THE EFFECTS OF WEB PERSONALIZATION ON INFLUENCING USERS' SWITCHING DECISIONS TO A NEW WEBSITE

Shuk Ying Ho  
*Australian National University, susanna.ho@anu.edu.au*

Kevin K W Ho  
*Hong Kong University of Science and Technology, kevinkho@uuguam.uog.edu*

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THE EFFECTS OF WEB PERSONALIZATION ON INFLUENCING USERS’ SWITCHING DECISIONS TO A NEW WEBSITE

Ho, Shuk Ying, the Australian National University, Canberra, 0200, ACT, Australia, susanna.ho@anu.edu.au

Ho, Kevin K W, the Hong Kong University of Science and Technology, Hong Kong, China, kevinkho@ust.hk

Abstract

Numerous firms are taking advantage of interactive technologies to personalize their interactions with users. They invest many resources in personalization to provide personalized services of higher quality in the hope of more business opportunities and higher customer satisfaction. Despite the proliferation of personalized web services worldwide, prior research on how personalization attracts users to switch to a personalized website is minimal. If this question is left unanswered, online firms do not know whether their investment can be justified. Our research examines how users’ web experience and their perceptions towards personalization influence their attitudes towards switching to two types of personalized websites, online shopping websites and search engines. A survey study with 192 Internet users was conducted. The findings show that personalization plays different roles of attracting users in the context of search engines and online shopping sites. Internet users want useful personalized services, but at the same time, they are concerned with the manner in which firms use their data for personalization. If the involvement of Internet users with their current site is high, then personalized services are not attractive enough to motivate them to migrate from one site to another.

Keywords: Personalization, website switching, search engines, online shopping sites, involvement, information relevance, usefulness, ease of use, privacy concern.
1 INTRODUCTION

1.1 Prior Information Systems (IS) Research on Web Personalization

To remain competitive, firms have been adopting differentiating strategies to attract and retain users. Web personalization is considered to be the most automated method for customizing content to match users’ needs. In academia, personalization has also gained increased attention from IS researchers. Some research focuses on the design of personalization systems, mostly in conjunction with algorithms, processes and conceptual frameworks (e.g. Ahn 2006; Fan et al. 2005; Fan and Poole 2006; McGinty and Smyth 2006; Pендharkar 2006; Wei et al. 2006). Other work is related to strategic business units and market economy. For example, Murthi and Sarkar (2003) develop a conceptual framework that allows examination of the strategic role of personalization in the interactions between a firm and other key players in the firm’s value chain. Some IS researchers with more of an organizational focus examine the factors influencing the adoption decisions of personalization technologies by small firms (Greer and Murtaza 2003) and large enterprises (Chang et al. 2003).

The current paper fits best within a human computer interaction (HCI) stream of personalization studies. With the steady growth of HCI in the IS community (Zhang et al., 2002, Zhang and Dillon, 2003; Zhang and Li, 2005; Zhang et al., 2005), many personalization studies are found in the area of HCI. We believe that HCI studies will continue to be dominant in personalization research. The HCI approach to personalization explores how these technologies influence users’ behavior and perception (Zhang et al. 2005). Related research regards the persuasive effects of personalization on users’ decision making (e.g. Gretzel and Fesenmaier 2006; Tam and Ho 2005; Tam and Ho 2006; Wang and Benbasat 2005), on users’ trust in the agent (e.g. Komiaik and Benbasat 2006), and on the perception of e-services (e.g. Blom and Monk 2003; Nysveen and Pedersen 2004; Kumar and Benbasat 2006; Liang et al. 2007; Rust and Lemon 2001; Xiao and Benbasat 2007). Other work shows that personalization eases business-to-consumer interaction (Ardissono et al. 2002) and eliminates aimless surfing activities (Shahabi and Banaei-Kashani 2003).

1.2 Web Personalization and Its Commercial Use

Personalization technologies have been widely adopted in electronic commerce (Ardissono et al. 2002). Its immediate objectives are to understand users’ preferences and contexts and to deliver highly focused, relevant content matched to their needs. The long-term objective is to generate more business opportunities and increase customers’ satisfaction.

