Summer 5-26-2017

An Empirical Study of Customer Satisfaction and Loyalty on Health Websites

Xicheng Liu
School of Medicine and Health management, Huazhong University of Science & Technology, Wuhan, 430030, China

Yanan Yao
School of Medicine and Health management, Huazhong University of Science & Technology, Wuhan, 430030, China

Zhaohua Deng
School of Medicine and Health management, Huazhong University of Science & Technology, Wuhan, 430030, China, zh-deng@hust.edu.cn

Follow this and additional works at: http://aisel.aisnet.org/whiceb2017

An Empirical Study of Customer Satisfaction and Loyalty

on Health Websites

Xicheng Liu, Zhaohua Deng, Yanan Yao*

School of Medicine and Health management, Huazhong University of Science & Technology,
Wuhan, 430030, China

Abstract: Numerous health websites are developing rapidly in China and the competition is fierce between these websites. In order to win the competition, the websites operators need to satisfy their customers to attain more market shares. But few attention has been paid to factors affecting customer satisfaction and loyalty on these websites. As a result, the paper aims to empirically explore the factors affecting customer satisfaction and loyalty on health websites based on perceived service quality (responsiveness, empathy and reliability), perceived risk (financial risk and time risk) and trust, and then to propose some targeted measures. A survey was conducted to collect data by means of questionnaires, and a total of 231 usable responses were gathered. Then the hypothesis model was tested using the Structural Equation Modeling(SEM). Results revealed that responsiveness, empathy, time risk and trust had significant impacts on customer satisfaction, whereas reliability and financial risk showed no effects on customer satisfaction. In addition, customer satisfaction and trust significantly influenced customer loyalty. The implications and limitations were discussed .

Keywords: Customer satisfaction, Customer loyalty, Health websites, Perceived risk, Perceived service quality, Trust

1. INTRODUCTION

Searching for health information or services through the Internet has become a common phenomenon [1]. In the light of the statistics reported by the China Internet Network Information Center (CNNIC), by the end of 2015, more than 152 million users commonly use the Internet to search for health information or services, which account for 22.1% of the Internet users [2]. Health websites are primary channels for searching for those information or services in the Internet because of their authority and comprehensiveness where people can safely get and use reliable health resources. The great number of health consumers in the Internet indicates a tremendous demand for health information or services via health websites. These websites are utilized for providing health-related information and services for health consumers, and offering medical literature and communication platform to professionals, which include e-knowledge, e-business and e-professional [3]. A health consumer is able to get information about symptoms, obtain a possible diagnosis, or make an appointment with physicians by means of these websites [4].

At present, numerous health websites are developing rapidly in China. Some of them possess tens of million of users, such as the Haodaifu(http://www.haodf.com/) and the Xunyiwenyao(http://www.xywy.com/). The competition is fierce among these websites which provide similar health information or services [5]. These websites operators are all endeavoring to attract more users to attain more market shares. In order to win the competition, these websites operators are forced to turn to solutions for gaining satisfaction and loyalty of customers [6]. Accordingly, it is very essential to understand factors affecting customer satisfaction and loyalty and then take targeted measures. However, previous studies have mainly focused on the evaluation of theses websites [7], as well as emerging problems of them [8]. Little attention has been paid to factors influencing customer satisfaction or loyalty in the health websites context in China. Consequently, this paper intended to identify those factors based relevant researches and tested them By meas of empirical research.

---

* Corresponding author. Email:zh-deng@hust.edu.cn (Zhaohua Deng)

Researchers suggested that perceived risk is considered as an important factor that affects customer intentions and behaviors [9]. Considering that customers' intentions and behaviors reflect their satisfaction or loyalty, thus the perceived risk is recognized as a possible factor affecting customer satisfaction or loyalty on health websites. Moreover, Yang and Fang [10]emphasized that some online service quality dimensions (such as responsiveness and reliability) can result in satisfaction, and perceived service quality are regarded as a driver of customer satisfaction [11], thereby we think this relationship may also exists in the health websites context. Besides, trust is found to be positively correlated with satisfaction [12], and higher level of trust can bring higher customer loyalty to an e-service provider [13]. Consequently, trust is thought as a predictor of customer satisfaction and loyalty. All in all, there are many factors affecting customer satisfaction and loyalty and there may be some complex relationships between them. We determined to use the Structural Equation Modeling (SEM) to analyze the relationships. SEM is a multivariate statistical technique that combines factor analysis and path analysis, and its advantage lies in the quantitative study of the interaction between multiple variables. Given related theories in above researches, this paper presented a hypothesis model of customer satisfaction and loyalty toward health websites based on perceived service quality, perceived risk and trust.

