

# Study of the acceptance and effect of audit automation software used by financial auditors on the legal mission

**Khalid CHAFIK**

National school of Commerce and Management  
Abdelmalek Essaadi University, Tangier, Morocco  
Groupe de Recherche GRMSI  
[khchafik@uae.ma](mailto:khchafik@uae.ma)

**Hasnae MGHIZOU**

National school of Commerce and Management  
Abdelmalek Essaadi University, Tangier, Morocco  
CED - Economie et Gestion  
[hasnae.mghizou@gmail.com](mailto:hasnae.mghizou@gmail.com)

## ABSTRACT

Despite the recommendations of audit standards to use audit technologies to increase audit efficiency and effectiveness, recent research suggests that audit technology use is fairly low, so, the audit performance can't be reached. Therefore, the goal of this research was to investigate the factors that determine the acceptance and the impact of an audit technology (automation audit software) in the financial audit. Based on the technology acceptance model and the impact models of technology at the individual level, the conceptual model formalize relations between external variables, beliefs auditor, satisfaction and the perceived performance. We investigate these issues using data on 102 auditors/ users of audit automation software. The results demonstrate that user satisfaction was an important indicator of acceptance of automation audit software in the audit Field. The perceived performance (efficiency and effectiveness) is affected positively by the satisfaction of financial auditors with the software and their beliefs about the usefulness of these tool. This study provides insight into the role of an audit automation software plays in the audit efficiency and effectiveness.

**Keywords:** Auditing; moderators; acceptance; efficiency; effectiveness

---

To cite this article: CHAFIK K., MGHIZOU H. (2018), " Study of the acceptance and effect of audit automation software used by financial auditors on the legal mission ", Journal of Information Systems Management & Innovation, Vol. 2, No. 1, pp. 3-20

Available : <http://revues.imist.ma/index.php?journal=ISMI&page=issue&op=archive>

---

## **1. INTRODUCTION**

To meet the challenges of increased use of technologies among companies, fierce competition in the audit market as well as the new regulations requirements (the Sarbanes Oxley Act, the new professional standards and IFRS reference), audit firms are compelled to invest heavily in new technologies<sup>1</sup> in search of more productive and efficient tools, including audit automation software. The use of these software marks the automation of the audit process. Indeed, this system can be the example of the "paperless audit", supporting the different phases of the auditing process from general awareness to the issue of opinion (Shumate and Brooks, 2001). Implementing such a system allows audit firms to gain a competitive advantage, reduce storage, security costs, facilitate communication between audit team members improve the ability to gather and analyze business data, ensure consistency with regulatory and firm-specific standards, and improve the effectiveness and efficiency of the audit (Bedard & al, 2003, 2006; Janvrin & al, 2008).

However, the expected gains from the implementation of audit automation software (EWP)<sup>2</sup> cannot be achieved if the technology is not used or its capabilities are not fully exploited by end-users (the financial auditors in the context of this research) (Davis & al, 1989; Agarwal & Prasad, 1999; Lucas & Spittler, 1999; Bedard & al, 2003; Venkatesh, Morris, Davis, 2003; Bedard & al, 2006). Thus, even if the EWP is mandatory, they are subject to some resistance. Auditors often try to adapt the mandatory electronic system to their preferred ways of working, attempt to work around the system, leave the organization, sabotage the system, and/or lobby to dismantle it (Markus, 1983; Leonard-Barton, 1988; Hartwick and Barki,

1994; Chau 1996; Anderson 1997; Chin et al., 1997; Griffith 1999; Sellen and Harper 2002; Bedard et al 2003, 2006).

IT acceptance is, therefore, a prerequisite for the IT impact (S.Petter, Delone & Mclean, 2008), and has been extensively studied by previous research literature. However, most of this research was conducted in environments in which usage is voluntary (Davis, 1989, 1993, Hartwick & Barki, 1994; Jackson & al., 1997; Venkatesh & Davis, 2000; Rai & al, 2002; Chafik & Bennaceur, 2014; Gallego & al., 2015; Chin & Lin, 2015; Mugo & al, 2017; Chen & al, 2017), generally including students. So, the question arises as to whether findings of those studies are generalizable to mandatory systems. Specifically, Brown et al. (2002) note that while results from prior studies provide consistent support for relationships among perceptions, attitudes, behavioral intention, and usage, it is unclear whether these relationships will hold when behavior is mandatory. Thus, conducting research in a mandatory use environment and in a professional IT context, particularly those used by knowledge workers would be worthwhile (Hu et al, 1999; Brown et al, 2002; Yang and Yoo, 2004; Yi et al, 2006; Bedard and al, 2003, 2006).

