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# THE MEDIATING ROLE OF AWARENESS IN THE INTENTION TO USE INTERNET BANKING AMONG SMEs IN YEMEN


**MOHAMMAD MOHAMMAD ALZUBI**

**Al-Madinah International University, Selangor, Malaysia**

**Tel: +60182176159;**

*Email:* **mohammad.mahmoud@mediu.edu.my**

**MAZEN MOHAMMED FAREA**

**Al-Madinah International University, Selangor, Malaysia**

**MAGED MUSTAFA AL-DUBAI**

**Al-Madinah International University, Selangor, Malaysia**



## Abstract

This study examines the direct empirical relationship between independent variables (technology, perceived usefulness, and perceived ease of use) and intention to use internet banking (IB) among 200 SMEs owners in Yemen. Moreover, the research identifies the significance of intention to use IB as a plausible mediator in the relationship between independent variable (technology, perceived usefulness, and perceived ease of use) and intention to use IB - intention to use internet-banking rates. The analyses of the gathered data employed the Partial Least Squares Structural Equation Modeling (PLS-SEM).The results show that technology and perceived ease of use and perceived usefulness positively influences intention to use, Moreover, awareness was found to be significant mediating factors in the relationship among technology and perceived ease of use, and intention to use IB among SMEs' owners. Awareness was a negative mediating factor in the relationship

between technology and perceived ease of use among SMEs' owners. The relationship between awareness, (technology, perceived usefulness, perceived ease of use), and intention to use IB play a particularly important role in developing IB among SME in Yemen. Based on research findings, theoretical and practical implications were discussed. Limitations and recommendations for future research were also highlighted.

Keywords: **E-banking; Technology acceptance model; Technology factor**



## INTRODUCTION

In the current changing and challenging business environment, banks have been gaining an increasing importance in paving the way for the development processes in any country. In the same vein Yemeni banking sector is not different from other banking sectors in many other developing countries. Specifically, Yemeni banks have been reported to have many problems that hinder their overall organizational performance Al-Swidi [1]. However, the main issues are related to the lack of market and customer-focus of these banks that results in the failure to attract Yemenis to do their transactions through banks Al-Swidi [1]. It has been logically argued that this lack of customer focus can be attributed to the lack of entrepreneurial capabilities of these banks. In other words, Yemeni banks lack the entrepreneurial capabilities that enable them to explore and exploit the great available business opportunities embodied in the wide pool of customers Al-Swidi [1]. Besides that, the poor service quality of the Yemeni banks has been another issue contributing to the nonexistence of awareness between banks and the Yemeni savers. More importantly, the Yemeni banking system has not been able to gain the trust of the Yemeni customers. Moreover, according to the Mayor of the Central Bank of Yemen, the Yemeni people prefer to save their money at homes rather than dealing with banks.

### Problem Statement

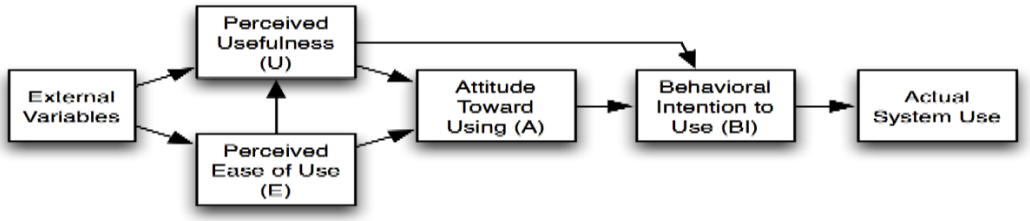
The general problem is that there is low awareness of internet banking services among individuals, leading to lack of interest among individuals and SMEs to use internet banking, and there must be a deeper explanation for the phenomenon [2,3]. Previous research has not taken into consideration SME owners [3] and the range of variables affecting individuals' intention to use IB and awareness that taken into account by these researchers are limited. This gap has brought up the motivation to carry out this study. Unlike previous research, this work will take into consideration owners of SMEs in Yemen, to investigate several dimensions (technology, perceived usefulness, ease of use), and how they are related to the awareness and intention to use IB in Yemen. This research seeks to understand the low awareness and acceptance of Internet banking in Yemen and whether that has caused the low intention to use IB. It experiments by putting awareness as a mediating factor and wish to find out if awareness can be a good mediating factor in the intention to use

IB.

### Theoretical Background

TAM is broadly used to study the acceptance of information systems (IS). It models the acceptance of IS before people use new systems. It helps predict and explain user acceptance of IS. Regarding new technologies, individuals are influenced by perceived usefulness (PU) and perceived ease of use (PEOU) Davis [4] as they form an individual's attitude. Davis [4] later revised the original TAM to better predict and explain user behaviour by including behavioural intention (BI) (Figure 1).

