

Internet banking and the Technology Acceptance Model

The role of trust

Internet
Banking

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1

Abstract - It is very important that science and its theories are applicable to real life situations and in this case, today's technology. This study analyses how and to which extent the Technology Acceptance Model needs to be adjusted in the Internet banking industry to maintain its applicability. One of the most important variable for users of Internet banking, except for perceived usefulness and perceived ease of use is trust, which becomes the missing variable to make the model up to date.

Purpose - The purpose of this study is to enhance the importance of updating older technology models and theories, and find which variables that are missing and needs to be updated or considered when using the Technology Acceptance model. This research will give better insight to those working with or researching on the acceptance of Internet banking.

Design/methodology/approach - A cross-sectional study in the shape of a survey was used to get as many and diverse answers as possible.

Findings - The results showed the importance of adding the variable of trust, or in other words privacy concerns, to the model. It is important to see the difference between using a service due to lack of similar substitutes, and truly accepting a service. To develop the model and its theories more thorough and correct, further research is necessary.

Originality/value - Other researchers has used the discussed model when studying the adoption of Internet banking, but none has indicated that important variables are missing. Assumptions based on a model that can be seen as out of date has been made, and the importance of enhancing the trust variable is rarely mentioned.

Keywords - Internet banking, privacy concerns, technology acceptance model

1. Introduction

The usage of Internet banking has grown rapidly in the last decade, alongside the Internet. The IIS's (Internetstiftelsen i Sverige) report shows

that 94% of Swedish citizens use Internet banking services. A third of the users visit through a mobile phone which is twice as many as in 2013 (IIS, 2016). This has resulted in major changes as to how the banks operate, i.e. when the Internet grew - so did the banks' number of services (Chechen, Yi-Jen, & Tung-Heng 2016). The challenges the industry is facing today are developing newer and faster software whilst struggling with keeping the security (Jarrett, 2015). The success of these new services is not only determined by the bank, but more or less by the acceptance from the users (Ege Oruç & Tatar, 2017).

2. Acceptance

2.1 Privacy concerns

One amongst consumers experienced problem with Internet and Internet banking is privacy. This makes the security in transactions essential (Chechen et al., 2016). Since the definitions of terms may vary, Dinev and Hart (2005) chose to define privacy concerns as a fear of losing privacy due to a disclosure of information, voluntarily or not. Many researchers has tried to explain the correlations between privacy concerns and many different variables. Bergström's (2015) research showed that the single most important variable to high privacy concerns was the overall trust in other people. If the respondents had high trust in others, they were less worried about misuse of personal information (Bergström, 2015). A study by Boateng, Adam, Okoe and Anning-Dorson (2016) showed that trust was directly linked to the adoption of Internet banking amongst customers, and therefore plays a big role in the adoption process.

2.2 Age differences

Studies has shown that younger segments are more willing to take risks than the older segments. Regarding internet banking, the older segments are even more careful than usual, which according to Søylen, Nerme, Stenström and Darefelt (2013) is due to how new and unfamiliar the service is. This makes it important for the banks to study how fast the different segments adopt new technology and innovations. These findings indicates that different segments need different kinds of information, i.e. the

targeting needs to be customized for each segment to ensure efficiency (Søilen et al., 2013).

Porter and Donthu's (2006) research implicates that a company is only wasting time if trying to educate the older segment, since they already understand the importance of the Internet, but simply find it costly and hard to use. Instead, they suggest that marketers focus on e.g. creating training programs that allow them to learn at their own pace and/or lowering the cost of Internet access (Porter & Donthu, 2006).

2.3 User acceptance

How accepting and open a customer is depends on the perceived usefulness of the service. Liao and Cheung (2002) studied the consumer attitudes toward internet banking and created a number of propositions to help them analyse the different attitudes. One interesting proposition is the following (Liao & Cheung, 2002, p. 285);

Expected transactions speed is a significant quality attribute in the perceived usefulness of Internet-based e-retail banking.

This proposition indicates that customers find it important that the service is fast and easy, and that if slow, the perceived usefulness of the service would be much lower (Liao & Cheung, 2002).

2.4 Technology acceptance model (TAM)

Davis' (1989) explains how previous research shows that there are two determinants for how well a user accepts information technology; perceived usefulness (PU) and perceived ease of use (PEOU). He defines perceived usefulness as "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989, p. 320). This determinant shows how people use or not use an application due to to which extent they find it helpful for a better performance. This, however is not enough to determine whether or not a user will accept the technology.

