RESEARCH OF THE RELATIONSHIP BETWEEN PRIVACY CONCERN AND CONTINUOUS USE BEHAVIOR IN ONLINE PERSONALIZED SYSTEM

Li Yan, College of Management Science, Shandong University of Finance and Economics, Jinan, China, liyan892003@sina.com
Liu Weilong, College of Management Science, Shandong University of Finance and Economics, Jinan, China, lw1_sdufe@163.com
Fang Jin, Mathematics and Economics Research Institute, Shandong University of Finance and Economics, Jinan, China, jinfang621@sina.com

Abstract

To increase network users’ satisfaction and continuous behavior, e-commerce platform is concentrated on providing users more enjoyment during consuming online. Online personalized system can help e-commerce platform know more users’ preference, which aims to increase degree of match between service, product and preference, need, but users pay attention to privacy concern during this process which can take with negative emotion and lessen users’ continuous behavior. This research focuses on users’ privacy concern in online personalized system based on user acceptance of information technology model and expectation confirmation theory, and builds online personalized system behavior model of continuous use and collect the real data to test the model. Results show that privacy concern and the ability of personalization for the platform have significantly effects on user’s behavior of continuous use. Therefore, the balance between personalization and privacy concern has important meaning for e-commerce platform which can provide high quality service to users.

Key words: Privacy concern; Online personalized system; Continuous behavior; E-commerce;
1 INTRODUCTION

User stickiness for E-commerce platform increasingly dependent on its capabilities of personalized service. Due to that online personalized system can meet users’ special needs, “do it yourself” involvement, and create virtual scenery to simulate reality experience, researchers from industry and academia pay more attention on this technique and its application. Many Chinese and western enterprises provide personalized services on their e-commerce platform, such as China SHOWKEE can customize clothing, shoes, hats, and other daily necessities, and DIGPARK provide personalized mouse pads, badge, CD, postcards, postcards and other customized services, while HERIEISCHINA.COM provide personalized services which tourists can design travel itinerary by themselves; while the United States customization website called ZAZZLE that users can customize clothing, electronic products, accessories and stamps, and SYNQERA Company’s survey found that 75% of customers prefer to personalized service when they shopping online which is a personalized shopping experience of digital solutions provider. Therefore, for Internet consumers, online personalized system has become an indispensable service pattern to their daily work and life.

Personalized services take advantage of the user's personalized information to meet the needs of different users, but personalization of E-commerce platform is a double-edged sword, not only meeting the personalized needs of users, and also causing the inevitable privacy concerns. From the perspective of consumers, privacy threat consumer felt by the adoption of these services can directly affect consumer behaviors, and even play a negative role in consumer purchasing decisions. From the perspective of service providers, service providers prefer to maintain a long-term relationship with consumers to gain more profit, so privacy concern becomes critical factor influencing consumers’ purchasing decisions, even one of the important factors affecting consumer repurchase decisions.

Many scholars’ study of the online personalized systems are more concentrated on technology, i.e., they focus on using technique to solve and deal with problems in the process of personalized service and addressing security mechanisms to protect the privacy of information; From the perspective of behavioral, the analysis of the privacy concerns mostly concentrated on the factors that affect privacy concern. For example, Smith(1996) and Malhotra(2004) have investigated privacy concerns’ factors offline and online, and proposed the scale being validated in different fields, and analyzed the relationship among privacy concerns, trust, perceived risk and user’s continuous use intention(Caudill, Murphy2007). Zhang Xifeng(2013) studies consumer behavior about continued use of e-commerce, and shows that the user's perceived performance is a mediating factor between expectation confirmation and satisfaction. In her studies, she mentioned that privacy concerns have a greater impact on the continued use behavior (Chen Hui, Li Yuanzhi2007 ), but did not conduct empirical research, therefore how privacy concern impact on users’ behavior when using online personalized system still need further study. In this paper, combined with user acceptance of information technology model and expectation confirmation theory, we propose the model of user continuous use of online personalized system and analyzed the relationship between privacy concerns and continuous use behavior.