Firms employ personalization technologies in different ways to generate business opportunities. Some firms use personalization technologies as recommenders to provide offers to each individual in the hope of generating up-sell and cross-sell opportunities (Wang and Benbasat 2005). The main objective is to maximize online firms’ revenue. A well-known example is Amazon, which greets the users by name and shortlists some books on the recommendation pages. The recommendations are generated based on the users’ previous purchases and the preferences of like-minded people. Amazon continues to enhance its personalization system, and more filtering mechanisms are being added to make the recommendations more useful and relevant to users’ needs. Personalization technologies are also used to dynamically arrange the index of product pages based on click-stream analysis to reduce the users’ search efforts. One example is My Yahoo, which personalizes the content based on users’ profiles. For instance, it provides information on the horoscope for the correct star sign matched with a person’s date of birth. It also presents the users with an array of choices and allows the users to select what is of interest to them. The users can personalize not only the content, but also the layout. My Yahoo is considered to be one of the forerunners among the growing number of personalized websites that have been emerging on the Internet over the last few years (Manber et al. 2000).
Personalization is not limited to online shopping, and it is applied to search engines. In 2004, two personalized search engines, A9.com by an Amazon subsidiary and MyJeeves by Ask Jeeves, were launched to let users store individual search results and then provide personalized web searches. Recently, the My Yahoo service has been enhanced with personalized searching. That is, the users can save pages of search results to a ‘personal web’ and block URLs from appearing on the result list. Google generates personalized offers under the sponsored links shown on the top of the browser.

1.3 Motivations and Research Questions

There is much publicity about delivering personalized services over the web and the stakes are high for vendors selling related products. In spite of that, important questions that persist in the mind of online merchants are unanswered. For example, is web personalization an effective marketing strategy to attract new users? What are the factors motivating users to switch to a personalized website? Are these factors equally important for online shopping sites and search engine websites? Our understanding of the impact of web personalization is inconclusive. Thus, our study is to conduct a survey to address the above questions.

The paper is organized as follows: Section 2 provides the theoretical background and states the research hypotheses. Section 3 presents the methodology and findings. Section 4 sets out the study implications. A conclusion and study limitation is presented in the last section.

2 THEORETICAL BACKGROUND AND HYPOTHESES

Website switching is when users switch their allegiance from one website providing a certain type of services/products to another website. Website switching can be instigated by users’ desire for novelty, perceived risk of the switch, frequency of visits, better functionality, superior availability, perceived improvements or innovations in competitive websites, decline in quality in the current websites, and/or level of satisfaction with the most recent visit to the initial website (Keaveney and Parthasarathy 2001). Website switching is most common with sites that have no great perceived variation in quality across sites such as weather forecast websites.

This research develops a model of website-switching behaviour to study the situation in which users currently use a website without personalized services, and to see whether they will switch to a website providing personalized services. In particular, we are interested in online shopping websites and search engine websites. Two categories of factors may motivate or inhibit a user’s switching to a personalized website. They are (1) experience with the current websites, and (2) perceptions of competitive personalized websites. We will elaborate these two categories of variables as follows.

2.1 Experience with Current Websites

In the physical channel, consumers’ switching behaviour from one service to another service is affected by two categories of variables, experiences derived from the current website and users’ involvement level (Shukla 2004). Since there is little IS research on users’ switching behavior in the digital channel, our study borrows these constructs from marketing study, and examines how users’ pleasant navigation experience and their involvement in the current website influence their switching intentions. We anticipate that an unpleasant experience caused by difficulty in locating relevant content on the current website and low involvement will lead to a higher tendency toward website-switching.

2.1.1 Information Relevance (R)

The tremendous amount of information released on the web creates the problem of information overloading, and information relevance has been regarded as a website quality factor in IS research
Though the Internet is causing the information overloading problem, it offers ways to combat it. If websites are simple, the design elements of the site, such as menus and site maps, can help users navigate the websites (Garrett 2002; Wolfinbarger and Gilly 2001). For some complicated websites with thousands of pages, they rely heavily on adaptive interfaces and personalization technology to improve information relevance in the hope of keeping their users interested. Personalization tailors content to individual needs, reduces the amount of delivered contents and increases information relevance. This aligns with the claims by Jeff Bezo, that personalization can dramatically improve their users’ chances of finding what they want (even if they didn’t know it was what they wanted) from a 1,000 to 1 chance in a regular bookstore, to a 50 to 1 chance at Amazon.com (Anonymous 1998). This can stimulate more users’ exploration with ease and pleasure (McKinney et al. 2002). Thus, we anticipate that the low content relevance of the current website is a factor motivating one to move to a personalized site.

