

Conceptualizing Initial Trust in Internet Banking Services: A Pilot Study

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Abstract

The adoption rate of Internet banking services (IBS) is considered to be relatively high in the developed countries; which is not the case for developing countries. The lack of trust plays a vital role in discouraging users from adopting IBS. Therefore, initial trust could be the starting point of making customers comfortable processing their banking transactions online. This study aims to propose a conceptual model of initial trust in IBS in developing countries. The proposed model integrates its constructs from: the trust literature, diffusion of innovation theory (DoI), and Hofstede's national culture theory. This paper also aims to develop and validate a research instrument in order to examine the proposed model. We conducted a pilot study in Jordan, which is one of the developing countries, and refined the model and its instrument based on the obtained results.

Keywords: Initial Trust, Developing Countries, National Culture, Customer Behavior.

1. Introduction and Background

Internet banking services (IBS) defined as the bank's ability to deliver their services electronically. It started in the early 1980's [6]. The adoption of IBS offers many advantages such as: saving time and cost, availability of the services at any time, and convenience. In developed countries, the usage level of IBS is quite high compared to developing countries. A study published by Statista.com in April 2012 showed that countries in the Middle East and Africa have the lowest rate of IBS penetration [29]. The following figure shows the penetration rate of using IBS for different regions of the world.

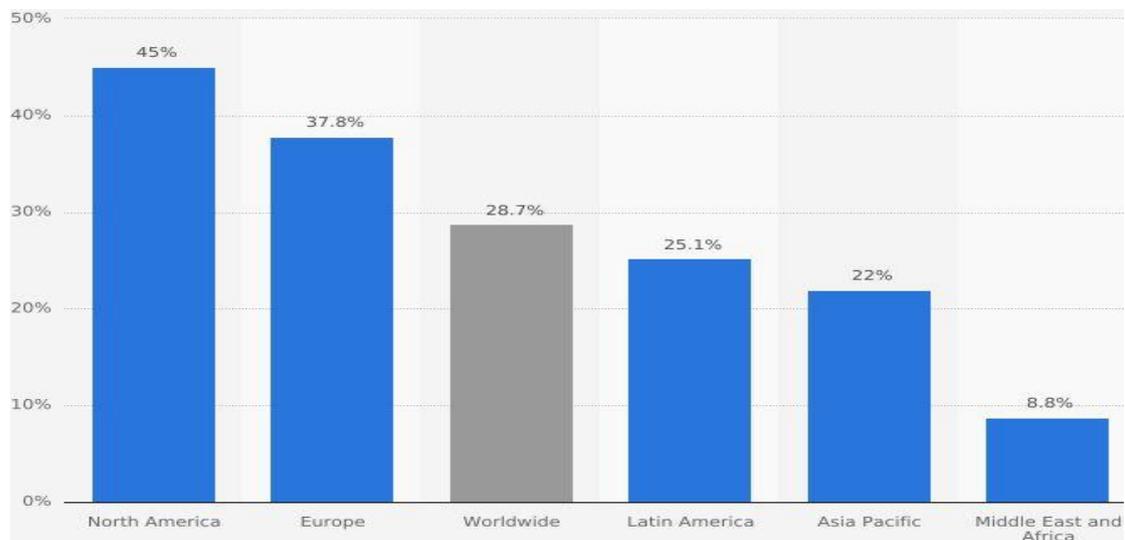


Fig. 1. Global online banking penetration in April 2012, by region (in percent)

The figure above shows a big gap in IBS penetration between developed and developing countries. Understanding the factors that affect IBS adoption is important to justify this large gap. Previous studies argued that many factors affect the penetration rate of using new technological innovations; and they have particularly considered trust to be the most influential factor to adopt new innovations [13, 24, 23] and IBS in particular [17].

Obviously, winning the customer's trust could be the first step to increase the level of IBS adoption. In the context of developing countries, it is important to focus on the first stage of trust, which is known as initial trust. Consequently, investigating initial trust in IBS in developing countries will enhance our understanding of the problem and suggest valuable solutions for it. Therefore, in this paper we focus on initial trust in IBS in developing countries to fill the gap of studies between developed and developing countries.