2 RELATED RESEARCH REVIEW

2.1 Privacy concern in online personalized system

IBM(1999) survey on cross-culture consumer privacy concerns shows that 60 percent of
Americans are interested in personalized customization services for meeting their needs, and which is higher rank over other western countries, such as the UK is 51%, Germany is 40%; while these users using the online customization services during the survey shows that, 72% of Americans thought that they were worried about privacy being threatened, and 51% of the British did that, German were 42%. The survey fully illustrated that online personalized system might benefit users, but there were inevitably confronted issues of privacy. So users’ privacy concern has gradually become an important factor affecting their decisions.

2.1.1 Privacy concerns

In the process of e-commerce transaction, users want to control the content of information that they provided to enterprises, and know clearly when, how, and to what extent about these private information used by the enterprises. Information users concerned and involved in e-commerce transactions were defined as privacy information (Alan1967). Scope of users’ privacy information contained in e-commerce transactions varies from culture, policy, industry and other factors (Culnan1993). An individual’s subjective perceived fairness to the content of information privacy is defined as privacy concerns (Campbell1997), users’ privacy concerns are influenced by users’ education background, past experience, living environment and other factors. According to the degree of users’ privacy concerns, users may be divided into wary Internet users, alarmed Internet users, circumspect Internet users, and unconcerned Internet users (Sheehan2002). The wary Internet users completely refuse to provide privacy information, on the contrary, unconcerned Internet users entirely accept; while circumspect Internet users decide by balancing benefits and losses, but compared to wary Internet users, alarmed Internet users pay less attention on privacy concerns in most cases.

In China, the legal right of internet privacy means that citizens enjoy a freedom right on the Internet and their information privacy will be protected by law, individuals cannot intrude, obtain, collect, use and disclosure citizens’ privacy information illegally; in other words, the right of internet privacy refers to prohibition about disclosing certain sensitive information associated with an individual online, including facts, images and defamatory opinions, etc. (Zhao Huaming2002). The right of internet privacy mainly includes the right to be informed, the right of choice, the right of control, safety claim rights, use limitation rights and compensation claims rights. In Chinese legal system, clauses about Internet information privacy protection distribute in the constitution, criminal law, civil law, all the clauses refer to protect individuals’ legitimate rights not being infringed, but there clearly defined in the " Tort Liability Act", and privacy right is referred to an independent personality right to be protected against the infringement which should undertake liability for tort (Yang Lixin2002). Privacy issues are more significant in online customization for daily product during the information gathering process, which is an essential part for customization. Related studies suggested that those specified personal information collection negatively influenced consumers’ intentions toward personalization services and information sharing intentions.

2.1.2 Online personalized system

Being different from traditional transaction, online marketing is more focused on payment, security, interface interactivity and convenience rather than for service, environment, purchase motivation in the traditional marketplace, and the greatest difference is that the Internet has enhanced the interaction of buyers and sellers and caused security threats between online and offline
marketplace. Consumer personalized service (Wang Xixi 2001) refers to that E-commerce system receive customers' preferences, characteristics, and identify customer online behavioral pattern, and provide customization interface to promote communication between service providers and users, and leads to fully understand to information and optional scope of the products/services, which makes the psychological identity be consumers’ prerequisite of purchasing decisions.

Customization is a service that enterprise will collect users’ preferences and habits to tailor the service for consumers (Adomavicius, Tuzhilin 2005). Because personalized needs change constantly owing to consumer needs change. So in the process of customization, users can participate in two ways in which one is that users need to provide their needs to service providers directly, the other is that users can directly participate in the process of personalized service, and interact to service providers, continuous feedback to improve the procedure. Both methods require that service providers have the ability to respond to changing needs of users, and to fully exploit the users’ interests, habits, personality differences (Yang Xiaoping 2007). This can also be fully illustrated that users have been converted from a passive acceptance of the role to interactive creators in the transactions.