Moreover, in the auditing field, where the use of IT audit tools is not often and steadily (Liang, Lin and Wu, 2001; Kalaba, 2002; Debreceeny, Lee, Neo and Tho 2005; Shaikh 2005; Payne and Curtis 2010; Bierstak, Janvrin and Lowe 2014; Rifki Shihab et al., 2017), the issue of IT acceptance and impact continues to be of concern to those in charge of the implementation of technologies and information system researches, especially those focusing on IS / IT studies in the field of finance, namely auditing. In this sense, little research has been conducted on IT acceptance and impact in the auditing field, mainly audit automation software (Ferki et al, 1998; Bedard et al, 2003, 2006), which, in contrast to decision support systems and expert systems, have not been widely studied by empirical research despite the increasing

---

<sup>1</sup> The amount of technology investment is 3 billion \$ to 5 billion \$ per year (Harris, 2017)

<sup>2</sup> The terms audit automation software and EWP are used interchangeably for ease of readability.

implementation of these systems in audit firms (Sellen and Harper, 2002).

Indeed, while some audit firms are aware of the benefits they can derive from the implementation of such a system, others find it difficult to be convinced (Besson, 2003). In addition, examining the acceptance and benefits of using auditing technologies, including audit automation software, is of considerable interest to both IS researchers and professionals alike (Banker & al, 2001; Besson, 2003; R.Rowe 2008; Janvrin & al, 2008; Berrada 2015; Harris, 2017). Above all, recent studies (Sage, 2017; Deloitte, 2017) confirm that the accounting profession, including auditing, will be automated by 95% by 2036, and therefore the profession is forced to prepare for changes in audit practices.

Thus, the present work, part of a hypothetical-deductive positivist approach, proposes a research model that addresses the issue of IT acceptance and perceived impact (the audit automation software) in a legal audit assignment. The objective is, firstly, to identify the determinants of the acceptance of this type of technology by financial auditors, and then to evaluate the individual impact of this use on their work. Our research is thus centered on the individual analysis level. This choice is justified by the fact that only IT end-users (the financial auditors) are in the best position to assess the tangible benefits of using IT.

This paper presents, in the first part, the theoretical models mobilized to address the issue of IT acceptance and perceived impact, while exposing, in the second part, the conceptual and hypothetical framework of this research. Then, we discuss our methods and results. Finally, we describe our overall conclusions.

## **2.RELATED WORK**

The theoretical underpinnings of this research are based on the Technology Acceptance Model (TAM) and the IT Impact Models (DeLone and McLean, 1993, 2003, Seddon, 1997). The first will help us understand how end-user beliefs are shaped

as well as the variables that influence this shaping. The second stream will explain how the IT acceptance impacts the work of financial auditors.

### **2.1.Technology Acceptance Model (TAM)**

IT acceptance is the most studied theme of contemporary IS literature (Venkatesh et al., 2003). In this sense, Davis & al. (1989), state that *"understanding why people accept or reject computers is unquestionably one of the most complex problems in information systems research"* (p.587). A whole research trend is being developed to address the problem of IT acceptance. According to DeVaujany (2012, p.47), some of these models draw their foundations from the theory of adoption and diffusion of innovation (Moore and Benbasat 1991; Rogers 1995; Bradford and Florin 2003). Others, based on theories of social psychology including the theory of reasoned action (Fishbein and Ajzen, 1975), try to explain the behavior of the IT acceptance by the beliefs, attitudes, norms and behavior intentions.

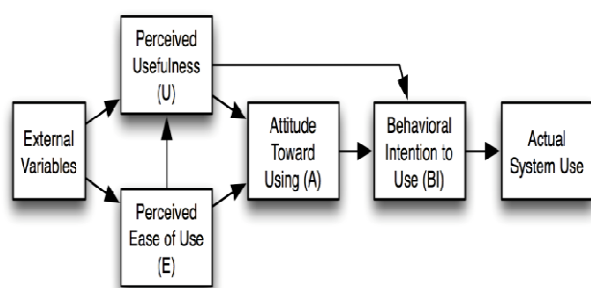
The Technology Acceptance Model (TAM), although developed in the late 1980s, has been and remains one of the most used models in IS research. Indeed, several empirical studies show the robustness of this model (Porter & Donthu 2006; McFaland & Hamilton 2006; Burton Jones & Hubonna 2006; Kim & al 2007; Wu & al 2007; Chang & al 2012; Son & al, 2012; Chin & Lin, 2015). The TAM explains up to 40% of the variance in intentions of use and 30% of the use of the system<sup>3</sup> and has been cited, according to the Proquest database, 3345 times between 1989 and 2007 (Mezni & Gherib, 2007 ) and its index h is 22748 times.