There are two objectives for this paper: firstly, identify and determine the factors that affect initial trust in IBS to propose a unified model for developing countries. Secondly, developing and validating a research instrument to examine the proposed model empirically. In this paper, we selected Jordan, as one of the developing countries, to validate the developed instrument.

This paper is organized as follows. Section 2 provides a review of related studies. Section 3 presents the research model and the developed instrument of this research. Section 4 presents the pilot study and its major results. Section 5 discusses the outcomes of the pilot study. Finally, the paper rounds off with a conclusion.

2. Literature Review

Trust plays a significant role in affecting customer's behavior to adopt new innovations. In this section we discuss previous studies, which focus on initial trust in online environment, especially IBS. In addition, we present a unified model based on existing studies in the literature, diffusion of innovation theory, and Hofstede's national culture theory.

2.1. Initial Trust in Online Environment

Many studies agreed that initial trust is the milestone of a successful relationship between users and unknown e-vendors [24, 23, 16]. Initial trust is defined by McKnight et al [24] as the construct that measures trust level at the beginning of new relationship and before the customers built their attitude on that relationship.

A systematic literature review for initial trust in online environment was conducted in [2]. The review revealed that most of previous studies were conducted in developed countries, while only a few studies have focused on developing countries. Moreover, the reviewer also showed conceptual models were mainly constructed on the trust literature and other technological theories, such as diffusion of innovation theory (DoI). In addition, large portion of the literature investigated initial trust in online retailers, while internet and mobile banking was investigated in a limited number of studies [15, 17].

2.2. Factors Affecting Initial Trust

In this section, we identify factors that affect initial trust in developing countries and their significance.

Initial Trust Antecedents

Most of previous studies shared the investigation of five antecedents which are: personality based-trust (also known as propensity to trust or disposition to trust), cognition based-trust, institution based-trust, economic trust base, and knowledge based-trust [13]. Kim [16] argued that initial trust is influenced only by personality based-trust, cognition based-trust, and institution based-trust; as initial trust does not depend on previous experience, which is argued to be linked to economic and knowledge based-trust.

In this study we will use disposition to trust as a concept of personality based trust. It is defined as the tendency to believe in the positive attributes of others resulting in trusting them [24]. Many empirical studies found that disposition to trust plays an important role in forming initial trust [24, 17, 16, 34], as it affects the perception of the individual to trust someone initially [10].

The second antecedent is cognition based-trust, which considers the first impression or meeting as the base to build the trust on it. In other words, cognition trust base use the impression instead of the previous experience to build trust. Reputation is used in the literature to represent cognition based-trust, which was found to be a significant factor for affect initial trust formation [30].

The last antecedent is institutional based-trust. Gefen et al [13] stated that the level of initial trust that the individual has is positively related to the perception that dealing with trustee is meeting a common standard. In addition, McKnight et al [23] mentioned that this antecedent has two predictors. Firstly, situational normality: it assumes that if the situation is normal, then the success is likely [20]. They examined situational normality and found it to be significant factor. Secondly, structural assurance: which is studied in this paper from organizational and technological perspective. Moreover, previous studies found that technological structural assurance [13, 15, 17, 23, 24] and organizational structural assurance [20] have significant effect on initial trust. Technological structural assurance is defined as “The belief that the web has protective legal or technological structures that assure that web business can be conducted in a safe and secure manner” [24]. Organisational structural assurance, on the other hand represents the safeguards of a place such as promises, contract, regulations, and guarantees [20].

Diffusion of Innovation Factors

The literature indicates that two factors from diffusion of innovation theory influence the adoption of new innovation; relative advantages and compatibility. Rogers [27] defined relative advantages as those that new services offer rather than the existing service including: economic benefits, enhanced personal image, convenience and satisfaction. Relative advantages affect initial trust significantly and positively [15, 30].

Compatibility is defined as “The degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters” [27]. Lin et al [21] stated that compatibility has significant and positive effect on customer’s trust in 3G mobile banking services.