Hypothesis H1a: If information relevance is high in the current website, it is less likely that the user will switch to a personalized website.

Information relevance is more crucial in search engine websites than in online shopping websites. First, users have more focused goals when they use a search engine. They are looking for specific information. They demand a higher level of information relevance. Conversely, shopping users browse the online shops without a concrete goal. Since users have a less concrete goal, the level of information relevance is relatively less well-defined (Tam and Ho 2006). Second, search engine websites, in particular meta-engines, manage millions, or even billions, of web pages, whereas a typical online shop is made up of thousands of pages only. Information relevance is more critical in search engine websites. Hence, we hypothesize the following:

Hypothesis H1b: The effect of information relevance on users’ switching intention to a new website is more salient for Internet search engines than online shopping sites.

2.1.2 Level of Involvement (I)

User involvement is of interest to researchers because of its potential impact on willingness to revisit the website. Prior research shows that users’ level of involvement has a direct, positive and significant impact on their willingness to purchase (Gammack and Hodkinson 2003), their motivation to process the information (Hess et al. 2006), the way they process information (Johnson and Eagly 1990), and their switching behavior from one brand/product to another (Keaveney and Parthasarathy 2001). Involvement is a motivational factor. If users are involved in a website, then they recognize the good features of the site easily, and prefer and insist upon using it. Ultimately, they repeatedly visit it with little thought, and this leads to higher reluctance to switch to other websites.

Hypothesis H2a: If a user is highly involved in a website, then it is less likely that he/she will switch to a personalized website.

We believe that the effect of user involvement on users’ switching intention is more salient in online shopping sites than in search engines. Most search engines provide similar functions. They receive users’ queries, and then generate a result list. Hence, there is no great perceived variation in functionality across search engine websites. On the other hand, the variation among online shops is large. Online shops vary in topics and theme, presentation of information, service quality and so on. Hence, involvement is more influential to determine users’ switching behaviour in online shops than in search engine websites.

Hypothesis H2b: The effect of the involvement on users’ switching intention is more salient for online shopping sites than Internet search engines.
2.2 Perceptions of the Competitive Personalized Website

The other category of variables is related to users’ perception of the new personalized websites. If online firms want web users to switch from competitors’ websites to their websites, they usually try to enhance its functionality to attract users. According to the Technology Acceptance Model (Davis 1989; Davis 1993; Venkatesh et al. 2003), the two variables, perceived usefulness and perceived ease of use, are technology-related factors influencing users’ intention. Moreover, since personalization arouses a list of social ethical issues, we include a factor, namely privacy concerns, and study its effects on users’ switching intention.

2.2.1 Perceived Usefulness (U) and Perceived Ease of Use (E) of Web Personalization

In IS literature, innovation adoption research provides a theoretical framework with which to identify the innovation-related factors in order to assess their impact on adoption intention. One of the established models is the Technology Acceptance Model (TAM), which has been applied extensively to identify factors that facilitate or inhibit the adoption of an innovation (Al-Gahtani and King 1999; Bajaj and Nidumolu 1998; Venkatesh et al. 2003). In this study, two of its constructs, perceived usefulness and perceived ease of use of personalized services, are examined.

Perceived usefulness is defined as the degree to which a person believes that using a particular system would enhance his/her job performance (Davis 1989; Venkatesh et al. 2003). In the context of a personalized website, perceived usefulness is how useful the recommended content generated by personalization technologies is. For online shopping websites, perceived usefulness is related to the capability of personalization agents to generate recommendations to match users’ spontaneous preferences and needs during online shopping; whereas for search engine websites, perceived usefulness is how relevant to users’ queries the search results are. Here we hypothesize the following:

Hypothesis H3a: When a user perceives personalized services to be useful, he/she will switch to a personalized website.

Online shopping is a hedonic activity, whereas searching is a goal-oriented task (Wolfinbarger and Gilly 2001). With a more concrete goal, users can differentiate relevant content from irrelevant content more easily (Tam and Ho 2006). Hence, we anticipate that the perceived usefulness is more salient in search engine websites than online shopping websites.

Hypothesis H3b: The effect of perceived usefulness of personalized services on users’ switching intention is more salient for Internet search engines than for online shopping sites.

Perceived ease of use is defined to be ‘the degree to which a person believes that using a particular system would be free of effort’ (Davis 1989; Venkatesh et al. 2003). The ease of use of user-centric software is very important (Agarwal and Karahanna 2000). In our context, it refers to the ease of operating a personalized website on the user’s side. The following hypothesis is proposed:

Hypothesis H4a: When a user perceives personalized services to be easy to use, he/she will switch to a personalized website.