Recently, many companies have launched online personalized service, such Web-based personalized system can be divided into three type: matching customer demands, customer choosing demand, customer-driven system (Duan Yunqi 2007), these reflected personalized system with different degree of users’ participation. The first type focuses on providing demand by consumers, for example, currently online travel customization is very popular in that they tailored optional travel itinerary for travelers according to their needs, while providing different price depending on the needs of tourists, different styles of hotels, tourist attractions and other services for customers to choose; the second type focuses on that providers provide optional service tailored by experience about customers before, such as ZAZZLE offers different patterns, designs and products for customers to choose what they want; while customer-driven system provides constant interaction between customers and providers during the process of providing services or purchasing product.

2.2 Consumer adoption behavior and consumer continuous adoption behavior

For the enterprise, Online personalized is a very important marketing strategy, it can help companies know more about user's preferences and consuming behaviors. Online personalized needs users’ privacy information as a data support, and consumers voluntarily provide privacy information to enterprise. From the perspective of enterprises, privacy information can be brought profit to the enterprises, but it would bring risks to consumers for collecting, controlling, and using customers' privacy information. Due to above-mentioned reason, consumers adopt online personalized system will be influenced by consumers’ trust to the enterprises, users’ perceived risk, perceived value and other factors (Chellappa, Sin 2005). Currently, because of the great development trend of online personalized system, enterprises can not only satisfy just for adoption of services, but more for benefits from consumers’ continued adoption of online personalized service. Perceived risk is the subjective judgment that people make about the characteristics and severity of a risk, which contains the loss of privacy information. And trust to the enterprises is the faith users is willing to rely on the actions of the enterprises, so with more attention on privacy information protection, privacy concern has attracted more attention from the perspective of users. Past studies have not build mature theoretical model about how privacy concerns influence consumers’ intention in continued use of the online personalized system. In this paper, it is empirically proved how privacy concerns influence users’ continuous intention and relationship between privacy concern and personalization based on
3 THEORETICAL MODEL AND ASSUMPTIONS

3.1 Theoretical basis

Expectation confirmation theory (ECT) mainly study the relationship between consumers’ purchase behavior and satisfaction, and holds that consumers' intention to repurchase a product or continue service use is determined primarily by their satisfaction with prior use of that product or service. Bhattacharjee (2001) considered that whether users adopt IT or consumers repurchasing behavior depends on their initial behavior. Therefore, the construct of perceived usefulness added to the ECT model, Bhattacharjee constructs a new continued usage behavioral model which is based on expectation confirmation theory, technology acceptance model and principal-agent theory. Compared the ECT model, this new model is more reasonable to explain users’ behavior in information technology field. In this model, the key factors of users' e-commerce service continued use intention are satisfaction, perceived usefulness and loyalty incentives. Users' satisfaction to information technology depends on the comparison between users’ expectation prior to using IT and perceived performance post-use of IT, satisfaction is the first evaluation after users using the system, and usually presents three states: satisfied, neutral, dissatisfied; When expectation is positive, satisfaction will increase, then users will continue to use the technology, on the contrary, users will stop using the technology. Bhattacharjee’s study broke through the technology acceptance model for the first time, he constructed continued use of behavioral models on the basis of expectation confirmation theory, and used electronic banking as an empirical case to verify this model. In the applications of continued use of behavioral models, perceived performance is mediating factors between expectation confirmation and satisfaction, so the comparison result of privacy information will attract attention from users, therefore based on the continued use of behavioral models, this paper study and analysis the impact of privacy concerns, the technical characteristics of customization on users continuance use of emerging technology in online personalized system.

![ECT-IS Diagram](https://via.placeholder.com/150)

*Figure 1* Bhattacharjee ‘s continued use of behavioral models (ECT-IS)

3.2 Research hypotheses

3.2.1 Mediating effect of privacy concerns

The research report on information security situation of Chinese citizens in 2012(2012) according
to CNNIC’s survey (China Internet Network Information Center) shows that 71.3% of Internet users care about information security seriously, the different Internet ages and education background influence users’ carefulness about information security, that is, the longer the Internet ages is, the more do the users know about bad events on information security, and similarly, the higher education, the more bad information on information security the users get. Therefore, in China, privacy concerns have very important impact on users adoption behavior of e-commerce platform.

