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Top Management Characteristics and Adoption of Internet Banking: Case Study of the Tunisian Banking Sector

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ABSTRACT: This article explores in depth the technological innovations by the Top Managements of banks in the Tunisian banking sector. The framework of this research is based on an amalgamation of four theories related to the decision of adopting technological innovations: *The Theory of Reasoned Action (TRA)*, *the Theory of Planned Behaviour (TPB), Technology Acceptance Model* (TAM), and *Diffusion of Innovation* (DI). The result of our qualitative study highlights four variables which influence the attitude of the Top Managements towards the adoption of internet banking: Relative advantage, Perceived Ease of Use, compatibility and Perceived risk.

KEYWORDS: Top Management, attitude, Internet banking, TRA, TAM, TBP and DI.

1 INTRODUCTION

Innovation can provide simultaneously exceptional opportunities and important challenges. It allows companies to penetrate new markets and increase their profits. On the other hand it is also a competitive race which requires speed, skill and precision. The company does not only have to be innovative to succeed, it has to be more innovative than its competitors (Schilling and Thérin 2006). To resist the competitive pressure many companies have to rely on technological innovations in order to develop lasting relationships both in the activities and practices of management.

Moreover, several theoretical frameworks explain the decision-making process as far as adopting technological innovations are concerned, these include: *The Theory of Reasoned Action (TRA)* (Fishbein and Ajzen 1975), *the Theory of Planned Behaviour (TPB)* (Ajzen 1991), *Technology Acceptance Model* (TAM), (Davis 1989) and *Diffusion of Innovation* (Rogers 1983).

In the last years, several researchers relied on these to explain the decision of adopting technological innovations, notable among these are: Internet Banking (Al Hajri 2008, Ariff and al 2012 ; Stantouridis and al 2014), e-transactions (Al Ghatani 2011), mobile Banking (Lin, 2011; Luarn and al, 2005), Business-to-consumer electronic commerce (B2C e-commerce) (Lin 2007) and company systems (ERP, CRM, e-procurement ect) (Ramdani and al 2009 ; Dulcic and al 2012). Several studies in different countries had as objective the study of the factors leading to the adoption of internet banking. Several studies demonstrate that the perception of the innovation influence the decision of adopting it (Lean, Zailani, Ramayah and Fernando 2009 ; Lin 2010 ; Papies and Clement 2008).

It is in this line that the present study aims at providing an overview of the perception of bank decision makers of internet banking. We will rely primarily on case-study which is largely recognized as a management research strategy. Several reference works have legitimized it (Einsenhardt, 1989 ; Yin 1989, 2003 a, 2003 b ; Denzin and Lincoln, 1994). These authors have highlighted the scientific interest of case-study while offering specific investigation techniques and methods in order to improve its validity (David, 2006). In the following sections we will discuss the theoretical framework and the methodology of our study. We will present the results of our research and end up by concluding.

2 RESEARCH BACKGROUND

2.1 INTERNET BANKING

The quick evolution of internet technology has encouraged a great number of companies to rush frenetically towards internet. This explosion of internet commerce has undeniably been facilitated by the development of telecommunication infrastructure and websites which have become more of a necessity than a choice for different industries. Nevertheless, the important diffusion of internet has completely revolutionized the operative mode of banks. The banking industry is gradually moving away from the traditional model « Bricks- and- mortar », to adopt the banking model « Clicks- and -mortar » (Unnithan et al 2002, Stehling et al 2002, Deitel at al 2001). According to a definition by Shih and Fang (2006) Internet Banking : "*is a new type of information system that uses emerging techniques such as the internet and the World Wide Web, and has changed how customers perform various financial activities in virtual space* ".

We often talk about « *Internet Banking* » or « *Online Banking » ou « Cyber banking » or« Net Banking »* to designate the financial establishments present on the network and using telecommunication technologies.

Furst, Lang and Nolle (2000) define *« Internet Banking »* as a means that will allow to better develop and distribute banking financial services via internet. First the traditional services like opening a banking account o fund transfer from one account to another, then the new banking services that will allow the consumers to receive and pay via the website of the bank or electronic payment. Internet banking is relatively a new front office technology; the banks offer a wide range of services in the agencies, online and on the DAB network. Some banks implement a « *click-and-motar* » strategy, which means as well transactional internet sites, while keeping their physical networks and their DAB /GAB networks (Berger 2003).