The interfaces of search engines and the operation of search processes are simple. On the search engine websites, users rely on simple interfaces to input a few keywords, and then search engines provide users with a list of hyperlinks. Compared with search engines, online shopping sites seem to be more complex. The sites contain multimedia content and request users to input much information to complete their purchases. Thus perceived ease of use is more influential in the context of online shopping. The following hypothesis is proposed:
Hypothesis H4b: The effect of perceived ease of use of personalized services on users’ switching intention is more salient for online shopping sites than for Internet search engines.

2.2.2 Privacy Concerns (P)

Apart from the technology-related factors, prior IS research also explores ethical issues related to personalization (Kramer et al. 2000; Stewart and Segars 2002; Volokh 2000). Users face a dilemma: although they demand more personalized services, they are increasingly concerned about privacy infringements and how their information is being used by online firms. Users are concerned about how their purchase histories and navigation behaviours are analyzed and whether this information may be abused (Nash 2000; Pitkow et al. 2002). Thus, we anticipate that users’ concerns will affect their chance of switching to a personalized website.

Hypothesis H5a: Privacy concerns discourage a user from switching to a personalized website.

Users provide more personal information on an online shopping website. Critical personal details include age, household income and credit card number. On the contrary, users provide fewer personal details on a search engine website. Hence, we anticipate that users’ privacy concerns are more influential to users’ intentions to switch to a new website if the new site is an online shopping website, rather than a search engine website.

Hypothesis H5b: The effect of privacy concerns on users’ switching decisions is more salient for online shopping sites than for Internet search engines.

3 METHODOLOGY

3.1 Samples

An online survey was conducted. We advertised our online survey to students in public universities in Hong Kong. There were two sets of questionnaires. One questionnaire asked users for their opinions on switching from a general shopping site without personalized services to a personalized shopping website, whereas the other questionnaire asked users for their opinions on switching from a general search engine to a personalized search engine website. Subjects were randomly assigned to answer one set of questionnaires. We provided a hyperlink which shows the interfaces of typical online shopping sites (or search engine websites) on the survey website. The subjects could click on the hyperlink to gain a general idea of the website if they wanted to. The subjects were asked to complete a questionnaire which consisted of 36 questions. All questions were measured on a 5-point Likert scale. Subjects took 20 minutes to complete the questionnaire online.

We collected 192 valid responses. 73 males and 119 females were involved. Their average age was 21.67 years old. There was no significant difference in age (online shopping group: 21.04; search engine: 22.29, p>0.1) and gender (online shopping group: 59% females; search engine group: 65% females, p>0.1) between the two survey groups. All subjects were computer users. On average, they spent 7.12 hours on computer work or web browsing every day and they had 6.15 years of Internet browsing. Nearly all of them had general knowledge of online shopping, online payment and e-banking, and 81.77% (=157/192) reported that they had shopped online, such as movie tickets, books and grocery shopping from online supermarkets. About 90.10% (=173/192) had experience with or had heard about personalized websites, such as iGoogle, Amazon and My Yahoo. We believe that they had reasonable knowledge about personalization, and hence their responses in the survey were deemed to be valid.
3.2 Measurements of Variables

The statistical analysis was performed with SPSS version 16.0. To assess convergent and discriminant validity, we factor-analyzed the items for the instruments. Table 1 shows results of the factor analysis and reveals the item loadings were consistent with five distinct theoretical constructs. A five-factor solution was obtained with all component eigenvalues greater than one. The factors were level of involvement (I), information relevance (R), privacy concerns (P), perceived usefulness (U) and perceived ease of use (E) of web personalization. These factors explained 89.17% of the total variance in the survey. Items loaded highly (> 0.80) on their associated factors. The Cronbach alpha values for the constructs are shown in Table 2. Consequently we concluded the instruments were statistically valid and reliable.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Involvement (I)</td>
<td>0.93</td>
</tr>
<tr>
<td>Information Relevance (R)</td>
<td>0.97</td>
</tr>
<tr>
<td>Perceived Usefulness of Web Personalization (U)</td>
<td>0.87</td>
</tr>
<tr>
<td>Perceived Ease of Use of Web Personalization (E)</td>
<td>0.94</td>
</tr>
<tr>
<td>Privacy Concerns (P)</td>
<td>0.95</td>
</tr>
</tbody>
</table>

3.3 Results

A logistic regression was conducted, with the likelihood of switching to a personalized website as the dependent variable (1 = decide to switch; 0 = decide not to switch). The explanatory variables were the five factors (i.e. users’ involvement, information relevance, perceived usefulness, perceived ease of
use of personalization, and privacy concerns). We included the interaction effects between each of these five variables and the type of websites (1 = online shopping website; 0 = search engine website) in the logistic regression model.