In the different cultural backgrounds and policies, the importance of users’ privacy concerns is different, and because different industries have different specificity, the proportion of the privacy concerns are not the same, for example, for the financial industry, security is a vital part of its operation. In addition, the user's personality characteristics significantly affect the privacy concerns, such as age, gender, education level, net ages, past experience and etc., they all have varying impact on users’ privacy concerns (Yang Shu et al. 2008). Due to the limitations of this study’s sample, this research will limit the context of privacy concerns to the range of Internet privacy right.

In the process of promoting the use of online personalized system, there exists many problems, such as disclosure, loss, misuse and other issues of users’ privacy information, causing the users’ life and work be affected severely, increasing the worry of users’ the private information publicity in the Internet environment (Dinev, Hart 2005). When the users’ expectations and actual performance of the online personalized system does not reach consensus, there will cause much worry about privacy information and then increase users’ privacy concerns. In other words, the influence of users’ privacy information suffering infringement will exceed the influence from the values creating by online personalized system (Heng Xu 2009). The consumers’ perceived performance, such as perceived usefulness, perceived ease of use, perceived quality, perceived entertainment[4] and other factors, adjust the relationship between expectations confirmation and satisfaction, compared to other control conditions Johnson (1974) consider privacy concerns can cause users more attention under certain circumstances, therefore, under the consumption of the Internet, trading environment, the variation of users’ privacy concerns can adjust the impact between expectations confirmation and satisfaction and can influence the intention of uses’ continued use through satisfaction. On the basis of ECT-IT model, to study users continued use behavior in online personalized system, the paper makes the following assumptions:

Hypothesis 1: Expectation confirmation has a negative impact on privacy concerns.
Hypothesis 2: Privacy concerns have negative impact on satisfaction.
Hypothesis 3: Expectation confirmation has a positive impact on satisfaction.
Hypothesis 7: Satisfaction has a positive impact on the continued use intention.

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Privacy Concerns</td>
<td>An individual’s subjective view of fairness within the context of information privacy</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>Whether users are satisfied with the online personalized system service</td>
</tr>
<tr>
<td>Confirmation</td>
<td>The comparison between expectation before use online personalized system and actual performance after use online personalized system</td>
</tr>
<tr>
<td>Online Personalized</td>
<td>The ability to provide content and services online that are tailored to individuals based on knowledge about their preferences and behaviors</td>
</tr>
<tr>
<td>Continued Use Intention</td>
<td>The intention of continue to use online personalized system</td>
</tr>
</tbody>
</table>

Table 1 Definition of Constructs
3.2.2 Moderating effect of online personalized system technology features

Online customization is emerging service mode of e-commerce platform, what different with the traditional business model is that users cannot feel appearance of the senses, the specific content of goods or services, but it can get a lot of service information, and compare different services at the same time, this provides richer using experience than traditional business model. Online customization has two key factors, one is the ability enterprises acquiring, processing users’ information; another is the intention users providing users’ information and using the online personalized services(Chellappa 2005). On the one hand companies want to get more users’ information to better understand users' preferences and needs, on the other hand, if the user wants to get better services correspond to their demand for services, they must give up parts of the information. Therefore, from a users’ perspective, a better users experience requires more users’ privacy information as support. So, personalized online tool provided by customization services construct on the basis of users’ privacy information, this can help companies focus on the processing, analyzing demand information, providing users with products or services more specific, correspond to their preferences. When the service online customization system provided is more correspond to the needs of individual users, users’ satisfaction with using the online customization system will be more elevated. When users has a personalized service with high expectations or unique requirements, their intention will promote repeated use behavior(Tiwana,Bush 2005). According to the mentioned above, personalized capabilities regulates different factors’ degree of change in the process of users continued use behavior. Therefore, we make the following assumptions:

Hypothesis 4: Online personalized has a negative impact on privacy concerns.
Hypothesis 5: Online personalized has a positive impact on satisfaction.
Hypothesis 6: Online personalized has a positive impact on the continued use intention.