Even if it helps the user perform better, it does not ensure an easy user experience, which is why perceived ease of use is important. This is defined as "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989, p. 320). It is important to find a balance between the two determinants to avoid the possibility that the difficulty of usage outweighs the benefits of usage. This indicates that the usefulness is influenced by the ease of use.

These findings and explanations resulted in a very famous theory, namely the *Technology acceptance model* (TAM) (see Figure 1). The theory illustrates how PU and PEOU affect people's computer acceptance behaviours, i.e. their attitudes to using (A). Computer usage is determined by behavioral intentions, which is jointly determined by the attitudes toward using (A) and perceived usefulness (PU) (Davis, Bagozzi & Warshaw, 1989). Lee, Tsai and Lanting (2011) made a comparison of the TAM and consumers adoption of online banking, and found a correlation. Their study confirmed that if the users perceive the internet banking services as useful and easy to use (i.e. PU and PEOU) they are more likely to use the service.

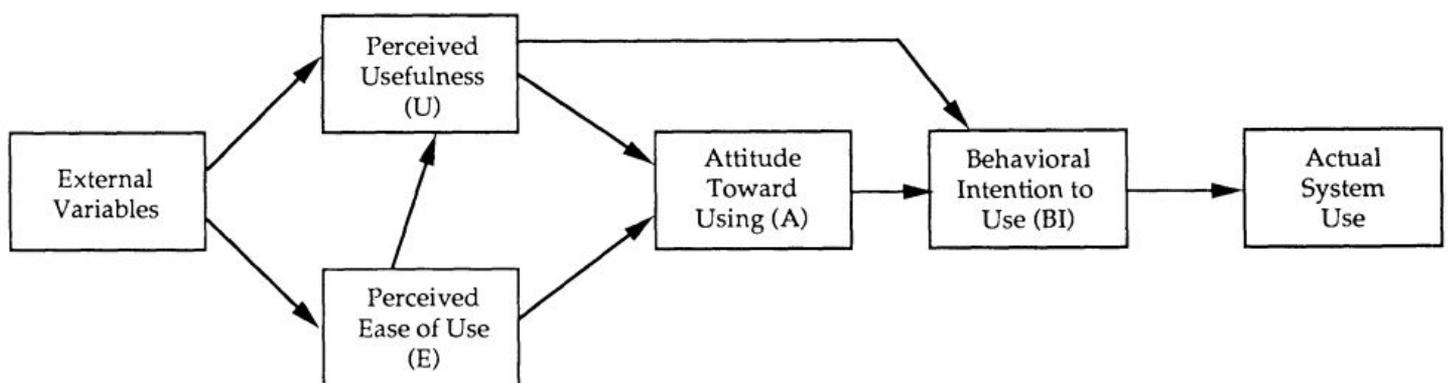


Figure 1. *Technology Acceptance Model (TAM)*. Davis, Bagozzi & Warshaw, 1989, pp. 985.

3. Methodology

To be able to get a broad spectrum of answers to how users perceive Internet banking, a survey was done. The theoretical population consisted of everyone who at some point have used an Internet banking service. Considering the limited amount of time and resources, limitations had to be done. The survey was only shared in Sweden, and made public through Facebook. It was made public to increase the response rate and different ages of the respondents. The sample size was set at minimum 200, and when the survey was closed two days later, 241 answers were registered. The publication makes it impossible to calculate a correct response rate, but at least 650 persons saw the survey which resulted in a minimum response rate of 37%.

The survey consisted of 9 questions in Swedish, to minimize translation errors for the respondents, with 7 mandatory and 2 of them were gender and age. This results in 5 directly related questions. The first question was gender, and the second was age. Gender had four possible answers, to avoid a bias of the answers not being emptying; man, woman, other/undefined and do not know/do not want to answer. Age was divided in groups of 10 years, i.e. 16-25, 26-35 and so on, to make sure that the answers were mutually exclusive and emptying. The third question was “How often do you use Internet banking services?” to be able to make a deeper analysis and categorize the respondents.

The fourth question, “I feel safe when I use my Internet banking services” referred to the level of trust the respondent feel for his/her Internet banking service. The previous research discussed above indicates that the level of trust and privacy concerns affect the acceptance of the service. The answers were presented on a Likert scale and followed by a control question for those who did not trust the service. The control question was an open answer question, to give the respondents space to be creative and express their complaints freely. The purpose of this question was to investigate to

which extent the respondents felt safe or unsafe, and why these feelings occurred.

The purpose of the question “I find using my Internet banking services easy” was to confirm the theories in the TAM, i.e. to see how the respondents perceived the ease of use. This question was also followed by an open question to those who did not perceive the service as easy to use. This to get more direct and clear answers to what the problem might be.