National Culture Factors

According to Leidner and Kayworth [19], the Hofstede’s national culture theory is considered as the most widely used theory in the field of management information systems. Culture is defined as “the collective programming of the mind, which distinguishes the members in one human group from another” [14]. The relationship between national culture and trust was examined in the literature and found to be significant; where in [13] two dimensions of the Hofstede theory were examined. In this study, we will investigate the effect of all Hofstede’s dimensions on initial trust. The following dimensions were introduced by Hofstede [14]: (i) Power distance index (PDI): the extent to which the less powerful members of group or society accept and expect that power is unequally distributed. (ii) Uncertainty avoidance index (UAI): the extent to which the members of group or society feel threatened by unknown situations. (iii) Individualism vs. collectivism (IDV): the extent to which individuals are integrated into groups. (iv) Masculinity vs. femininity (MAS): the extent to which gender roles are assigned in a culture. And (v) long-term vs. short-term orientation (LTO): a society’s preference to be more forward looking or future oriented.

Although the culture effect is proven as a significant on the adoption of new technological innovations [1], a few studies examined it on initial trust in an online environment. For

instance, [12] examined the effect of national culture effect on trust attitude and found it significant. Accordingly the national culture will be incorporated in this study.

Internet Related Factors

Previous studies examined additional factors to those which we mentioned earlier. This group consist of perceived security [23, 30, 3], perceived privacy[15, 19], and computer and internet self efficacy [3].

In this study, we define perceived security as the level in which the users feel that their information on the internet is secure. Previous studies considered security of online environment important for adopting new technological innovations [34]. Also, Susanto et al [30] stated that security in trust context has vital role in building trust or initial trust.

We define perceived privacy as the level in which users feel that their information on the internet is private. Susanto et al [12] examined the impact of perceived privacy and found it significant on customer's trust.

The influence of Computer and internet self efficacy has never been examined on initial trust. However, previous studies considered it as one of the factors that influence the adoption of new innovation [18]. Hence, this factor will also be incorporated in this study.

3. Research Model and Instrument Development

This section presents the proposed model and the first version of the research instruments.

3.1. Research Model

The literature provides some studies that investigate initial trust in IBS [17, 30] and in mobile banking [15]. This study extends the models of those studies to create unified model of initial trust in IBS. The key elements of the proposed model are adopted from the existed models. Figure 2 shows the elements of the proposed model elements and their relationships.