![Figure 2. online personalized system continued use behavioral models](image)

4 RESEARCH METHODOLOGY

4.1 Data collection

The statistical report on Internet development in China in 2013 according to CNNIC's data(2013) shows that 26.8% of Internet users in China is students, they all among the 20-29 ages. Therefore, we use survey methods to collect data from five college students in Shandong Province, and we use paper and electronic questionnaire which were randomly distributed to college students and took back on the spot. The
questionnaires were distributed into 150 copies of the paper and 100 copies of electronic, but we took back 230 copies of valid questionnaires. In valid respondents, there are 54% girls, 45% boys. And 21-25 years old users accounted for 59%, 26-30 years old users accounted for 26%. The majority of respondent have undergraduate degree, and 54% individuals have 6-10 years network age while 18% individuals have 11-15 years. Understanding of the online personalized system among respondents more concentrated on understanding or used Taobao and other online retailers, online personalized travel and search engines and so on.

4.2 Scale development

Smith(1996), Dinev&Hart(2005), Malhotra(2004) and other scholars have developed CFIP, IUIPC and one-dimensional scale of privacy concerns, but privacy concerns will change affected by cultural and policy factors. Therefore, on the basis of this, Yangshu and other scholars(2008) have studied the applicable of different privacy concerns scales, they argue compared to the CFIP scale, IUIPC is more appropriate to study the problem in the Internet environment of Chinese consumers’ privacy concerns. Therefore, on the basis of IUIPC we use Likert 7 scale to measure constructs; we use a second-order IUIPC factor incorporating three first-order dimensions, control, awareness, collecting. We pick up some online personalized measurements to measure variables (Zeithaml et al.2000). Expectations confirmation, satisfaction and users’ continuance intention reference the scale from Bhattacherjee(2001) and Oliver(1980). Some details show in table 2.

<table>
<thead>
<tr>
<th>Item</th>
<th>Caption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Privacy Concerns:</td>
<td></td>
</tr>
<tr>
<td>Control 1</td>
<td>Internet users’ privacy is really a matter of users’ right to exercise control and autonomy over decisions about how their information is collected, used, and shared.</td>
</tr>
<tr>
<td>Control 2</td>
<td>Consumer control of personal information lies at the heart of consumer privacy.</td>
</tr>
<tr>
<td>Control 3</td>
<td>I believe that online privacy is invaded when control is lost or unwillingly reduced as a result of a marketing transaction.</td>
</tr>
<tr>
<td>Awareness 1</td>
<td>Companies seeking information online should disclose the way the data are collected, processed, and used.</td>
</tr>
<tr>
<td>Awareness 2</td>
<td>A good consumer online privacy policy should have a clear and conspicuous disclosure.</td>
</tr>
<tr>
<td>Awareness 3</td>
<td>It is very important to me that I am aware and knowledgeable about how my personal information will be used.</td>
</tr>
<tr>
<td>Collection 1</td>
<td>It is usually bothers me when online companies ask me for personal information.</td>
</tr>
<tr>
<td>Collection 2</td>
<td>When online companies ask me for personal information, I sometimes think twice before providing it.</td>
</tr>
<tr>
<td>Collection 3</td>
<td>It bothers me to give personal information to so many online companies.</td>
</tr>
<tr>
<td>Collection 4</td>
<td>I’m concerned that online companies are collecting too much personal information about me.</td>
</tr>
<tr>
<td>Online Personalized:</td>
<td></td>
</tr>
<tr>
<td>OP 1</td>
<td>Online personalized system provides a complementary tool to help users custom service.</td>
</tr>
<tr>
<td>OP 2</td>
<td>Online personalized system can meet the users’ individual needs and preferences in time.</td>
</tr>
<tr>
<td>OP 3</td>
<td>Personalize service provided by online personalized system match well with users’ preferences.</td>
</tr>
<tr>
<td>Expectation Confirmation:</td>
<td></td>
</tr>
<tr>
<td>Ectn 1</td>
<td>Online personalized system ‘s execution of online privacy meets my expectations.</td>
</tr>
<tr>
<td>Ectn 2</td>
<td>Online personalized system gives me all the information and tools needed to protect my privacy</td>
</tr>
</tbody>
</table>
My online trading experience via online personalized system falls short of my expectations.

