL	<---	DIS	-.303	.097	2.691	.007	Y
H17	WILL	<---	FIT	.061	.170	.316	.042	Y
H18	WILL	<---	AST	.688	.111	5.303	***	Y
H19	WILL	<---	CP	-.089	.150	-.474	.035	Y
H20	WILL	<---	PP	-.081	.183	-.380	.044	Y
H21	BR	<---	WILL	.841	.175	6.837	***	Y

Fitting index：χ^2/df=2.715 p=0.000 RMSEA=0.062 GFI=0.839 AGFI=0.809 CFI=0.858 FI=0.989

4.4 Effect of Demographic Variables on Online Customized Marketing System Adoption Intention

In this study, the population mean T test and the AVON variance analysis were adopted to analyze different influence of three demographic variables namely gender, education and age on adoption intention of online customized marketing system as detailed below.

4.4.1. Effect of Gender Variable on Purchase Intention: The Table 4 gives the mean test result of two gender-oriented independent-sample T tests for online customized marketing system. In the homogeneity test of variance, p=0.331(greater than the significance level a=0.05), meaning that the variance is homogeneous. In the two-sided test, p=0.511 (greater than the significance level a=0.05), meaning that there is no significant difference between male and female in terms of their willingness to e-purchase through the online customized marketing system.

Table 4.T-Test of Gender Variable

		F	Sig.	t	Df	Sig. (2-tailed)	95% Confidence Interval	
							Upper	Lower
Adoption intention	Equal variances assumed	.949	.331	.658	301	.511	.-11866	.2379
	Equal variances not assumed			.657	295.894	.512	-.11905	.2379

4.4.2 Effect of Education Variable on Purchase Intention: For the age variable, the F test in the one-way analysis of variance is adopted, as shown in Table 5 and 6. In the homogeneity test of variance, p=0.622 (greater than the significance level a=0.05), meaning that the variance is homogeneous. In the significance test of difference, p is lower than the significance level a, indicating that people at different education have different willingness to e-purchase through the online customized marketing system.

Table 5. Test of Homogeneity of Variance

Levene Statistic	df1	df2	Sig.
.703	5	820	.622

Table 6. ANOVA of Education

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.886	3	1.295	3.261	.000
Within Groups	129.857	299	.434		
Total	133.743	302			

4.4.3 Effect of Age Variable on Adoption Intention: For the income variable, the F test in the one-way analysis of variance is adopted, as shown in the Tables 7 and 8. In the homogeneity test of variance, p=0. 357 (greater than the significance level a=0.05), meaning that the variance is homogeneous. In the significance test of difference, p is higher than the significance level a (0.05), meaning that the people at different income segments have no different willingness to use the online customized marketing system.

Tables 7. Test of Homogeneity of Variance

Levene Statistic	df1	df2	Sig.
.703	5	820	.357

Table 8. ANOVA of Age

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.477	4	.619	0.999	.409
Within Groups	184.780	298	.620		
Total	187.257	302			

5. Conclusion and Management Suggestion

From two aspects of technical attribution and marketing attribution, the study analyses the influence factors and the acting mechanism affecting the user to adopt the online

customized marketing system based on related marketing theory and theory of adoption to a new technology . It can enrich the past research based on the technical characteristics.

The result of study shows both the technical attribution and marketing attribution affects adoption of online customized marketing system. The factors directly influencing the consumer's willingness to use customized marketing system in terms of technology attribution are ranked as follows according to their influence: optimism, creativity and discomfort of systems. The factors influences in terms of marketing attribution are ranked as follows: attraction of marketing supply, fitness of marketing supply, perceived controlling, perceived pressure. The stronger users feel the pressure when using the online customized recommendation system ,the stronger is the discomfort to the system. The fitness and attraction of marketing supply can affect the user's optimism, and thus indirectly affect user's adoption will. The recommendation fitness of the customized marketing system is affected by customized labels, customized degree of involvement and explanation of recommended results, and its degree of influence order is customized labels, interpretation of recommended results and customized degree of involvement. The factors influencing recommendation attractive are ranked as follows: customized supply product attributes, supply novelty and recommendation form. Among the population demographic variables, there are significantly different to adopt its recommendation system from the different educational levels. In this study, the effect of system insecurity on adoption intention is not significantly difference. In China the user's privacy concern on the Internet is not high.

The ultimate aim of studying the factors that influence Chinese consumer's online customized marketing system and the acting mechanism of these factors is to explore how to enhance the willingness of Chinese consumers using customized marketing system in the view of e-commerce operator. Therefore, based on the above analysis, this study has made the following suggestions from the e-business operator's perspective:

(1) Increase the interaction between users and customized marketing system. Obtaining the users' preference data in preliminary stage is not only by the implicit way with the big data technology , but also combine the explicit way to allow users to actively participate in the customization process, meanwhile make the users can effectively express their preferences to the system. The company does not only design the perfect product but provide a platform for the target customers, which allows customers to configure and order personalized products according to their own preferences. Participation in design and marketing of the product can establish strong tie between customer and customized product and corresponding sense of ownership and increase their sense of customization, thus increasing users' satisfaction to the recommended customized goods and services.

(2) Increase transparency of recommendation. The purpose of customized marketing system is to help users to easily find what their preference, not to look for products, thus giving users an extra surprise. Knowing clearly the reason why the product is recommended can improve the users' credibility judgments on the "surprise", thus increasing users' confidence in the system and then improving users' loyalty to the recommended system. By telling the user specific reason why commodities are recommended, it can reduce the users' feeling of being controlled, thereby improve highly users' trust to customized marketing system.