A study published by « Deutsche Bank Research» in 2010 on the banking market in Europe demonstrates that the rate of adoption of online banking is between 62 and 77%. The rate of adoption in countries such as Germany, France and the UK is between 35 and 41%; while it is of 41% in the United States and over 32% in Eastern and Southern European countries with the exception of Ireland. This rate of adoption is weaker in the less rich countries. Then, the rates of growth are more elevated in the south and east of Europe. Before 2020 more than 60% of Europeans will be able to use online banking (Pastré 2006).

In Tunisia, the adoption of electronic banking (ATM, M-Banking, PC-Banking) was encouraged by the central bank in 1997, by setting up a large modernization program through an upgrading of the banking tool by adopting new technologies (establishment of teleclearing, development of electronic banking, payment systems etc). Although these electronic banking channels are used they are not developed enough. It is in 2004 that a few banks (five) adopted internet banking, in 2011, the number reached 80% (Nasri, 2011). The virtual bank remains inexistent in the Tunisian banking market.

2.2 LITERATURE REVUE

The models studying the relation attitude-behaviour such as the Theory of reasoned action (TRA), the Technology acceptance model (TAM) and the Theory of planned behavior (TPB) and diffusion of innovation (the Rogers Model) are widely used in order to study the behavior in terms of the adoption of new technologies. In this part we will present the different theories that determine the decision of adopting new technologies.

2.2.1 THE THEORY OF REASONED ACTION (TRA)

Ajzen and Fishbein (1975, 1980) explain human behavior in their approach to the Theory of Reasoned Action (TRA). According to the TRA every person is rational and systematically evaluates information before validating it. They modify the classical attitude o imprint it with a sequential dynamic. They thus keep only the affective dimension of the concept of attitude: "*attitude can be conceptualized as the degree of positive or negative affect for an object*" (Ajzen and Fishbein, 1975 : 11). According to Triandis (1979) attitude is: « *the feeling of joy, elation, or pleasure, or depression, disgust, displeasure or hate associated by an individual with a particular act* ». A positive attitude will then have a positive effect on behavior, while a negative attitude will reduce the chances of adopting the behavior in question.

Davis (1986, 1989) presents an adaptation of the Theory of Reasoned Action (TRA) (Ajzen and Fishbein 1975, 1980), which concerns the prediction of the acceptability of an information system. This model supposes that the acceptability of an information system is determined by two factors: the perception of utility and the perception of ease-to-use. Several authors have used this model in the context of the adoption of Internet Banking (Yiu et al, 2007; Tan et al, 2005; Wang et al, 2003; Hsu et al, 2007).

2.2.2 TECHNOLOGY ACCEPTANCE MODEL (TAM)

First, Davis (1986) suggests that the use of the system is an answer that could be explained or predicted by the motivation of the users who are in their turn directly influenced by an external stimulus constituted of the characteristics and capacities of the actual system. Later based on the works that formulated the *Theory of reasoned action (TRA)*, Davis has improved his model and proposed the *Technology Acceptance Model* (TAM). Thus, the TAM (Davis et al, 1989) with the TRA (Ajzen, 1991; Fishbein&Ajzen, 1975), allow explaining the new technological innovations.

According to this model Davis (1989) and Davis, Bagozzi et Warshaw (1989), have studied the behavior of "adoption" and "acceptance" of the technology, « *Technology Acceptance Model : TAM».* The author suggests that usage motivation can be explained by three factors: *Perceived Ease of use, Perceived Useflness and Attitude Toward Using the System.*

- Attitude is defined as "*the strength of a person's intention to behave in a specific way"*
- Perceived Usefulness is*: "The degree to which an individual believes that using a particular system would enhance his or her job performance".*
- Perceived ease of use is*: "The degree to which an individual believes that using a particular system would be free of physical and mental effort".*

The TAM is based on the TRA to construct « Behavioural Intention » and attitude by adding perceived usefulness and perceived Ease of Use. This model used within the framework of the adoption of internet banking, confirms the influence perceived usefulness, credibility and easiness of use of internet banking have on intentions towards using this banking channel. (Stantouridis and Kyritsi, 2014).

2.2.3 THE THEORY OF PLANNED BEHAVIOUR

The Theory of Planned Behaviour (TPB) is an extention of the Theory of Reasoned Action (TRA) (Fishbein et Ajzen 1995). The TPB stipulates that the intentions of individuals determine their behavior as well as intention which capture the motivation of individuals thus defining their behavior (Ajzen 1991). Thus, according to the TPB, intention is determined by three constituents: 1) attitude towards behavior, 2) subjective norm and social pressure, 3) perceived behavioural control (PBC).