After-sales service provided by online personalized system meets my expectations.

Products and services recommended to me by online personalized system meet my expectations.

I am satisfied with my decision to use my OLB.

My experience with using this OLB was very unsatisfactory.

I think I did the right thing by deciding to use my OLB.

I want to continue using online personalized system rather than discontinue its use.

My intentions are to continue using online personalized system rather than any alternative means.

If I could, I would like to discontinue use of online personalized system.

### Table 2 Measurement Instruments

#### 4.3 Reliability and validity

In this paper, we choose Cronbach Alpha, Composite Reliability (CR) and Average Variance (AVE) to measure scale. When Cronbach Alpha, composite reliability (CR) is greater than 0.8 and average variance (AVE) is greater than 0.5, we believe the measurement model has a good internal consistency. Thus, according to the data in Table 2, Cronbach Alpha values of privacy concerns, online personalized, expect confirmation, satisfaction, continuous usage behavior are all greater than 0.8, and the CR values are also all greater than 0.8, AVE values are greater than 0.5, so the result indicates that the measurement model has a good internal consistency.

Validity analysis mainly has two aspects, that is content validity and construct validity. Questionnaire has been tested in small group and logically analyzed by experts, so content validity is fine. As for construct validity, we choose analyzing loadings to measure the factor, first we test KMO and Bartlett's values, when KMO values is greater than 0.5 and Bartlett's value is less than 0.05, we believe the questionnaire has construct validity, then we can analyze the factor; Second step is to extract factors, we compare the percentage of the main factor explanation variance with every factor loadings, if the main factor explanation variance in general greater than 60% and the load factor is greater than 0.6, we believe model has great construct validity. Through factor analysis of the model, the data from table 2 shows that KMO values of each measurement items are greater than 0.5 and Bartlett's values are less than 0.05, the main factor explanation variance is 77 %, which greater than 60% and the factor load is greater than 0.6, all the results indicating that measurement model has great construct validity.

<table>
<thead>
<tr>
<th>Variables name</th>
<th>Ectn 3</th>
<th>KMO</th>
<th>Bartlett's</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>0.859</td>
<td>0.734</td>
<td>Approx.Chi-Square</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>df</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sig.</td>
</tr>
<tr>
<td>Privacy Concerns</td>
<td></td>
<td></td>
<td>Approx.Chi-Square</td>
</tr>
<tr>
<td>Awareness</td>
<td>0.842</td>
<td>0.729</td>
<td>df</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sig.</td>
</tr>
</tbody>
</table>
Table 3 The measurements of variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Collection</th>
<th>Satisfaction</th>
<th>Expectation Confirmation</th>
<th>Online Personalized</th>
<th>Continued Use Intention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx. Chi-Square</td>
<td>0.897</td>
<td>0.949</td>
<td>0.928</td>
<td>0.905</td>
<td>0.885</td>
</tr>
<tr>
<td>df</td>
<td>0.818</td>
<td>0.775</td>
<td>0.889</td>
<td>0.747</td>
<td>0.739</td>
</tr>
<tr>
<td>Sig.</td>
<td>558.19</td>
<td>671.09</td>
<td>866.00</td>
<td>446.12</td>
<td>383.89</td>
</tr>
<tr>
<td>df</td>
<td>6</td>
<td>3</td>
<td>10</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Sig.</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
</tbody>
</table>

5 DATA ANALYSIS AND RESULTS

After testing the reliability and validity of the measurement model, we test path coefficient of the model, if measurement results is that $\chi^2 / df$ is less than 3, GFI is greater than 0.8, AGFI is greater than 0.8, RMSEA is greater than 0.08, then we can say the measure has a good fitness of the model. So test results in this study show that, $\chi^2 / df = 2.473$, GFI = 0.860, AGFI = 0.827, RMSEA = 0.08, this results mean the model has a good fitness.