Consistent with H1a, information relevance is a significant factor affecting users’ decision \((p < 0.01, \text{ coefficient } = -0.35)\). Users would switch to a personalized site from a site whose content was irrelevant or not well-organized. Users considered personalization agents to be a tool to solve the information-overloading problem. The significant interaction effect between information relevance and type of websites showed that information relevance influenced users’ decision to switch to a personalized search engine website more significantly than their decision to switch to a personalized online shopping website \((p < 0.01, \text{ coefficient } = 0.51)\), supporting H1b.

Involvement with the current websites was a marginal significant factor that influenced whether users switched to a website or not. Users who were highly involved in the website showed higher resistance against switching to a new website. The result was consistent with H2a \((p < 0.1, \text{ coefficient } = -0.22)\). The significant interaction effect between users’ involvement and type of websites showed that involvement influenced users’ decision to switch to a personalized shopping website more significantly than their decision to switch to a personalized search engine website \((p < 0.05, \text{ coefficient } = -0.35)\). It was consistent with the prediction of H2b.

Participants who perceived personalization to be useful were willing to switch to a personalized website \((p < 0.01, \text{ coefficient } = 0.54)\), supporting H3a. Perceived usefulness was found to be more influential in switching behaviour across search engines than shopping sites \((p < 0.05, \text{ coefficient } = 0.58)\), supporting H3b.

Ease of use was a marginal significant factor, marginally supporting H4a \((p < 0.1, \text{ coefficient } = 0.22)\). There was no interaction effect between perceived ease of use and type of websites, not supporting H4b \((p > 0.1, \text{ coefficient } = 0.11)\).

Privacy infringement from personalization had no direct effect on users’ intention to switch to a personalized website, rejecting H5a \((p > 0.1, \text{ coefficient } = -0.18)\). However, there was a significant interaction effect between users’ privacy concerns and type of websites, supporting H5b \((p < 0.05, \text{ coefficient } = -0.37)\). The subjects showed a higher privacy concern in online shopping websites than in search engines. Generally, online shoppers raised questions about how much data was tracked by online shopping websites. Some even wondered whether the firms would sell their profiles and transaction details to some marketing survey companies or other online firms.

4 DISCUSSION

Despite the widespread adoption of personalization software and the strong advocacy by management gurus (Albert et al. 2004; Bakos 1991; Tam and Ho 2005; Tam and Ho 2006) on the use of personalization services as a differentiating strategy, little has been done to assess the effectiveness of web personalization, in particular its effects on attracting new users. The current work is among only a few pioneering efforts that empirically assess the effects of web personalization on users’ website-switching behaviour. The findings of our work are applicable to a wide range of web-based services that target the attraction of users. There are four implications.

First, our research indicates that personalization can be a useful marketing strategy to attract new users. Users prefer useful and easy to use personalized services. Perceived usefulness of personalization is a significant factor in attracting new users. Thus, it is worthwhile for firms to invest in data mining to analyze the transaction patterns among like-minded people. Perceived usefulness was found to be more influential in search engines than in online shops. It was probably due to the fact that some shoppers visiting the websites do not have specific items to purchase. They browse the websites to kill time, and hence, perceived usefulness is relatively less important in online shopping sites.
Secondly, usefulness dominated ease of use, and this aligns with some IS studies (e.g. Davis 1993; Elbeltagi et al. 2005). From a research point of view, the difference between the findings of prior studies (significant influence of ease of use on behavioural intention) and this study (insignificant influence) may be due to the nature of the sample. Web users today are generally more computer literate than their counterparts ten years ago. This was supported by the descriptive statistics. The subjects perceived personalization agents as not difficult to use (mean = 4.19, S.D. = 1.37). From a practical point of view, it may imply that users use a technology mainly because of its usefulness. Therefore, ease of use may have been less of an issue for this sample than it would have been for the samples used in prior studies. Owing to this general improvement of computer literacy among web users, the relationships found to be valid in prior work may need to be re-examined.