2.   THEORETICAL REVIEW AND HYPOTHESES DEVELOPMENT

2.1 Customer satisfaction and loyalty

Kotler [14]defined customer satisfaction as: "a person's feelings of pleasure or disappointment resulting from comparing a product's perceived performance (or outcome) with his or her expectations". Once a user is satisfied, he or she may perform repeated behaviors [15]. In order to maintain good development of health websites, it is necessary to achieve long-term customer satisfaction, that is to say, to form customer loyalty. Customer loyalty refers to the commitment held by customers that they are going to re-buy or re-patronize a product or service for which they have strong preference, and it is quiet difficult to switch to other replaceable ones [16]. In this study, customer satisfaction refers to an emotional reaction and subsequent holistic evaluation to those websites after using services provided by them, and customer loyalty is considered as cumulative preference for those websites, which can generate continuous or repeated usage behaviors. In general, customer satisfaction is regarded as the prerequisite for customer loyalty, and a satisfied customer tends to keep in touch with a business [17]. What's more, Fang et al [18]also found that customer satisfaction has a direct and positive effect on loyalty, thereby the following hypothesis is proposed:

H1: Customer satisfaction has a positive effect on customer loyalty.

2.2 Perceived service quality

Perceived service quality is a kind of attitude held by customers which arises from comparing their expectations with perceptions of performance, which is connected but not equal to satisfaction [19]. Since the 1980s, researchers have proposed a number of measurement models for service quality. The SERVQUAL model proposed by Parasuraman et al [19]in 1988 is widely known, which can be summarized that the service quality is the difference between the customers' expectations and perceptions. Customer's perception is decided by actual experience, yet the customer's expectation is determined basically by their past experience and personal needs, and word-of-mouth communications with others [20]. As suggested by the lai [21], service quality in the SERVQUAL model includes five dimensions: reliability, tangibles, responsiveness, assurance and empathy. Tangible is defined as physical facilities and appearance of the staff, and assurance refers to the knowledge and kindness of employees and their competence to stimulate customers' trust and confidence.

In the health websites setting, customers can not perceive tangible and assurance directly and the two dimensions may have slight influence on customer satisfaction. Therefore, the other three dimensions including reliability, responsiveness, and empathy of perceived service quality are considered in this study. Reliability is

considered as the ability of health websites to fulfil the promised services reliably and accurately. Empathy refers to good feeling and personalized attention provided by health websites. Responsiveness means that health websites would like to help customers and offer timely services. Several empirical researches confirmed that a higher level of customer satisfaction results from a higher level of service quality [22]. Moreover, Lin and Wang [23]suggested that perceived e-service quality positively affects customer satisfaction. Thus, the following hypotheses are proposed:

　　H2a: Reliability has a positive effect on customer satisfaction.

　　H2b: Responsiveness has a positive effect on customer satisfaction.

　　H2c: Empathy has a positive effect on customer satisfaction.

2.3 Perceived Risk

Perceived risk can be defined as the customer's perception of the shortage of trust and potential adverse effects when purchasing goods or services[24], and it consists of financial risk , social risk, time risk, performance risk, psychological risk and physical risk [25]. In recent years, financial risk and time risk become primary consideration for customers to take action. Consequently, we study the two dimensions of perceived risk. In the case of health websites, financial risk refers to the financial losses caused by emerging problems in the process of online payment, and time risk is considered as the time loss of consumer because of their unskilled operating skills and unfamiliarity with information distribution. Pavlou [12]argued that perceived risk significantly affects consumer behaviors. Additionally, the higher the customer perceived risk, the lower the customer satisfaction [26], thus the following hypotheses are proposed:

　　H3a: Financial risk has a negative effect on customer satisfaction.

　　H3b: Time risk has a negative effect on customer satisfaction.