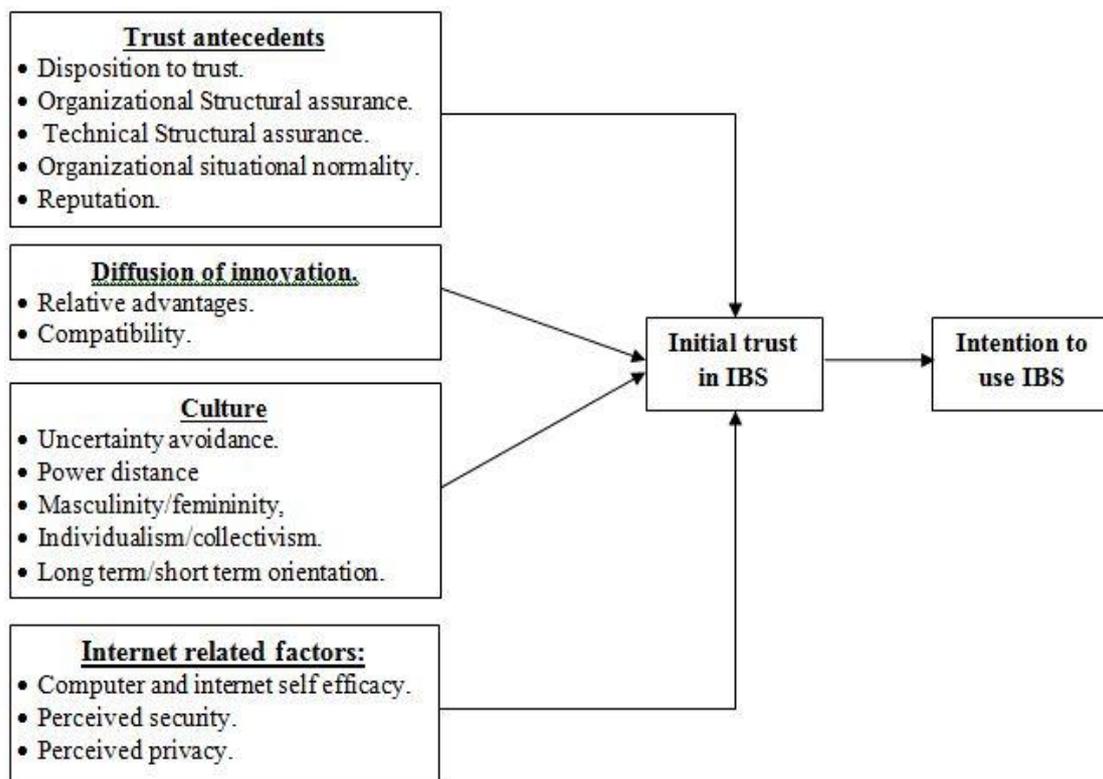


Fig. 2. Research model.

3.2. Research Instrument

The factors of our model are constructed based on the systematic literature review, as well as that we conducted and existing theories. The items of the instrument are adopted or adapted from previous empirical research. Each factor has three items or more to be measured as recommended by [9]. The following table explains the number of items for each factor and the source of those items.

Table 1. The first version of the research instrument.

Group name	factor	Number of Items	The source
Trust antecedents	Disposition to trust	4	[11]
	Organisational structural assurance	3	[20]
	Technological structural assurance	3	[24]
	Organisational situational normality	3	[23]
	Reputation	4	[9]
National culture	Power distance	5	[4]
	Uncertainty avoidance	5	[2]
	Individualism vs. collectivism	3	[2]
	Masculinity vs. femininity	3	[2]
	Long-term vs. short-term orientation	3	[2]
Diffusion of innovation theory	Relative advantages	4	[25]
	Compatibility	4	[25]
Internet related factors	Internet and computer self-efficacy	5	[33]
	Perceived security	4	[18, 7]
	Perceived privacy	5	[7]
Dependent variables	Behavioural intention to use	4	[15, 3]
	Initial trust	3	[32]
Total		65	

4. Pilot Study

The pilot study is defined as an experimental study aimed to complete the ‘trying out’ or pre-testing of a specific research instrument of investigation [5]. The importance of the pilot study is clearly shown in the research methodology books, such as [31]. Performing a pilot study helps in refining the research instrument and increasing the accuracy of the method and the anticipated results.

We conducted our pilot study in Jordan and targeted employees from the education sector as they are educated, have experience in using computers and the internet. 56 valid responses have been collected out of the 75 surveyed subjects.

In this pilot study, we started with validating the content of the instrument using face, content, and construct validity. Then, we conducted detailed item analysis (person’s correlation) techniques to find the correlation between variables in order to remove redundant variables. Finally, a reliability test is used to clean up and optimize the measure of each variable.

4.1. Instrument Validity

Validating the research instrument is considered essential before conducting the main survey. Different types of validity are used to assess whether the instrument is valid: face, content, criterion, and construct validity. However, face validity is considered the key of other types [28]. Face validity is defined as the level in which a group of measurement items represent the concept under investigation [28]. To assess the validity of the instrument under study; we sent the instrument to two PhD students and four expert in the field of management information system. The process is started by sending the questionnaire to two PhD students, who were asked to provide feedback on the wording of the items and their clarity level. The

items were refined based on the received comments and sent to the four experts to examine if the items properly represented the variables and their degree of ambiguity and redundancy. Finally, the instrument has been modified based on the experts' comments.

4.2. Correlation Coefficient Analysis

The Pearson correlation coefficient reflects the strength of linear relationship between two variables. Thus, measuring the correlation between the factors will help in determining the nature of the relationship between them; and consequently, will enable us to identify redundant factors. Statistically, correlation is denoted by r ($-1 \leq r \leq +1$). It is stated in page 314 of Sekaran [28] "if correlations were higher (say, .75 and above), we might have had to suspect whether or not the correlated variables are two different and distinct variables ...". According, if the correlation is greater than .75, then the variables might not considered to be different and hence can be combined.