The TAM is based on the study of the impact of external factors on the internal beliefs of the individual manifested by an attitude and behavior of adoption or rejection of technology (Davis et al., 1989). It highlights the role of two key beliefs:

---

<sup>3</sup> Mohanty, A.K. ; Dash,M ;Pattnaik,S ; Mohapatra, R.C and Sahoo, D.S (2011) : « Using the TAM model to explain hox attitudes determinate adoption of Internet Banking» European Journalof Economics, Finance and Administrative Sciences, Issue 36, page 52.

perceived usefulness and Perceived Ease of Use, which, according to Davis (1989, p. 320), explain and strongly determine individual technology acceptance<sup>4</sup>. Some previous research has incorporated moderating variables (gender, education, age, hierarchical position, etc.) into the TAM model to better explain the technology acceptance. The consideration of these variables in this research is likely to enrich the explanation of the acceptance of audit technologies.



## 2.2. IT impact models

Although IT use is expected to have positive results, the difficulties in demonstrating the benefits of this use have long preoccupied IS researchers. Several models have been developed to answer the problem of evaluating the impact of IS / IT, more often individual and organizational and more operational than strategic, among them the model of DeLone & McLean (1992, 2003) and that of Seddon (1997). The purpose of this trend was to identify the concepts and criteria for IT impact assessment.

Through previous studies, this evaluation can be done according to three criteria: (1) *use*: this concept is gauged as an independent and/ or intermediate dimension (mediator) that induces downstream effects specifying how and to what extent IT influences both individuals and the organization (DeLone and McLean 2003,); (2) *satisfaction*: This is the dimension most often used when measuring the impact of an IS / IT (DeLone

and McLean 1992, Geldman 1998, Moreau 2006). The concept of user satisfaction has generally been viewed as "attitudes to the system", "feelings toward IT", "IT acceptance", "IT appreciation", etc. (Ives et al. 1983, Baroudi and Orlikowski, 1988); and (3) *the individual impact* (Goodhue and Thompson, 1995, Lucas and Spitler, 1999; Mosbeh, 2012; Son & al, 2012): it can be defined as the presumed effect of technology on the behavior and / or performance of the end user (Igbaria and Tan, 1997; McGill, 2004). In the same vein, DeLone and McLean (1992) state that the individual impact is an "*indication that the IS: has allowed to give a better understanding of the decision context to the user, has improved its productivity in the decision-making, has produced a change in its activities and has changed its perception of the importance of the IS*" (page 69).

In this study, it appears that the criterion of use will not be relevant (Trice and Treacy 1988, Ghoothu and Thompson 1995) since the use of the audit automation software is mandatory. In fact, the evaluation of the impact of the IS by the criterion of use is only valid in a voluntary context of use of the IS / IT (Trice and Treacy, 1988, Szajna, 1994), as well as the IS / IT inefficient, in a mandatory context of use, will be intensively used. Satisfaction (DeLone and McLean, 1992; Geldman, 1998; Moreau, 2006) and individual impact (Goodhue and Thompson, 1995; Igberia and Tan, 1997; Lucas and Spitler, 1999; Mosbeh, 2012; Son and al, 2012) have been frequently used to measure IS / IT impact and are therefore considered in this research.

## 3. EPISTEMOLOGICAL POSITIONING

According to Thietart et al. (2003) "*the epistemological reflection is imperative for any researcher anxious to carry out a serious research because it makes it possible to establish the validity and the legitimacy of the research*". The research work is based on a certain vision of the world, uses a method, proposes results aimed at predicting, prescribing, understanding, constructing or explaining (Evrard et al., 2003). Generally, there

<sup>4</sup> The intention of the user will not be considered in this research. Since our goal is to explain observed behavior and not to predict future behavior (Ajzen and Fishbein, 1980).

are three main epistemological paradigms: the positivist, the interpretativist and the constructivist.

The purpose of this research is to explain the individual impact of audit automation software as perceived by financial auditors, based on the technology acceptance model and IT impact models, which are typically positivist models (DeVaujany, 2012). Positivism considers that there are external facts which are ample evidence of a reality. In other words, it is a causal approach where variables are manipulated and their effects on other variables are measured. The evaluation of the acceptance and the impact of the software studied is thus a reality for the users and their firms and the research has no influence on its existence. Therefore, given its purpose and the independence between the object and the subject, the study is part of a positivist paradigm.

#### **4. THEORETICAL BACKGROUND AND RESEARCH HYPOTHESES**

The research model emerges from the reflection conducted in the theoretical framework where two theoretical fields overlap: The first, relating to TAM; in relation to the psychosocial theories on user behavior, sets the theoretical bases supporting a better understanding of the formation of beliefs, attitudes and therefore prerequisites for IT acceptance by the user. The second, IT impact assessment models, both in the area of MIS and auditing; allows identifying the appropriate concepts for explaining the perceived individual impact of using IT in the legal auditing assignment.