The three antecedents of intention (the attitudes towards behavior, the subjective norms and the perception of control over behavior are supposed to originate in beliefs stored in the memory. Attitude is conceptualized by the evaluation more or less favorable of behavior and thus issued from beliefs about the probable consequences of the behavior regulated by the desirability of the consequences for the individual. The subjective norms stem from beliefs anchored in the perception of social pressure to accomplish or not a certain behavior. The perception of control over behavior is determined by the beliefs about the control the individual thinks he has over the factors that can affect the realization of the behavior (control beliefs).

2.2.4 DIFFUSION OF THE INNOVATION : THE ROGERS' MODEL

According to Rogers (1983), adoption is the decision to use innovation continuously. He defines the adoption of an innovation as the process of acceptance of a novelty (an idea, a product, a brand), by a decision-making unit (an individual or a firm), evolving in a particular social system. Rogers (2003, p 289) defines five attributes of innovation that can be considered essential factors in making the decision of adoption:

- Relative advantage is: "the degree to which an innovation is perceived as being better than the idea it supersedes"
- Compatibility is "the degree to which an innovation is perceived as consistent with the existing values, beliefs, past experiences, and needs of potential adopters". In other words, it is the coherence perceived between the innovation and the attitudes of the individual.
- The complexity is "the degree to which an innovation is perceived as relatively difficult to understand and use"
- Trialability is defined as " the degree to which an innovation may be experimented with on limited basis"
- Observability is "the degree to which the results of an innovation are visible to others" (Rogers 2003).

In the TAM, *"relative advantage*" is sometimes equated with *« perceived usefulness* », complexity is opposed to « *perceived ease of use* » (Davis 1989, Rogers 2003 et Lin 2007). Several studies have demonstrated that the relative advantage ease of use and compatibility are factors of adoption and diffusion of technological innovation (Lin, 2007; Papies et al, 2008; Lin, 2007 and Vijaysarathy, 2004). In the framework of our study we intend to break down the concept of attitude into three parts: perceived usefulness, perceived ease of use and compatibility.

3 METHODOLOGY

At the beginning of our research we consulted the literature which was expanded later thanks to the empirical data. Our research has an exploratory perspective. The construction of knowledge in our work is essentially based on a balance between theory and practice. Our approach can be called a hybrid exploration (Charreire et Durieux 2003, p. 69).

To understand better the decision of adoption of internet banking, the gathering of data was carried out using centered semi-structured interviews. They constitute our major source of data. The collection of data took place over a period of six months. The sample is composed of 30 respondents, holding positions of decision makers in terms of technological innovations. Moreover, the number of decision-makers in the banks belongs to two management departments: the marketing and sales department, and the information systems department. In other banks, the department of electronic banking is added to the other two.

The interviews of an average duration of one hour have been realized with the marketing managers, development and information systems managers, strategy and development managers, electronic banking and managers, online banking service managers, product and market managers, e-banking product managers, new technology department managers. In the end, we conducted 30 interviews following interview guide, which have been entirely recorded and transcribed. Our objective was to regroup all the managements involved in the decision of adopting and implementing technological innovations in the bank, essentially the e-bank.

4 RESULTS AND DISCUSSION

Our results concern the variables that study the perception bank top managements of technological innovations. The latter have a tolerance to risks linked to the introduction of new technological innovations to the bank, as well as a perception of the relative advantages, of the ease of use and the compatibility of the online bank with the values and needs of the organization. These innovative banks have at their disposal independent and interdisciplinary teams. Most of the time, the decision of adopting online banking originates in the information systems management and it is through consulting with the other managements that the project is studied. The decision-makers of these innovative banks are distinguished by their high educational levels and great professional experience (Gherib 2014).

Our results highlighted the importance of the perception of the decision-makers of the advantages of e-banking, which contributed to their adoption.

The perception of the relative advantages is related to 1) reinforcing the relationship with the client: the interviewees agree on the affirmation that the online bank is accessible 24 hours a day and 7 days a week, it offers contingent answers, personalized offers, real time feedback. All these factors influence the quality of the services and products offered via internet, with the purpose of improving the quality of service, reinforcing the relationship with the client. All these advantages being perceived by the decision-makers influenced the adoption of the technology.

> "*It has a positive impact, it bring the client closer as he is able to consult his account daily, he is in direct and daily contact with his bank*"

2) The improvement of organizational performance by the reduction of the costs of treatment, administrative costs, a stabilization of the numbers, the subscriptions. All these factors make the adoption of internet banking profitable.