**Figure 1:** The original TAM [4].




## RESEARCH MODEL FACTORS

### Technology

In order to describe the process of technology intention to use, it is essential to define technology as well as to scrutinise the concept of intention. For this research, an inclusive term of technology is defined to cover the multiplicity of these technologies. Within the diffusion and acceptance of information technology literature, there is no generally accepted technology definition, as various definitions of technology have been widely used by different researchers. Technology might be regarded as a technological aspect of information systems (IS) [5], which is aimed for creation of computer-based, IS by using computer systems in organisations [6]. Technology can be defined as, "those technologies engaged in the operation, collection, transport, retrieving, storage, access presentation, and transformation of information in all its forms" [7]. Moreover, technology is defined by Tan et al., [8] as the application of ICT tools including computer hardware, software, and networks required for connecting to the internet. In this research, the term of technology is defined as the capabilities that are offered to organisations by computers, software applications, and telecommunications to deliver data, information, and knowledge to individuals and processes [9], however, with regards to the concept of supplier relationships, Carr and Smeltzer [10] define technology as the use of automated purchasing systems, supplier links through electronic data interchange (EDI) computer-to-computer links with key suppliers and finally information systems.

### Perceived Ease of Use and Perceived Usefulness

The TAM, introduced by Davis [4], is one of the most cited theoretical frameworks to predict the acceptance and use of new information technology within organisations. This model is derived from the TRA. The TAM hypothesises that system use is directly determined by behavioural intention to use, which is in turn influenced by users' attitudes toward using the system and the perceived usefulness of the system. These two factors have been empirically justified as important factors determining the acceptance and use of new information technology, including the intention to use IB as well [11].

Perceived ease of use is defined as, "the degree to which the prospective user expects the target system to be free of effort" [4]. Individuals expect that, if a new technology is easy to use, this will create a positive attitude toward it. In the IB acceptance context, perceived ease of use appears as an important factor that was employed in several previous studies [12-15].

### Awareness

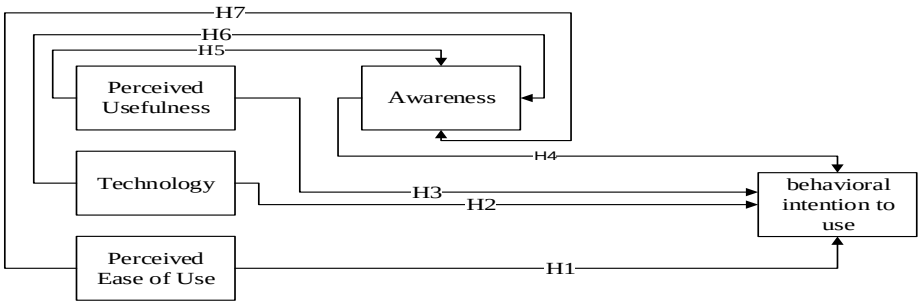
A deep understanding of the meaning of awareness is crucial and imperative to ensure that owners of SMEs preserve their success and competitiveness. Multiple definitions have been viewed through the literature to illustrate the awareness concept. According to Kotler [16], awareness is the imperative exploration on the mechanism of individuals to gain knowledge of a particular product or service and to what degree there is a lack of their information about it.

The important factor that individuals consider before IB is the amount of information they have about it. In this context, Sathye [17] identified awareness as a major factor affecting the intention to use. According to Sathye [17], while the use of IB services is relatively a new experience to many people, low awareness of IB is a major factor in causing people not to use it.

## RESEARCH FRAMEWORK AND HYPOTHESIS

The focal point of this study is the viewpoint of individual. Based on the TAM model, this paper attempts to provide prediction on internet banking. This study attempts to ascertain if the original constructs of TAM namely perceived usefulness, Perceived ease of use impart impact on internet banking. The reason is that Perceived usefulness directly influences user behaviors while the impact of awareness and technology on internet banking intention (Figure 2).

**Figure 2:** Research model.




**Research Hypothesis**

H1: Perceived ease of use has a significant positive relationship with behavioral intention to use internet banking.
H2: Technology has a significant positive relationship with behavioral intention to use internet banking.
H3: Perceived usefulness has a significant positive relationship with behavioral intention to use internet banking.
H4: Awareness has a significant positive relationship with behavioral intention to use internet banking.
H5: Awareness mediates the relationship between Perceived usefulness and intention to use internet banking.
H6: Awareness mediates the relationship between Technology and intention to use internet banking.
H7: Awareness mediates the relationship between Perceived ease of use and intention to use internet banking.