In this research, the usage of IT is mandatory, however, actual usage is not an indicator of acceptance because auditors are required to use the technology regardless of their intention to do so. In the model proposed herein, user satisfaction is posited as an indicator of acceptance. User satisfaction has been studied by other researchers as an indicator of user perception of the impact of IT (Ives and al, 1983; Delone and McLean, 2003) and as an important indicator of IT acceptance in a mandatory environment (Adams and al, 1992; Delone and McLean, 1992). In our model,

perceived individual impact was chosen as a variable to measure the effects of automation audit software on individual performance (efficiency and effectiveness). Moreover, user satisfaction has been shown to positively influence perceived impact of IT (Gatian, 1994 ; Vlahos et Ferratt, 1995 ; Etezadi-Amoli et Farhoomand, 1996 ; Igbaria et Tan, 1997 ; Goodhue et al, 2000 ; Au et al, 2002; McGill et al, 2003 ; Calisir et Calisir, 2004 ; Doll et al, 2004 ; Jain et Kanungo, 2005 ; Moreau, 2006; Lee et al, 2007 ; Mosbeh, 2012).

Previous studies have demonstrated that user satisfaction is strongly correlated with perceived usefulness (Seddon, 1997 ; Adamson et Shine, 2003 ; Avlonitis et Panagopoulos, 2005 ; Konradt et al., 2006 ; Kim et Chang, 2007 ; Monnickendam et al., 2007 ; Sun et al., 2007 ; Brown et al., 2008 ; Son et al, 2012) and has an indirect effect on the impact of IT (Etezadi-Amoli et Farhoomand, 1996 ; Seddon, 1997 ; Gelderman, 1998, Calisir et Calisir, 2004 ; Doll et al. , 2004 ; Mosbeh, 2012). In addition, Several studies show the direct link between perceived ease of use and user satisfaction (Avlonitis and Panagopoulos 2005, Konradt et al 2006, Roca et al 2006, Thong et al 2006, Liao et al, 2007 ; Sun et al, 2007, Brown et al, 2008), but also indirectly via perceived usefulness (Thong et al, 2002, Calisir and Calisir, 2004, Kim and Chang, 2007).

The positive relationship between perceived usefulness and Perceived Ease of Use has shown by prior studies (Davis ,1989, 1993 ; Al-Gahtani, 2001 ; Horton et al, 2001 ; Wagner et Flannery, 2004 ; Lee et al, 2006 ; Kim et al, 2007 ; Wu et al, 2007 ; Amadi-Echendu et De Wit, 2015 ; Cheng, 2015 ).

The model also incorporates variables related to individual issues (training, tool experience), organizational issues (top management support), and technological issues (technological non complexity) as shown in fig. 2.

According to the prior research, Training has an important factor affecting IT acceptance (Igbaria et livari 1995, Igbéria et al, 1996 ; Agarwal et Prasad,

1999 ; Karahanna et Limayem, 2000 ; Riemenschneider et Hardgrave, 2001 ; Bédard et al. , 2003 ; Lee et al., 2006 ; Bierstaker et al., 2008 ; Rouibah, Hamdy et Al-Enezi 2009 ; Amadi-Echendu et De Wit, 2015) and have a positive impact on user satisfaction (Mahmood et al., 2000 ; Santhanam et al., 2000 ; Simmers et Anandarajan, 2001 ; Bradford et Florin, 2003).

Second, Prior studies have found that tool experience can affect user's beliefs (Agarwal et Prasad, 1999 ; Ndubisi et Jantan, 2003 ; Wagner et Flannery, 2004 ; Cheong et Park, 2005 ; Guriting et Ndubisi, 2006 ; Yi et al. , 2006 ; Burton Jones et Hubona, 2006 ; Kim et al., 2007), and determined user satisfaction (O'Reilly, 1982 ; Gatian, 1994 ; Guimaraes et Igbaria, 1997 ; Simmers et Anandarajan, 2001 ; Zhang et al., 2006).

Third, prior research theorizes that the management support improves the beliefs of IT users (Igbéria et al 1997, Lewis, Agarwal and Sambamurthy 2003, Schepers et al., 2005, Lee et al., 2006, McFarland and Hamilton 2006, Kim et al. 2007, Kim et al., 2012, Al Haderi 2014, Al-Mamary et al 2014), but also their satisfaction with the use of these technologies (Mahmood et al., 2000, Santhanam et al., 2000, Bradford and Florin 2003, Sabherwal et al., 2006).

Fourth, some work has tested and supported the impact of non-complexity of the technology on IT acceptance (Thompson et al, 1991 ; Cheung et Huang, 2005 ;Parveen et Sulaiman, 2008 ; Kim et al, 2009 ; Son et al, 2012 ; Chou et al, 2014 ; Chin et Lin, 2015).