Figure 2. Results of SEM Analysis

Attention : * is p < 0.05 ; ** is p < 0.01 ; *** is p < 0.001
In the measurement model, the privacy concerns arising effect in the process of confirmation positively influence users’ satisfaction. In the research of consumers’ continuance behavior, scholars have certified that there is mediating factors between expectation confirmation and satisfaction, but no further concern for privacy verification. Therefore, this paper only analyzes privacy concerns in mediating factors. As for testing method we choose causal method proposed by Baron(1986) and Bootstrap methods proposed by McKinnon(2008). If Bootstrap confidence interval does not contain zero, then there exist indirect, direct or total effect, or $Z > 1.96$ also shows the corresponding mediating effect exists. The data shows that path coefficient between confirmation and satisfaction is significant, and indirect effect $Z = 2.34 > 1.96$, while Bias-Corrected method confidence at $95\%$ confidence level interval is $[0.082, 0.236]$ which does not contain zero, so indirect effects exist. Meanwhile Bias-Corrected method at $95\%$ confidence level confidence interval is $[0.284, 0.486]$ which does not contain zero, so direct effect exists. Thus, according to the results of the analysis, the mediating effect of privacy concerns partially exists between the expectations confirmation and satisfaction.

Figure 2. describes the statistic results and correlations between measurement items. Data shown in the figure indicates the path of privacy concerns’ second-order coefficient and fitness degree all meet standards, and Malhotra’s model is validated. Besides, expectation confirmation has a negative impact on privacy concerns ($\beta = 0.049, p<0.010$), the user's privacy concerns will weaken users’ satisfaction with the online customization system ($\beta = 0.39, p<0.010$), so privacy concerned is mediating factors between expectation confirmation and satisfaction; Expectation confirmation has a positive effect on satisfaction ($\beta = 0.51, p<0.010$), and user satisfaction positively affect the user continuing intention after using online customization system ($\beta = 0.37, p<0.010$) these two results verify the hypothesis of Bhattacherjee; While online service providers’ ability can weaken users’ privacy concerns ($\beta = 0.58, p<0.010$), but positively influence users’ satisfaction ($\beta = 0.28, p<0.010$) and users’ continuance intention ($\beta = 0.34, p<0.010$). Therefore, online personalized as technical features of online personalized system adjust the relationship among privacy concerns, satisfaction and continuance intentions.

6 SUMMARY AND FURTHER RESEARCH

This paper studies the influence of privacy concerns to users’ continuance behavior in online personalized system on the basis of expectation confirmation theory and technique acceptance model. And then we build online personalized system continuance behavioral models to explain how the technological features influence users’ behavior. The results show that (1) the personalized features not only increase the user experience, satisfaction, but also affect the user privacy concerns; (2) the change of expectation confirmation will cause privacy concerns’ change, and users’ privacy concerns can affect users’ continuance behavior through users’ satisfaction; (3) the personalized degree of online personalized system has a negative effect on users' privacy concerns, that is the higher the degree of personalization make, the lower the users' privacy concerns become, then reduce users’ privacy concerns. Thus, in the case of companies to take certain security measures, they also can continuously improve their personalized capabilities, rich users’ experience, reduce users’ privacy concerns, and ultimately promote the sustainable use of the online personalized system.

In this paper, there are still a few limitations, first of all, users’ privacy concerns affected by individual characteristics, mechanism, policies and other factors, therefore, privacy concerns’ effects vary with different individuals, but this paper does not make further research about mediating factors. Secondly, because this study was limited to the privacy concerns about the impact on online personalized system continuance intention, still exists many other factors between expectation confirmation and satisfaction,
this paper does not verify every factors and the direct factors between privacy concerns and continuance intention still need more study, for example, there is a certain link between a direct impact on privacy concerns to online personalized and trust theory, risk theory and other factors, this still need further research and analysis validation.

Acknowledgments

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