2.4 Trust

Trust refers to the consumer's expectation that the service provider is reliable and capable to meet its commitment [27]. In this study, trust is considered as perceiving the information or services provided by these websites as credible. It is primarily influenced by the transparency of health services and the authenticity of health-related information. Researchers found that trust affects satisfaction in the long term [28]. When a customer has faith in a service provider, his or her satisfaction will be increased over time [29]. In addition, Kassim and Abdullah [30]stated that when a customer trusts a service provider, he or she will be likely to enhance satisfaction and loyalty. Considering the foregoing discussion, the following hypotheses are proposed:

　　H4: Trust has a positive effect on customer satisfaction.

　　H5: Trust has a positive effect on customer loyalty.

　　Based on the hypotheses above ,this study establishes a research model, as shown in Figure 1.
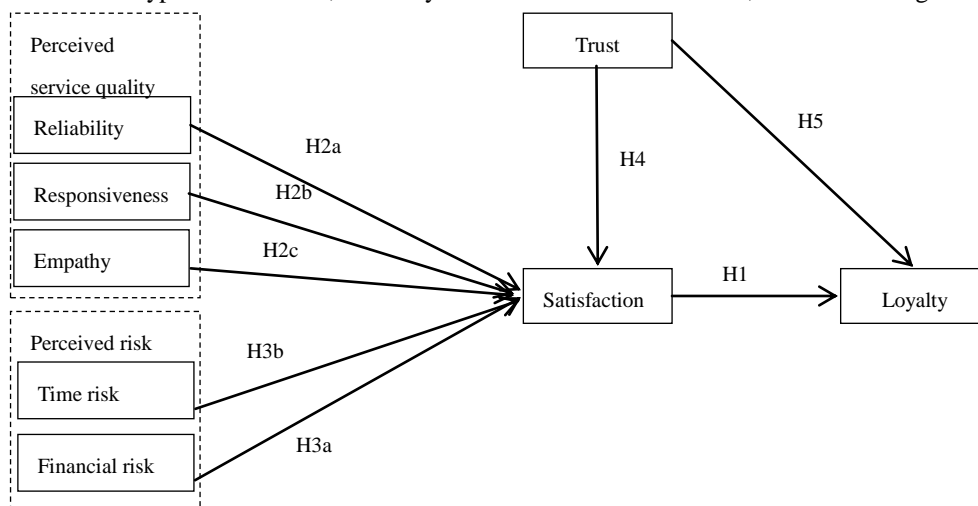

Figure 1. Research model

3.   METHODOLOGY

3.1 Measure development

A questionnaire survey was conducted to collect data on customer satisfaction and loyalty with respect to health websites. The survey took the Haodaifu(http://www.haodf.com/) as an example, which started operating in 2006 and had become one of the remarkable health websites in china. In this study, all instruments measuring the constructs were adapted from previous studies. Items measuring trust were adapted from San Mart ń and Camarero [31]; Perceived service quality including reliability, responsiveness and empathy were measured by items adapted from lai [21]; Perceived risk including financial risk and time risk were measures by items adapted from Hanafizadeh and Khedmatgozar [32]; And items measuring consumer satisfaction and loyalty were adapted from Deng et al [33]. All items were revised based on features of health websites, and were measured on seven-point Likert scales, which range from "strongly disagree" to "strongly agree" and score from 1 to 7 correspondingly. To assure the accuracy of translation, we adopted back-translation. The definitions and sources of the constructs are shown in Table 1.

Table 1. Research constructs

Construct	Definition	Number of items	Source
Trust（TRU）	A belief or state of the consumers' emotional security that the health websites are going to fulfill their expectations of results or performance.	7	San Mart ń and Camarero [31]
Reliability（REL）	Health websites have ability to fulfil the promised service reliably and accurately.	4	Lai [21]
Empathy（EMP）	Feeling and individualized attention is given to customers which is provided by health websites.	4	Lai [21]
Responsiveness（RES）	Health websites would like to help customers and offer timely services.	4	Lai [21]
Financial risk （FIR）	The financial loss caused by the process of using health websites.	3	Hanafizadeh and Khedmatgozar[32]
Time risk（TIR）	The time loss caused by the process of using health websites.	3	Hanafizadeh and Khedmatgozar[32]
Satisfaction （SAT）	The emotional attitude and holistic evaluation toward health services after using them.	.3	Deng et al [33]
Loyalty（LOY）	The behavior to reuse preferred services provided by the same health websites.	3	Deng et al [33]

3.2 Data collecting process

During the period from January to February in 2016, we collected data in a medical college, which is in Wuhan, a city in central China. The people who have used the Haodaifu(http://www.haodf.com/) were considered as our target participants. We invited people randomly to fill in our questionnaires after confirming that they were our target. A total of 280 questionnaires were distributed, and 267 responses were collected in the end. All of them were inspected, and those containing unfaithful or incomplete responses were excluded. Finally, we gained 231 usable responses which account for 86.5% of the initial sample. The results of descriptive statistics are shown in Table 2. Among the 231 respondents, 45.5% are males, whereas 54.1% are females, and 85.3% possess a bachelor's degree or higher education level. The sample is relatively young (81.4% in 18-30 years old). Meanwhile, the majority are students (79.7%), and those who used health websites within 6 months account for 81.4% of the 231 participants.