Based on this, the following hypotheses have been formulated:

The general hypothesis (HG): *"The perceived individual impact has been directly influenced by the acceptance process (perceived usefulness, Perceived Ease of Use, and auditor satisfaction) and indirectly influenced by external variables (training, tool experience, managers' support, and non-complexity of the used technology)".* This

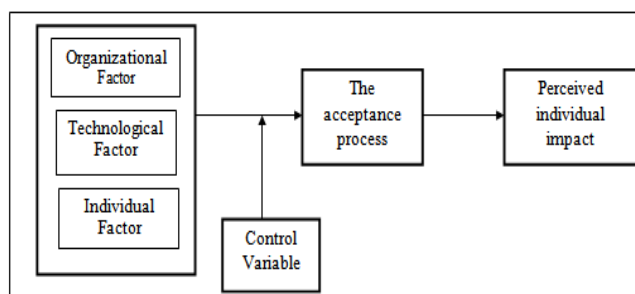
general hypothesis is divided into three partial hypotheses:

H1: «External variables directly influence the variables of the acceptance process»

H2: « The perceived usefulness and Perceived Ease of Use have a direct and a positive impact on the user satisfaction»

H3: « the variables of the acceptance process have a direct and positive effect on the perceived individual impact »

Second, this model presumes the existence of a moderating impact of the gender variable and the auditor's hierarchical position on the direct dependency relationships between the external variables and the beliefs of the financial auditor. This impact gives rise to a moderation effect hypothesis: HM: "The control variables (Gender and Hierarchical Position) have a moderating effect on the direct dependency relationships among the external variables and the auditor's beliefs (perceived usefulness and perceived ease of use)".



**Fig. 2.the conceptual model**

## **5. RESEARCH METHODOLOGY**

### **5.1. Data collection**

This study was conducted in two distinct phases in line with the Churchill's paradigm (1979): the exploratory phase and the confirmatory phase.

#### **5.1.1. The exploratory phase**

For the purpose of this study, the survey was selected as an investigation tool. The different parts of the survey focused on the key points of the research model, while respecting the logical

progression moving from the auditors' demographic data to measuring the external variables all the way to those of the perceived individual impact. The scales intended for measuring the variables were selected on the basis of previous projects that were interpreted and adapted to fit the context of this herein study. This, in vast majority, relates to (Likert) 5-point interval scale which is composed of multiple attributes and items.

Following the completion of the first version of the questionnaire, a pre-test was carried out to check the instrument measuring capacity to capture the different aspects of the phenomenon under study. The pre-test, which was based on interviews carried out with peers, four certified public accountants, and two auditors using EWP, has eliminated a pool of 16 items. Subsequently, the second version of the survey was conducted face-to-face with 19 financial auditors who have been using the automation software. This phase helped gauge the reliability and validity of the measurement indicators, thus the polishing up of the measuring instrument<sup>5</sup>.

### 5.1.2. Confirmatory phase

In this phase, the survey that was put together for the exploratory phase was conducted online and face-to-face with all auditors using the EWP in national and big 4 firms. To arrive at the sample of the study, we used a different sampling technique (random sampling, Convenience sampling and Snowball sampling)<sup>6</sup>. Ultimately, the confirmatory sample consists of 102 financial auditors who are using the audit automation software.

The confirmatory study aims at verifying the hypothesis put forward within the framework of this study. This method utilizes a set of data analysis methods to verify the measurement scale for the variables (construct reliability and validity), in order to test the fit of the data to the proposed

model and that of the direct and indirect linear relations among variables, and then to verify the moderation effect. Hence, these analyses were conducted with the structural equation modeling methodology, the path analysis<sup>7</sup> and the covariance analysis (ancova).

### 5.2. Participants

The confirmatory sample is predominantly composed of auditors of the masculine gender that is 64%, while women make up 36% of the sample. With regards to the degree obtained, 63% of the auditors have a Bac+5, 19% hold a chartered accountant degree, 17% hold Bac+4, and 1% have a PhD degree. The majority of auditors are in the 20-29 age group (that is 81%) and holds the position of junior auditors (that is 59%). 41% of the auditors surveyed have from 2 to 4 years of seniority in the auditing sector and often use IT in their personal capacity (that is 46%). (Table 1)

**Table 1: Demographic Profile of the respondents**

Characteristic	Statistic (%)
<b>Gender</b>	
Male	65 (64%)
Female	37 (36%)
<b>Age</b>	
20-29	81 (79%)
30-39	13 (13%)
40-49	7 (6%)
50 and over	1 (1%)
<b>Level of education</b>	
Certificate public accountant	19 (19%)
Doctorate	1 (1%)
Bac+5 (Management school, MBA)	64 (63%)
Bac+4	17 (17%)
<b>Job title</b>	
Junior	60 (59%)
Senior	32 (31%)
Manager	4 (4%)
Senior manager	4 (4%)
Partner	2 (2%)
<b>Job experience</b>	
Less than 6 years	84 (82%)
More than 6 years	18 (18%)
<b>Use of IT at personal level</b>	
Rarely	5 (5%)
Occasionally	18 (18%)
Several times	47 (46%)
always	31 (32%)
<b>Use of IT at professional level</b>	
Less than 5 years	66 (65%)
More than 5 years	36 (35%)

<sup>5</sup> An exploratory factor analysis was carried out under SPSS 22.0

<sup>6</sup> The different sampling technique was conducted because the particular characteristics of the target population (auditors registered in the order of public accountants who using the audit automation software (EWP)). It allowed us, through the first established contact, to be directed to other external auditors.