(3)Increase diversity and novelty of recommendation. The existing online recommendation system can speculate users' interests and preferences based on users' preference data, so that recommended goods and services can be as much as possible consistent with users' preferences. But the customized marketing system with a high accuracy rate of customer preference does not guarantee that the user is satisfied with the recommended result because of ignoring tiredness when users use similar conventional products conforming to their preference in the long-term and the demand for fresh products and product diversity. Therefore recommendation algorithm and results should be increased the diversity and novelty of the result and form when presented.

(4).Reduce resistance of recommendation of the online marketing system. Aggressive, direct way of expression and information is easy to stimulate the user's resistance, and therefore the recommended information interface design of customized marketing system should be simple, and the amount of information presented should not be too much, consequently reduce the users' resistance to marketing persuasion that is generated by perceived pressure

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References

[1] Bhavik P., Robert G., Ram D. G., Rajkumar V., Fang Y., "Empirical Analysis of the Impact of Recommender Systems on Sales," Journal of Management Information Systems, vol. 27 no. 2, **(2010)**, pp. 159–188.

[2] Victoria Y. Y., R. Eric, Hostler B., Zhiling G., Tor G., "Assessing the moderating effect of consumer product knowledge and online shopping experience on using recommendation agents for customer loyalty," Decision Support Systems, no. 55, **(2013)**, pp. 883–893.

[3] Muhammad A., "Using Recommendation Agents to Cope with Information Overload," International Journal of Electronic Commerce, no. 5, **(2012)**, pp. 110-124.

[4] Komiak S. S., "The impact of internalization and familiarity on trust and adoption of recommendation agents," The University of British Columbia(Canada), **(2003)**.

[5] Ansari A., Essegaier S. and Kohli. R., "Internet recommendation systems," Journal of marketing, vol. 37 no. 3, **(2000)**, pp. 363-375.

[6] Song H., "The Adoption Factors of E-commerce Recommendation System," Harbin Institute of Technology, **(2011)**.

[7] A. Parasuraman, "Technology Readiness Index (Tri): A Multiple-Item Scale to Measure Readiness to Embrace New Technologies," Journal of Service Research, no. 2, **(2000)**, pp. 307-320.

[8] Miron A. M. and Brehm J. W., "Reactance theory: 40 years later," Zietzchrift for Social psychology, vol. 37 no. 1, **(2006)**, pp. 9-18.

[9] White K. and Dahl D. W., "To Be or Not Be? The Influence of Dissociative Reference Groups on Consumer Preferences," Journal of Consumer Psychology, vol. 16 no. 4, **(2006)**, pp. 404-414.

[10] Fitzsimons G. J. and Lehmann D. R., "Reactance to Recommendations: When Unsolicited Advice Yields Contrary Responses," Marketing Science, vol. 23 no. 1, **(2004)**, pp. 82-94.

[11] Kirmani A. and Campbell M. C., "Goal seeker and persuasion sentry : How consumer targets respond to interpersonal marketing persuasion," Journal of Consumer Research, no. 21, **(2004)**, pp. 573 – 582.

[12] Xie G. X., Boush D. M. and Boerstler C. N., "Consumer response to marketplace deception: Implication of the persuasion knowledge model," Advances in Consumer Research, vol. 34, **(2007)**, pp. 406 - 407.

[13] Feingold K., "Anti - drug abuse commercial," Journal of communication, vol. 27 no. 4, **(1977)**, pp. 20-28.

[14] Wicklund R. A., "Pre-choice Preference Reversal as a Result of Threat to Decision Freedom," Journal of Personality and Social Psychology, vol. 14 no. 1, **(1970)**, pp. 8-17.

[15] Edwards, "Promotion Reactance: The Role of Effort Reward Congruity," Journal of Consumer Research, vol. 31 no. 3, **(2002)**, pp. 725-738.

[16] Campbell M. C. and Kirmani A., "Consumers' use of persuasion knowledge: The effect s of accessibility and cognitive capacity on perceptions of an influence agent," Journal of Consumer Research, no. 27, **(2000)**, pp. 69-83.

[17] Higgins E. T., "Beyond pleasure and pain," American Psychologist, vol. 52 no. 12, **(1997)**, pp. 1280-1300.

[18] Itamar S., "Determinants of Customers' Responses to Customized Offers: Conceptual Framework and Research Propositions," Journal of Marketing, no. 1, **(2005)**.

[19] Li L., "Respond to customized marketing and implication to corporation," Journal of Xiangtan University (Philosophy and Social Sciences), no. 11, **(2007)**, pp. 92-97.

[20] Viktor M. S. and Kenneth N. C., "Big Data: A Revolution That Will Transform How We Live, Work, and Think," Boston: Houghton Mifflin Harcourt Publishing Company, **(2013)**.

[21] Yang B. and Feng D., "Research on Direct Anonymous Attestation Scheme Based on Trusted Mobile Platform," Journal of Computer Research and Development, no. 5, **(2014)**, pp. 1436-1445.

[22] Feingold K., "Anti-drug abuse commercial," Journal of communication, vol. 27 no. 4, **(1977)**, pp. 20-28.

[23]   Mona A. C. and Robert A., "Wicklund. Consumer Behavior and Psychological Reactance," Journal of Consumer Research, no. 6, **(1980)**, pp. 389-406.

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