## QUESTIONNAIRE DEVELOPMENT

This study employed a questionnaire that is based on the available literature on TAM and trust [4,18,19] with internet banking in consideration. The construction of the items was according to the instruments employed by the past scholars. This would reflect the general dispositions of consumers towards behavioral intentions. As the respondents of this study were Yamenians, translation was made to the original instrument, from English to Arabic. The questionnaire was finalized after the repeated translation processes. A five-point scale was used to evaluate each item. The scale ranges from 1 (strongly disagree) to 5 (strongly agree).

## RESEARCH METHODOLOGY

This research employed 200 SMEs owners in Yemen as respondents. As for data, they were obtained online (online questionnaires at www.surveyshare.com). There is only one part to the questionnaire. This one part contains items, which represent several constructs. The 5-point scale was chosen for measuring the acceptance

level of users. In order to measure the association between the six primary factors and behavioral intention to use internet banking in Yemen, this study utilized regression analysis. This study attempts to construct an integrated framework with the capacity of measuring the SMEs readiness to interact with internet banking. In the investigation of these SMEs readiness, validation to the trust factor with Technology Acceptance Model (TAM) has to be performed.

**Instrument Development**

The construction of the items was for determining the respondents' awareness of the online access to the M-marketing. Minor modification was made to the questionnaire based on respondent's comments. At the same time, the readability and validity of content were affirmed. Utilizing the Partial Least Squares Structural Equation Modeling (PLS-SEM), a pilot analysis was performed. This allows the examination on the reliability as well as validity of the initial construct. The Cronbach's alpha was used in the pilot test. Factor analysis was also conducted on the data gathered from a sample comprising of 30 SMEs with internet banking experience. The sample was obtained using the procedures of convenient sampling. All items appear to have value larger than the proposed cut-off of 0.70 (Table 1).

**Table 1:** Reliability analysis.

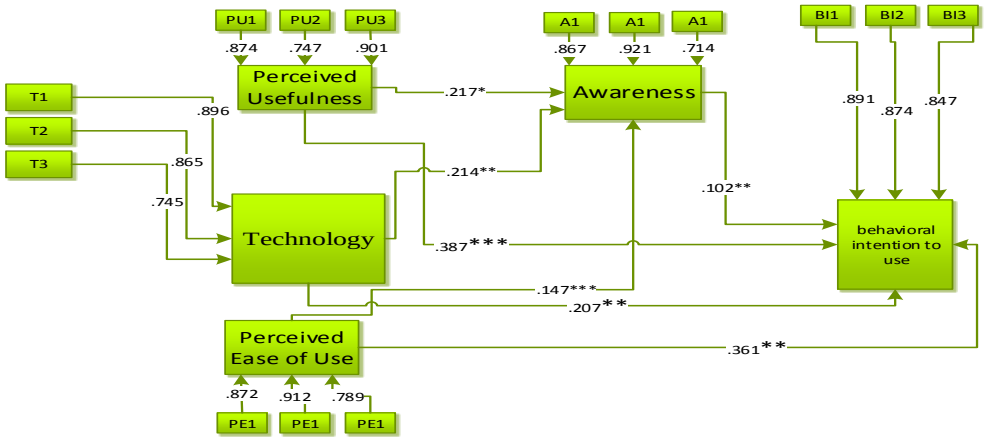
| Variables | Items # | Reliability |
|---|---|---|
| Awareness | 3 | .847 |
| Perceived usefulness | 3 | .894 |
| Perceived ease of use | 3 | .841 |
| Technology | 3 | .789 |
| Behavioral intention | 3 | .766 |

**Data Analysis**

Considering the measurement model, the assessment of the structural model was the subsequent step in the PLS Analysis; an analysis was performed towards the inner model. Hair et al. [20] proposed requirements were perused. Thus, for the testing of hypotheses, the researcher employed bootstrapping to measure the significance level of the path coefficients.

The researcher applied the PLS-SEM structural model for testing the hypothesized relationships. Here, the PLS algorithm and bootstrapping algorithm in SmartPLS 2.0 3M were used. The path coefficients show high level of significance in PLS analysis. However, it should be noted that when paths are non-significant or show signs contradictory to the hypothesized direction, the earlier established hypothesis should be rejected [20] (Figure 3).

**Figure 3:** Measurement Model.




Notes: * t > 1.960, p < 0.05; ** t > 2.576, p < 0.01; *** t > 3.291, p < 0.001.