To gain a broader perspective of which services the users find more comfortable performing over the Internet, the survey purposed six services and one open answer they should reflect on;

- apply for loan
- open new account
- manage bank papers
- manage retirement savings
- pay bills or invoices
- I’m comfortable with all of the above
- Other

This question was asked to see if which services the respondents felt most unsafe, and therefore were perceived as more risky. It also shows to which extent a respondent trust the Internet banking services. The last question of the survey was an entirely open answer question, were the respondents were asked to present three words that they connect with Internet banking services.

4. Results and analysis

The results confirmed the popularity of the service, since 43,6% uses the service daily and equally many uses it 1-2 times a week (see table 1).

| | |
|-----------------|-------------|
| Daily | 105 (43,6%) |
| 1-2 times/week | 105 (43,6%) |
| 1-2 times/month | 27 (11,7%) |
| 3-4 times/year | 0 (0%) |
| 1-2 times/year | 2 (0,8%) |
| More rarely | 2 (0,8%) |

Table 1. How often do you use Internet banking services?

The more analyzing questions gave a more clear answer to why the service is so popular. The results on the question regarding perceived ease of use showed that 62,7% found Internet banking very easy to use, and 28.2% easy to use. When asked how to best describe the service in three words, the most used words were convenient/flexible, fast and easy to use. Those who were unsatisfied and answered the open question mostly found the Internet as troubling, and therefore also the Internet banking services. These findings, that some respondents felt it was difficult to use, can not be directly connected to the actual service of Internet banking. In the open question, they specifically answered that the Internet was the problem, even though they might believe it is the service. This supports the theories in the technology acceptance model. It shows that many are accepting the service so well because it is perceived as very easy so use.

The results of the study confirmed the TAM and previously mentioned research, that PU and PEOU determine whether or not a consumer uses the service. Others have even made a comparison of the TAM and the adoption of Internet banking. The study's results showed that the TAM is useful when looking at the adoption of Internet banking, and that the consumers were

more likely to use the service if it was easy to use. However, important variables are left out. The TAM claims that the usage of the service is also determined by the attitudes towards using. The attitude can depend on more than how easy a consumer perceives the service. The question studying trust gave some interesting results. Even though the majority answered that they felt safe when using the service, those who felt unsafe cannot be ignored. Interestingly, there was no clear demographic pattern amongst those who felt unsafe. However, there was a pattern in what made them feel unsafe. By those who answered the open question, 77% felt unsafe because the service was offered online, and 70% of those were afraid of hackers or cyber attacks.

As mentioned, the success of such a service depends on the overall acceptance of the users. All of the above shows very clearly that the consumers are worried about their privacy and feel unsafe when using the service. Many answered that the service was easy to use, but that they felt unsafe and a lack of trust. The other studies that showed the importance of trust should be seen as a warning bell that the TAM is starting to become out of date. Researchers strictly pointed out how trust was directly linked to the adoption of Internet banking, which proves how important of a variable it is to consider.

It is essential for the banks distributing the services that their customers feel safe. The updated TAM should be able to show the banks how crucial the privacy concerns are for their users, and if or how many more users they can get if they focus on what makes the customers feel unsafe and how these issues can be taken care of. This, making the customers feel safe and less worried about their privacy, could result in greater consumer loyalty for the distributors.

One explaining factor important to discuss is when the TAM was created, namely, in 1989. The theories were made under different circumstances and in a different time. When the model was first created, these issues had not yet occurred, since these kinds of services did not exist. As mentioned, the

Internet's growth has been tremendous, which has affected the supply of Internet based services, such as Internet banking. The researchers did not have to take such serious matters into consideration when creating the model. However, the model is still used in today's research, since the explanation level is very high and the theories are well tested.

5. Conclusions, limitations, and further research

It is very important that science and its theories are applicable to real life situations and today's technology. Older models regarding technology and Internet needs to be overseen and updated as the surrounding changes. The respondents were using the service, and according to TAM the users should be happy and have accepted the service. This study shows otherwise. The respondents are using the service, but have not fully accepted it. The usage depends mainly on the ease of use and lack of other similar services, and not on the trust of the companies or their services. To gain a full acceptance from customers, they need to feel safe when using it. These results indicate that the Technology Acceptance Model needs to be overseen and corrected, or at least enhance the importance of trust and privacy concerns in today's Internet services.

However, to be able to update the actual model, or create a new model based on the TAM, a deeper and more thorough research needs to be done. This study has faced limitations in resources, mainly time, and can therefore be seen as a start and an implication to the further research that needs to be done.

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