Table 2.   Sample characteristics

variable		Frequency	Percent
Gender	male	105	45.5
	female	125	54.1
Age	<17	5	2.2
	18~23	151	65.4
	23~30	37	16.0
	>31	38	16.4
Education level	High school	16	6.9
	associate degree	18	7.8
	Bachelor's degree	169	73.2
	Master's degree or higher	28	12.1
Occupation	Student	184	79.7
	General staff	12	5.2
	Educator/Academic	3	1.3
	Managerial	7	3.0
	Worker/sales/services	15	6.5
	others	10	4.3
Monthly income	< CNY 1000	149	64.5
	CNY 1000~2000	44	19.0
	CNY 2000~3000	19	8.2
	CNY 3000~4000	6	2.6
	>CNY 4000	13	5.6
Time to use	< 6 months	188	81.4
health websites	6 month to a year	19	8.2
	1~2 year	16	6.9
	2~3 year	1	0.4
	> 3 year	7	3.0
Self-rated health level	<59(poor health)	6	2.6
	60~69(slightly poor health)	19	8.2
	70~79(health)	58	25.1
	80~89(good health)	92	39.8
	>90(very good health)	56	24.2

4.   RESULTS

We adopted the Structure Equation Modeling(SEM) to analyze data. First, an exploratory factor analysis was performed using SPSS to conduct preprocessing of data. The KMO value is 0.902, and the Bartlett spherical test is significant, indicating that the data is suitable for factor analysis. We removed the unqualified items and obtained eight factors with good structure. The cumulative variance of the eight factors is 73.469%. In addition, the sample data was proved to obey normal distribution. Next, a confirmatory factor analysis was used to test the reliability and validity of the research model, and the results are presented in Table 3. The composite reliability (CR) and Cronbach's alpha coefficients of all factors are higher than 0.80, which suggests that the model has high reliability. Most of the standard loading of the latent factors exceed 0.7, and all the value of Average Variance Extracted (AVE) are greater than the recommend value 0.5, indicating reasonable convergent

validity [34]. Then we used Lisrel 8.8 to test the hypothetic model, which includes 31 items describing 8 latent constructs. In addition, the model fit of the research model was examined, as listed in Table 4. All fit indices are acceptable except the value of GIF (0.844), which is somewhat less than the suggested value (0.9). As a result, we still think that the research model possesses a good fit [33].

Table 3.   Item loading ,reliability and validity

Construct	Item	Standard loading	AVE	CR	Cronbach's α
TRU	TRU1	0.76	0.570	0.902	0.903
	TRU2	0.72			
	TRU3	0.82			
	TRU4	0.74			
	TRU5	0.79			
	TRU6	0.75			
	TRU7	0.70			
REL	REL1	0.74	0.671	0.883	0.891
	REL2	0.86			
	REL3	0.88			
	REL4	0.79			
EMP	EMP1	0.73	0.591	0.848	0.852
	EMP2	0.80			
	EMP3	0.82			
	EMP4	0.72			
RES	RES1	0.71	0.586	0.847	0.850
	RES2	0.80			
	RES3	0.77			
	RES4	0.78			
FIR	FIR1	0.79	0.656	0.852	0.851
	FIR2	0.83			
	FIR3	0.81			
TIR	TIR1	0.87	0.658	0.852	0.852
	TIR2	0.80			
	TIR3	0.76			
SAT	SAT1	0.87	0.740	0.893	0.895
	SAT2	0.86			
	SAT3	0.85			
LOY	LOY1	0.83	0.648	0.818	0.843
	LOY2	0.94			
	LOY3	0.61			