In brief, the path coefficients for all hypotheses show significance, which means that at this level, each constructed hypothesis, is supported. Behavioral intention to use shows positive indirect linkage with the Actual system use while trust factor also shows positive indirect linkage with the Perceived usefulness and Perceived ease of use. Likewise, the constructs of Perceived usefulness and perceived ease of use demonstrate positive indirect association with the Attitude toward. Additionally, there is positive indirect relationship between Perceived usefulness and Behavioral intention. Moreover, there is also positive indirect relationship between Attitude toward and Behavioral intention. Likewise, Behavioral intention has positive indirect relationships with the Actual system use. Table 2 presents the correlations for each factor in the proposed model.

**Table 2:** Summary of hypotheses.

| Hypotheses | Variable | β | Supported |
|---|---|---|---|
| H1 | Perceived ease of use »»» Behavioral intention | .361 | Yes |
| H2 | Technology »»» Behavioral intention | .207 | Yes |
| H3 | Perceived usefulness »»» Behavioral intention | .387 | Yes |
| H4 | Awareness »»» Behavioral intention | .102 | Yes |
| H5 | Perceived ease of use »»» Awareness | .147 | Yes |
| H6 | Technology »»» Awareness | .214 | Yes |
| H7 | Perceived usefulness »»» Awareness | .217 | Yes |

## DISCUSSION AND IMPLICATIONS

The readiness to utilize Internet banking services among Yamenian SMEs' owners as investigated in this study particularly in terms of its extent. Here, the constructs employed and explained were those of trust, perceived usefulness, perceived ease of use, attitude toward, behavioral intention, and actual system use. As Internet banking usage among SMEs' owners should be increased, the government must tackle these factors. Data obtained were from different levels of SMEs' owners. A diverse pool of data increases the representativeness of the outcomes to the population. A model tailored to the environment of Yamen is proposed in this study. This model particularly takes in constructs from the Technology Acceptance Model (TAM). With respect to the constructs of trust, perceived usefulness, perceived ease of use, attitude toward, behavioral intention, and actual system use, there will be increase in SMEs' owners' intent to utilize internet banking if they are convinced that the internet would increase their efficiency in obtaining information from the government and in their interaction with the government. The intent to use of these SMEs' owners would also increase if these SMEs' owners have better control when they interact with the government. The awareness of SMEs' owners about the services that are accessible to them online should be increased and therefore, the government should adopt an awareness initiative. In addition, the government must not neglect the current technology specifically the social media. The government should thus adopt the modern medium and abandon the traditional one. As such, the government would be able to provide the SMEs' owners with real time information.

## LIMITATION

As with any research, there are limitations to this study. Although IB in Yemen is not a new innovation, it is still in its infancy. The current research is limited to SMEs with bank accounts in Yemen, and limited to owners of SMEs with online access to computer technology and email, and who agreed to participate voluntarily. This methodology was consistent with the data collection procedure for the study. Another limitation in this study was self-selection. Therefore, the data collected from the study was limited only to the responses acquired from those SMEs owners who chose to participate in the study. By design, self-selection and voluntary research participation were consistent with the ethical considerations of the study, the Belmont Report (1979) principles, and the research requirements upheld within the research community.

This is different from those samples used in the studies conducted in other countries. As such, the factors that were assessed and identified on the re-usage intentions of Internet banking members are only confined to Yamen. Thus, future studies should compare their outcomes with those reported in studies in other countries. Secondly, the modified TAM model that this study employs only tested the impacts of four

independent variables and one external factor, that is, the trust variable. Future researchers, retailers, and manufacturers could extend this research as well in order to allow the exploration of the relationship between Internet banking usage and the continuation of purchase intention of Internet banking members. Moreover, other industries could also be the focal point in the future studies. Lastly, this study's proposed model could also be used and extended in the future study through the addition of other constructs including the construct of trust factor and computer self-efficacy.

## CONCLUSION

The last decade has witness the expansion of Internet banking in the developed nations. This has fascinated the developing countries especially the Middle East countries because the significant worth of being a player in the arena internet banking is understood by these countries. Countries in the Middle East must employ the technology of Internet technology particularly in the banking field. Unfortunately, Internet users are still lagging for nearly all countries in the Middle East particularly with respect to the varied usage of Internet. In fact, very few internet-banking sites can be found in Arab countries. The outcomes generated by this study fulfil its key objective: to increase the intention to use Arabic Internet banking websites among Arab users. As such, the increase number of Arab e-commerce websites is expected to cause consumer to switch their online purchasing intentions towards the local Arab websites.

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