<sup>7</sup> the structural equation modeling methodology and the path analysis was carried out under AMOS 25.0



## **6. RESULTS**

### **6.1. Measurement model**

The adequacy of the measurement model was assessed by using a reliability test, a confirmatory factor analysis (i.e. convergent and discriminant validities), and a model fit test.

#### **6.1.1. Reliability**

Before assessing the model, we tested the internal consistency of the results, using Cronbach's  $\alpha$ . The reliability of every instrument, as assessed by the value of Cronbach's  $\alpha$  reliability coefficient, was between 0.915 and 0.981 (as shown in Table 2), which is well above the minimum acceptable threshold of 0.80. Thus, the measurement instruments were reliable gauges of the constructs.

#### **6.1.2. Convergent validity**

Fornell and Larcker suggested using item reliability for each measure, composite reliability for each construct, and the average variance extracted (AVE) to assess the convergent validity of the items measured. To determine the item reliability for a given measure, the factor loading for that measure should be 0.70 or greater, which indicates a well-defined structure.

As shown in Table 2, all of the factor loadings were greater than 0.70, and most were well above that level. To ensure adequate composite reliability, a value of 0.70 or higher was recommended by Nunnally. The composite reliability was calculated as indicated by Fornell and Larcker, with results ranging from 0.91 to 0.98, far exceeding the critical value of 0.70. AVE is a measure of the overall variance attributed to the construct relative to the variance attributed to measurement error. The AVE for each construct should be at least 0.50, the point above which the variance captured by the construct exceeds the variance due to measurement error. As shown in Table 4, the AVE ranged from 0.65 to 0.92, considerably above the threshold of 0.50.

#### **6.1.3. Discriminant validity**

Discriminant validity is present in a given construct when the variance between that construct and the other constructs in the model is less than the variance among the indicators for that construct. We assessed discriminant validity by comparing the square root of the AVE for a given construct with the correlations between that construct and all others. If the square roots of the AVEs are greater than the absolute values of the off-diagonal elements in the corresponding rows and columns of the correlation matrix, this suggests that a construct is more strongly correlated with its own indicators than with the other constructs in the model. The diagonal elements of the matrix shown in Table 3 are the values of the AVE, and the elements below the diagonal are the square root correlation coefficients. Every diagonal element in that matrix is greater than the values of the off-diagonal elements in its row and column, confirming discriminant validity.



Construct	Item	Facteur loading	Composite Reliability	AVE	Cronbach's Alpha
Experience	EXP1	0.839	0.963	0.899	0.96
	EXP2	0.935			
	EXP3	0.931			
Training	TR1	0.903	0.923	0.752	0.924
	TR2	0.878			
	TR3	0.890			
	TR4	0.899			
Non technological complexity	TC1	0.905	0.940	0.799	0.941
	TC2	0.883			
	TC3	0.882			
	TC4	0.925			
Top management support	MS1	0.746	0.919	0.698	0.915
	MS2	0.840			
	MS3	0.850			
	MS4	0.822			
Perceived usefulness	PU1	0.711	0.928	0.655	0.924
	PU2	0.735			
	PU3	0.746			
	PU4	0.751			
	PU5	0.704			
	PU6	0.646			
	PU7	0.742			
Perceived ease of use	PEU1	0.849	0.981	0.929	0.981
	PEU2	0.801			
	PEU3	0.789			
	PEU4	0.859			

Construct	Item	Facteur loading	Composite Reliability	AVE	Cronbach's Alpha
User satisfaction	US1	0.814	0.964	0.819	0.965
	US2	0.869			
	US3	0.795			
	US4	0.857			
	US5	0.794			
	US6	0.841			
Efficiency	PRD1	0.894	0.929	0.725	0.922
	PRD2	0.720			
	PRD3	0.848			
	PRD4	0.810			
	PRD5	0.895			
Effectiveness					
Audit quality	AUDQ1	0.859	0.959	0.772	0.959
	AUDQ2	0.851			
	AUDQ3	0.847			
	AUDQ4	0.839			
	AUDQ5	0.899			
	AUDQ6	0.836			
	AUDQ7	0.887			
Service quality	SERQ1	0.845	0.928	0.722	0.925
	SERQ2	0.811			
	SERQ3	0.885			
	SERQ4	0.860			
	SERQ5	0.885			