Thirdly, our empirical findings show that the nature of the interactions occurring among web users and their sites was also an important factor. If the interactions are frequent and involved, web users are more reluctant to switch to a new site, even though the new site provides personalized services. Thus, websites cannot use personalization as a marketing strategy to attract new users from a high-involvement site to a personalized one. Examples of high-involvement websites included network games and online chat rooms.

Lastly, while web personalization has been shown to be effective in attracting new users, its use should be balanced by taking a proactive approach towards protecting data privacy on the users’ side. Consistent with prior IS work, our findings showed that online shoppers are concerned about their privacy (Awad and Krishnan 2006). Threats to user privacy involve tracking users without their consent, divulging users’ profiles online, buying (or selling) users’ profiles from (or to) other firms, or falsifying and misinterpreting the mining results to support a predetermined marketing goal. Users face a dilemma: while they demand more personalized services on one hand, they are increasingly concerned about privacy infringements and how their information is being used by online firms on the other hand. Governments and organizations are working on different codes of conduct to guarantee fair access to individuals’ personally identifiable information. For instance, the Australia Direct Marketing Association representing 500 firms in the information based marketing industry has a Code of Practice which governs all aspects of direct and data-driven marketing. The Code serves as a reference for firms and organizations. The Code makes sure that firms comply with all applicable state and commonwealth laws when analyzing users’ profiles for personalization.

5 CONCLUSIONS AND FUTURE RESEARCH

To summarize, our work investigates the motivating and inhibiting factors for online users to switch to a personalized website. In particular, two types of websites, online shopping sites and search engine websites, were examined. Our work provides empirical evidence showing that users want useful personalized services, but at the same time, they are concerned with the manner in which the firms use their data for personalization. If users have involved interactions with their current site, then personalized services are not attractive enough to motivate them to migrate from one site to another. It provides insights to online firms who plan to incorporate personalization tools in their websites, and the drivers for users’ switching behaviour among online shopping sites and among search engine websites. Users’ privacy concerns, perceived usefulness and perceived ease of use of personalized services are more influential factors affecting users’ decision to switch (or not to switch) to a personalized online shopping site; whereas information relevance is a more influential factor affecting users’ switching decision to a personalized search engine.

This study has two limitations. Firstly, this research only addressed users’ intention to switch to a new website. Would they rely on the personalization and purchase the recommended items on an online shopping site? Would they click on the sponsored hyperlink on a search engine website? Conducting experiments would be useful to give insights on users’ consideration of personalized and general content. Secondly, since our work focuses on users’ intention to switch to a personalized website, we do not know how the users behave after switching to a personalized site. Can personalization services
retain them? Would their switch be permanent or temporary? Would they develop a sense of loyalty and trust in the long run? A longitudinal field study might contribute much to this area of research.

REFERENCES


Users’ Involvement
I1. I am involved with the current online shopping website (or the current search engine).
I2. I use the current online shopping website (or the current search engine) very frequently.
I3. I have a feeling that I stick with the current online shopping website (or the current search engine).

Information Relevance
R1. It is easy to get relevant information from an online shopping website (or through a search engine).
R2. I find it to be easy to retrieve relevant information from a website.
R3. It is trouble-free to retrieve relevant information from a website.

Privacy Concerns
P1. Personalization causes privacy problems because it may keep track of my web behaviour.
P2. Personalization causes privacy problems because it may monitor my clicks and browsing records.
P3. Personalization causes privacy problems by exposing my personal information to unknown parties.

Perceived Ease of Use
E1. Learning to operate a personalized online shopping website (or a personalized search engine) would be easy to me.
E2. My interaction with a personalized online shopping website (or a personalized search engine) would be clear and understandable.
E3. I would find a personalized online shopping website (or a personalized search engine) to be flexible to interact with.

Perceived Usefulness
U1. Using personalization for Internet shopping (or online searching) would make the process easier.
U2. I would find personalization useful for Internet shopping (or online searching).
U3. Using personalization would enhance the effectiveness of Internet shopping (or online searching).

Behavioural Intention (A Binary Variable: 1 = decide to switch; 0 = decide not to switch)
B1. Assuming I had access to personalization, I intend to use it.
B2. Given that I had access to personalization, I predict that I would use it.

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1 If a subject provides inconsistent response on these questions, the data point will be discarded.