Table 4.   Summary of fit indices

Fit indices	Recommended value	Value in this study
χ 2/df	<3	2.940
RMSEA	<0.08	0.0514
GFI	>0.90	0.844
AGFI	>0.80	0.811
CFI	>0.90	0.981
NFI	>0.90	0.953
NNFI	>0.90	0.978
IFI	>0.90	0.981

The results of the hypotheses model are shown in Figure 2 and table 5. Among the eight hypotheses, six are supported. The effects of reliability and financial risk on satisfaction are not significant. Responsiveness, empathy, time risk and trust significantly influence customer satisfaction, and loyalty can be predicted by satisfaction and trust. What's more, the most important determinant of both customer satisfaction and loyalty is
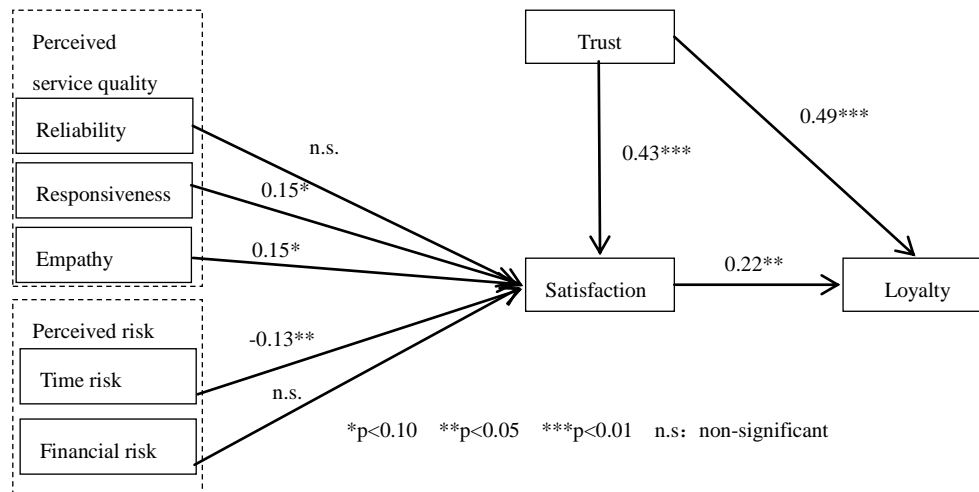

Figure 2. Results of the structure model analysis

trust, as path coefficient are 0.43(p<0.01) and 0.49(p<0.01).

Table 5.   The results of the hypotheses

hypothesis	Path	Coefficient	Result
H1	SAT—LOY	0.22**	Y
H2a	REL—SAT	0.05	N
H2b	RES—SAT	0.15*	Y
H2c	EMP—SAT	0.15*	Y
H3a	FIR—SAT	-0.09	N
H3b	TIR—SAT	-0.13**	Y
H4	TRU—SAT	0.43***	Y
H5	TRU—LOY	0.49***	Y

Notes : Y, support, N, not support .*p<0.10   **p<0.05   ***p<0.01

5. DISCUSSION

In this study, we explored the effects of trust, reliability, responsiveness, empathy, financial risk and time risk on customer satisfaction, as well as the effects of trust and satisfaction on customer loyalty. There are several findings as follows.

First, among the dimensions of perceived service quality, reliability has insignificant effect on customer satisfaction. Because of the important nature of health and intangibility of the Internet, online health services suffer more uncertainty and risk. Currently, people generally perceive limited reliability on the health websites. Consequently, the perception of reliability has no significant difference. As hypothesized, responsiveness and empathy positively affect customer satisfaction, which indicates that the faster the site's response is, and the more attention is paid to the customers' needs, the higher the customer satisfaction is. This result confirms the statement of Novak et al [35]. Therefore, the websites can increase customer satisfaction by providing timely and

effective feedback and offering personalized services in terms of customers' own needs.

Second, among the dimensions of perceived risk, time risk significantly affects customer satisfaction, while the effect of financial risk is insignificant. Under the current network environment, the financial losses caused by online payment are greatly decreased because of frequent usage of online banking, a variety of payment channels and standardized payment environment. In the case, financial risk has no significant effect on customer satisfaction. As hypothesized, time risk has negative effect on customer satisfaction. When navigating the websites, customers need spend time on the choice of doctors and hospitals, on the online registration process and so on. Consequently, if customers spend too much time on those websites, they will have decreased satisfaction. In order to improve customer satisfaction, the websites can reduce customers' time by ensuring that server is running well, by optimizing the structure of the site design and providing attractive user interface that is easy to use.