Table 3: Discriminant validity

	EXP	TR	MS	TC	PU	PEU	US	PRD	AUDQ	SERQ
EXP	<b>0.899</b>									
TR	0.045	<b>0.752</b>								
MS	0.284	0.073	<b>0.698</b>							
TC	0.116	0.004	0.147	<b>0.799</b>						
PU	0.206	0.033	0.521	0.170	<b>0.655</b>					
PEU	0.576	0.072	0.413	0.139	0.364	<b>0.929</b>				
US	0.150	0.02	0.418	0.062	0.535	0.225	<b>0.819</b>			
PRD	0.222	0.008	0.234	0.051	0.576	0.230	0.481	<b>0.726</b>		
AUDQ	0.228	0.002	0.128	0.04	0.198	0.09	0.471	0.238	<b>0.772</b>	
SERQ	0.155	0.07	0.292	0.003	0.176	0.122	0.255	0.099	0.121	<b>0.722</b>

#### 6.1.4. Model fit

The model fit of the research model used in this study was tested using AMOS 25.0. It is a common practice to use a variety of indices to measure model fit. In this study, five different indices were used for this purpose: the chi-square test ( $\chi^2/\text{degree of freedom (df)}$ ), the root mean square error approximation (RMSEA), the root square Residual (RMR), the goodness of Fit Index (GFI) and the adjusted goodness of Fit Index (AGFI). These indices were chosen because of their relative stability and insensitivity to sample size. The criteria that indicate a good fit for these five indices are as follows (as shown in Table 4):  $\chi^2/\text{df} < 3$ , RMSEA  $< 0.05$ , RMR  $< 0.1$ , GFI  $> 0.9$ , AGFI  $> 0.9$ . Our results indicated that the model fits the data reasonably well:  $\chi^2/\text{df} = 0.861$ ; RMSEA = 0.000; RMR = 0.034; GFI = 0.970 and AGFI = 0.914.

**Table 4: Overall fits of model**

Fit index	Results	Recommended value
$\chi^2/\text{grade of freedom}$	0.861	$< 3$
Goodness-of-Fit Index (GFI)	0.970	$> 0.9$
Adjusted Goodness-of-Fit Index (AGFI)	0.914	$> 0.9$
Root Mean Square Error of Approximation (RMSEA)	0.000	$< 0.05$
Root square Residual (RMR)	0.034	$< 0.1$

#### 6.2. Hypothesis testing

To test the research hypothesis, we turned to path analysis in order to test the causal linear relationships and covariance-based analyses to test the moderation effects of the two variables gender and hierarchical position on the dependency relations between the external variables and beliefs.

The analysis of the significant relations between the variables of the general model underscores the

direct and indirect dependencies between the exogenous variables. The analysis of the significant relations between the general model variables underscores the direct and indirect dependencies between the exogenous variables (EXP, MS, TR, TC) and the endogenous variables (efficiency and effectiveness) through the acceptance variables (PU, PEU, US). The results confirm the general hypothesis of the research (HG) (Table 5).

Nevertheless, the relationships between the non-complexity and the variables of the perceived individual impact as well as those between the training-efficiency (PRD) and the training-quality of the audit have not been validated. Furthermore, the link between the managers' support- quality of service provided and the training-quality of service provided are insignificant. The results of the covariance analysis show that the two variables GENDER and POST have no moderating effect on the dependency relationships between external variables and beliefs. With regard to the variable GENDER, no significant effect has been detected, be it for improving the explanation of the perceived usefulness ( $p > 0.05$ ) or the perceived Ease of Use ( $p > 0.05$ ). Hence, the HM1 hypothesis is overturned. For the POST variable, no moderating effect was brought to light with regards to the perceived usefulness ( $p > 0.05$ ) and the perceived Ease of Use ( $p > 0.05$ ). This result leads to reject the HM2 moderation hypothesis.

**Table 5: Tests of hypotheses**

	Path coefficients	C.R	P
PEU $\leftarrow$ EXP	,707	12,83	***
PEU $\leftarrow$ TR	,101	1,710	,070
PEU $\leftarrow$ MS	,459	6,12	***
PEU $\leftarrow$ TC	,130	1,885	,059
PU $\leftarrow$ EXP	,278	4,158	***
PU $\leftarrow$ MS	,587	6,785	***
PU $\leftarrow$ PEU	,380	3,067	,002
PU $\leftarrow$ TC	,122	1,731	,084
US $\leftarrow$ EXP	,150	1,869	,062
US $\leftarrow$ PU	,545	5,818	***
PRD $\leftarrow$ PU	,434	5,191	***
PRD $\leftarrow$ US	,480	5,052	***
AUDQ $\leftarrow$ US	,687	9,474	***
SERQ $\leftarrow$ US	,474	5,503	***

Notes : US (User satisfaction), PU (Perceived usefulness), PEU (Perceived ease of use), EXP (Experience), PRD(Productivity), AUDQ (audit quality), SERQ (Service quality), MS (Management support), TR (Training), TC (Non technological complexity)

## **7.DISCUSSION**

The perceived individual impact is measured through efficiency and effectiveness. Significant and non-significant determinants on the results variables are outlined below.