The correlation coefficient analysis of our data revealed that few variables have high correlation between as follows:

- The correlation between technological structural assurance and security is .867.
- The correlation between technological structural assurance and privacy is .871.
- The correlation between organizational structural assurance and organizational situational normality is .877.

Based on these results, we combined the factors which have high correlation to avoid factors redundancy and multicollinearity.

4.3. Instrument Reliability

According to Sekaran[28], reliability of a research instrument is concerned with its consistency and stability. Inter-item consistency (also known as internal consistency) of a group of items reflects the degree to which this group is homogeneous. To examine the internal consistency of the research instrument, we employ Cronbach's alpha [26], as it has been widely adopted by many researchers [8].

To measure the reliability of the research instrument; we used SPSS 16.0 to test the internal consistency for each construct's items individually. The analysis resulted in: eliminating some items to increase the alpha coefficient. In the current study, the results of the reliability function are used to refine the research instrument. We assessed the items of the instrument, if the results revealed that one or more of the items decrease the reliability of the instrument, they were removed. Malhotra [22] considered a value of Cronbach's alpha more than 0.6 as a satisfactory level, even though many researchers determined 0.7 as a cut-off for the accepted reliability.

We deleted some items based on the results of our data analysis to increase the value Cronbach's alpha; the new version of the instrument has 46 items out of 65.

5. Discussion

The current paper has twofold: firstly it proposes a model of initial trust in IBS in the context of developing countries. The proposed model extends the previous models, which examined initial trust in IBS [17, 30] or mobile banking [15]. The model's factors are mainly extracted from existing related models, as well as from literature of initial trust and IS/IT adoption. In spite of the similarity between our model and previous models, our model has many distinctions. The model discusses initial trust in IBS in the context of developing countries where there is hardly any thorough study in this context. In addition, our model adds the crucial and important factor of national culture. Literature of IS/IT in developing counties showed the importance of national culture in adopting new technological innovations [1]. Also, the proposed model integrates factors from different perspectives such as psychological, technological, social, and organizational.

Secondly, this paper shows the steps of developing an instrument to examine our research model. All the instrument's items are adopted or adapted from existing empirical studies. After we created a pool of items, we validated the content of our instrument. Furthermore, we conducted the pilot study using the instrument and collected the data from 56 subjects and analyzed it. Based on the analysis results, we deleted some items to increase the value of Cronbach's alpha. Moreover, the results showed a high correlation between some factors. Therefore, we combined those factors; for example, we considered technological structural assurance as the represented factor for perceived security and privacy. The literature supported our decision [18]; although they used the same set of items to measure technological structural assurance, they named their variable "trust in the internet" instead of technological structural assurance; they defined it as security and privacy of the internet.

Finally, based on the results of the pilot study we refined the proposed model by combining the high correlated variables, validated our instrument and refined the reliability of the variables, and decreased the number of the items from 65 to 46.

6. Conclusion

This paper proposed a conceptual model of customer's initial trust in IBS in developing countries. The model included factors from different disciplines and perspectives: trust antecedents (disposition to trust, organizational structural assurance, technical structural assurance, organizational situational normality, and reputation), diffusion of innovation factors (relative advantages, compatibility), national culture factors (uncertainty avoidance, power distance, masculinity/femininity, individualism/collectivism, long term/short term orientation), and internet related factors (Computer and internet self efficacy, perceived security, perceived privacy). In addition, we developed a questionnaire to measure the importance of the model's factors and their impact on initial trust; consequently, intention to use IBS. The first version of the questionnaire has 65 items. However, after analyzing the data of the pilot study, 46 items remained. The final version of the questionnaire will be used in the future to conduct a large survey.

In the future work, the researchers intend to extend their work to examine and test the model on new eServices or internet business and shopping. That will help in predicting the level of trust that the new customers will have on new developed services; as well as, fostering trust in newly developed services.

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