Third, trust has the greatest effects on both customer satisfaction and loyalty, and the path coefficients are 0.43 ($p<0.01$)and 0.49 ($p<0.01$), which implies that trust is the most important determinant of both of them. In addition, the effect of customer satisfaction on customer loyalty is supported, and this result corroborates that of other researches [18]. On the basis of the results, a high degree of trust is able to result in high level of customer satisfaction and loyalty. Accordingly, the degree of trust could be improved by adopting marketing strategies to expand the influence of the websites, by establishing good image of the websites, and by providing high quality services to enhance customer satisfaction and loyalty.

6. IMPLICATION AND LIMITATIONS

6.1 Implications

This study examines the factors affecting customer satisfaction and loyalty on health websites based on perceived service quality, perceived risk and trust. For researchers, this study enriches researches on customer satisfaction and loyalty on health websites, which can offer references for future researches. Furthermore, this study demonstrates significant impacts of responsiveness, empathy, time risk and trust on customer satisfaction in the health websites context, and most importantly trust has the greatest impact on both of satisfaction and loyalty, which provide a richer understanding of the prediction of customer satisfaction and loyalty on health websites. As for practitioner of health websites, some measures discussed above can improve the customer satisfaction and loyalty. We can conclude as follows: First, the websites should care about customers' needs and provide personalized services with high quality; Second, they should provide quick responses and effective feedback; Third, they should also optimize websites' design to save time of customers.

6.2 Limitations

This study also has some limitations. First, we only focused on the Haodaifu(http://www.haodf.com/), whereas different websites have different characteristics, service types and user groups. Therefore, the results in this study need to be generalized on other websites. Second, our sample mainly includes medical students, which may cannot represent general population suitably. Third, the potential effects of disease types or other demographic factors are not taken into account in the study. Thus, researchers should take cautious when citing the results of this study.

REFERENCES

[1] Topaloglu H et al. (2013).The Relative Importance of Usability and Functionality Factors for E-Health Web Sites. Human Factors and Ergonomics in Manufacturing & Service Industries, 23 (4):336-345.

[2] CNNIC. (2016).37rd statistical report on the Internet development in china.From http://cnnic.cn /hlwfzyj/hlwxzbg/ hlwtjbg/201601/P020160122444930951954.pdf.(in Chinese)

[3] Usher W, Skinner J. (2011).Categorizing health websites: e-knowledge, e-business and e-professional. Health Education Journal,70(3):285-295.

[4] Caiata-Zufferey M, Abraham A, Sommerhalder K.,Schulz P J. (2010). Online health information seeking in the context of the medical consultation in Switzer-land. Qualitative Health Research, 20(8):1050-1061.

[5] Tang, Xiaolin,Yu Shiying, Wu Jiang. (2016).A Study of the Competition of Health Websites Based on URL Co-occurrence Analysis. Journal of Intelligence, 35(4):98-104.(in Chinese)

[6] Safari M, Forouzandeh M, Safahani ,N. (2016).An Empirical Model to Explain the Effects of Electronic Customer Relationship Management on Customer e-Satisfaction and e-Loyalty: Evidence from Iranian Service Shopping Websites.Journal of Internet Banking and Commerce, 21(S2):1-11.

[7] Gao Qin. (2010). Evaluation of chinese health information websites.Chinese Journal of Medical Library & Information Science. 19(2):40-44.(in Chinese)

[8] Song Lirong, Zhang Qun, QI Na. (2014).Problems in information quality on medical and health websites in China. Chinese Journal of Medical Library & Information science, 23(9) :1-6.(in Chinese)

[9] Song S S, Kim M. (2012).Does more mean better? An examination of visual product presentation in e-Retailing. Journal of Electronic Commerce Research, 13(4):345-355.

[10] Yang Zhilin, Fang Xiang. (2004). Online service quality dimensions and their relationships with satisfaction: a content analysis of customer reviews of securities brokerage services. International Journal of Service Industry Management, 15(3):302-326.

[11] Lim H, Widdows R, Park J. (2006).M-loyalty: Winning strategies for mobile carriers. Journal of Consumer Marketing, 23(4): 208-218.

[12] Pavlou P A. (2003).Consumer acceptance of electronic commerce: integrating trust and risk with the technology acceptance model. International Journal of Electronic Commerce, 7: 101-134.