> "*The best costs for the bank, profits for the bank, profitability, better performance which means that it is no longer a choice it is vital, the prosperity of a bank depends of its means.*"

Finally 3) Improving the productivity of employees, the logic of the online bank consists in directing the staff of the agency towards new activities with added value. Thus these agencies oriented towards new activities are considered to be sales points. With the advent of the new technological channels which gave birth to "self-service", the client finds himself driven from the role of a passive agent to that of a major agent in the process of "servuction" which implies the transfer of operations with low added value towards automatons. This allowed relieving the pressure on the agency, reducing the number of staff mobilized and rather directing them towards new activities with high added value.

> "*At the level of the agency it is a relief and it allows work with added value at the level of the counter, at the back-office, the sales department can do a better job*"

Concerning the compatibility perceived by the decision-makers, internet banking is perceived as compatible with the values and needs of the bank in order to complete the transactions of the consumers compatible with the activities of the employees of the bank.

- It completes the transactions of the consumers: they are no longer obliged to go to the agency for ordinary operations
- It is compatible with the work of the employees: they are no longer restricted to routine operations; they are directed towards new activities with added value.
- It is compatible with the work of the bank: the bank is nowadays aware that it should orient itself towards new activities other than collecting deposits, credits etc

Perceived ease of use: The managers perceive that the tool is not difficult to use and understand. They consider the interface to be easy to use with clear indications. Furthermore, the banks made employees specialized in technological innovations and electronic channels available to direct and advise the clients who meet with difficulties in using the website.

> *"The technology is very easy, no, no very easy, even its implementation. We are users of technology and it is very easy"*

The perceived risk at the idea of adopting a new innovative service or product does not affect the decision of the decision-makers. Thus the decision-makers are ready to tolerate the risks linked to the adoption of the online bank in terms of change at the level of organization.

> "*Yes there is always a risk but if we don't venture we will never obtain anything*"

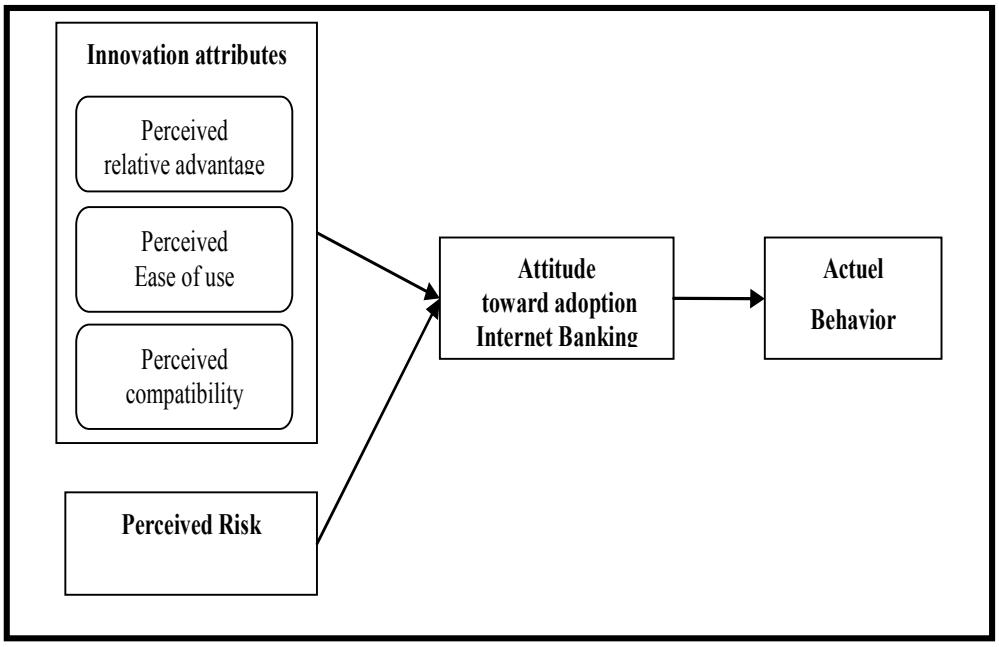

Figure 1: Summary of results

5 CONCLUSION

This article explores in depth the perception of technological innovations by the top managements of banks in the Tunisian banking sector. The framework of this research is based on a combination of four theories in terms of adopting technological innovations: TRA, TPB, TAM and DI. Our research has an exploratory perspective.

The construction of knowledge in our research is founded essentially on a balance between theory and practice. In order to better understand the decision of adopting internet banking, the collection of data was conducted using centered semi-structured interviews. The results of our qualitative study highlight four variables that influence the attitude of Top Management towards the adoption of internet banking: *Relative advantage, Perceived Ease of Use, compatibility and Perceived risk*.

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