[13] Cyr D, Hassanein K, Head M, Ivanov A. (2007).The role of social presence in establishing loyalty in e-service environments. Interacting with Computers, 19:43-56.

[14] Kotler P. (2000).Marketing Management(10th Ed). New Jersey,USA: Prentice- Hall.

[15] Chiou J S, Pan LY. (2009).Antecedents of internet retailing loyalty: differences between heavy versus light shoppers. Journal of Business and Psychology, 24(3):327-339.

[16] Oliver R L. (1997).Satisfaction: A Behavioral Perspective on The Consumer. Asia Pacific Journal of Management, 2(2) :285-286.

[17] Abdinnour-Helm SF, Chaparro B S, Farmer S M. （2005).Using the end-user computing satisfaction (EUCS) instrument to measure satisfaction with a web site. Decision Sciences, 36:341-364.

[18] Fang Y H, Chiu CM, Wang.E.T.G. (2011).Understanding customers' satisfaction and repurchase intentions: An integration of IS success model, trust, and justice. Internet Research, 21(4):479-503.

[19] Parasuraman A, Zeithaml VA, Berry L L. (1988).SERVQUAL: A multipleitem scale for measuring consumer perceptions of service quality. Journal of Retailing, 64(1):12-40.

[20] Wisniewski M, Donnelly M. (1996).Measuring service quality in the public sector: The potential for SERVQUAL. Total Quality Management, 7(4):357-366.

[21] Lai T L. (2004).Service Quality and Perceived Value's Impact on Satisfaction, Intention and Usage of Short Message Service(SMS).Information Systems Frontiers, 6(4):353 -368.

[22] Yang H E, Wu Chichuang, Wang Kuangcheng. (2009). An empirical analysis of online game service satisfaction and loyalty. Expert Systems with Applications, 36(2):1816-1825.

[23] Lin Meiju, Wang W-T. (2015).Examining E-Commerce Customer Satisfaction and Loyalty: An Integrated Quality-Risk-Value Perspective. Journal of Organizational Computing and Electronic Commerce, 25(4): 379-401.

[24] Littler D, Melanthiou D. (2003).Consumer perceptions of risk and uncertainty and the implications for behavior towards innovative retail services: the case of Internet banking. Journal of Retailing and Consumer Services, 13(6): 431-443.

[25] Stone R N, Gronhaug K. (1993).Perceived risk: Further consideration for the marketing discipline . European Journal of Marketing, 27(3):39-50.

[26] Lopez-Nicolas C, Molina-Castillo F J. (2008).Customer Knowledge Management and E-commerce: The role of customer perceived risk . International Journal Of Information Management, 28(2):102-113.

[27] Sirdeshmukh D, Singh J, Sabol B. (2002).Customer trust,value and loyalty in relational exchanges. Journal of Marketing, 66:15-37.

[28] Kim D J, Ferrin D L, Rao H R. (2009).Trust and satisfaction, two stepping stones for successful e-commerce relationships: A longitudinal exploration. Information Systems Research, 20(2):237-257.

[29] Chiou J S, Droge C. (2006).Service quality, trust, specific asset investment, and expertise: Direct and indirect effects in a satisfaction-loyalty framework. Journal of the Academy of Marketing Science, 34(4):613-627.

[30] Kassim N M, Abdullah N A. (2008).Customer loyalty in e-commerce settings:An empirical study. Electronic Markets, 18(3):275-290.

[31] San Martń S, Camarero C. (2009).How perceived risk affects online buying. Online Information Review, 33(4):629-654.

[32] Hanafizadeh P, Khedmatgozar H. (2012).The mediating role of the dimensions of the perceived risk in the effect of customers' awareness on the adoption of Internet banking in Iran. Electronic Commerce Research, 12(2):151-175.

[33] Deng Zhaohua, Lu Yaobin, Wei K K, Zhang Jinzhong. (2010).Understanding customer satisfaction and loyalty: an empirical study of mobile instant messages in china. International Journal of Information Management, 30(4): 289-300.

[34] Deng Zhaohua, Mo Xiuting, Liu Shan. (2014). Comparison of the middle-aged and older users' adoption of mobile health services in china. International Journal of Medical Informatics, 83(3), 210-224.

[35] Novak T P, Hoffman D, Yung Y. (2000).Measuring the customer experience in online environments:A structural modeling approach. Marketing Science, 19(1):22-42.