### **7.1. Efficiency**

#### **Direct and indirect significant determinants of efficiency (productivity)**

- The perceived usefulness has a direct and an indirect impact on productivity. This link was underscored by previous work (Avlonitis and Panagopoulos, 2005; Guriting and Ndubisi, 2006; Louati, 2008; Wang and Shih, 2009; Schaupp et al. 2010; Pai and Tu, 2011; Mosbeh, 2012). This influence takes account the explanation of the perceived usefulness "the use of the system increases personal performance". In fact, the more the auditors are aware of the contribution of the automation software to the performance of their audit work in a cost-effective manner, the more they perceive that the tool saves them time allocated to the audit assignment, hence, improves their productivity.
- Satisfaction has a direct positive impact on productivity. This link was supported by several research studies (Delone and McLean, 1992; Etezadi-Amoli and Farhoomand, 1996; Notebaert, 2007; Lee et al, 2007; Louati, 2008; Qi et al., 2008; Nefzi, 2008; Lee and Kim, 2009; Hadoussa, 2009; Schaupp and others 2010; Pitchayadejanant, 2011; Mosbeh, 2012). This is because satisfied users take on positively the individual impacts of technology and are, consequently, more likely to be more productive.
- The perceived ease of use has a positive indirect impact on productivity through usefulness and/ or satisfaction. This link is supported by previous research (Avlonitis and Panagopoulos, 2005; Mosbeh, 2012). Auditors who view the software as an easy-to-use tool develop a positive feeling that positively influences their behavior in carrying out their audit work.
- Tool experience has a positive indirect impact on productivity through perceived usefulness, perceived ease of use and satisfaction. This link has been highlighted by previous work (Gatian 1994,

Guimaraes and Igberia 1997). In this sense, an external variable that influences users' perceptions and satisfaction has a positive effect on productivity. Thus, experience with the tool determines acceptance of audit automation software and its impact in the audit engagement. This confirms the importance of exploiting the various features of the software in determining its positive impact.

- The management support has a positive indirect impact on productivity through perceived usefulness and ease of use and satisfaction. This result is confirmed by previous studies (Guimaraes and Igberia, 1997, Santhanam et al, 2000, Avlonitis and Panagopoulos, 2005, Mosbeh, 2012). Indeed, the support of the leaders is the formulation of the strategic interest of the technology for the firm but also the encouragement of its use. Thus, it is essential that the partners get involved in actions supporting the use of the software

#### **Direct and indirect non-significant determinants of efficiency**

- The perceived ease of use does not have a direct impact on productivity (Avlonitis and Panagopoulos, 2005; Roca and al, 2006). It has, nevertheless, an indirect effect through usefulness and/ or satisfaction. This result may be explained by the challenges auditors face to appropriate the tool as well as its different features.
- The non-complexity of the technology does not have an indirect effect on productivity. Indeed, if the variable does not influence satisfaction, it will have no impact on productivity. This result can be explained in part by the inadequate training programs, the lack of use of all the software features and the problems encountered by the auditors in appropriating the tool.
- Training does not have an indirect impact on productivity. This result is due to the inexistence of a direct or indirect relationship between training and satisfaction. This can be explained by the inadequacy of training plans with the expectations of the auditors, in this sense it would be appropriate to reinforce the training programs in order to improve the perceptions of the usefulness and the ease of use the software and thus increase auditor's satisfaction.

## **7.2. Effectiveness**

As part of this research, effectiveness has been measured through two variables: the audit quality and the quality of the service provided.

### **Direct and indirect significant determinants of effectiveness**

- Satisfaction has a direct impact on effectiveness. It improves both the quality of audit (Vézina, 1996; Igberia and Tan, 1997; Goodhue and al, 2000; Moreau, 2006) and the quality of the service provided to clients (Vézina, 1996; Torkzadeh and Doll, 1999; al, 2002). Sure enough, auditors who are satisfied with the use of the software are more likely to take rigorous and reliable decisions. This result is the outcome of an efficient use of the audit automation software. The audit automation software mitigates the risk of non-detection of irregularities in client companies' financial statements, keeps the required time for carrying out the various tests to minimum, and reinforces the reputation of the audit firm in a perfectly competitive market. The satisfaction of the auditor with the use of the software may also lead to an improvement in the quality of the service provided and, therefore, in client satisfaction. Beyond the auditing of accounts, companies need also their auditing firms to provide them with consulting services. This is feasible thanks to the audit automation software which helps auditing firms to reduce low added-value tasks to make room for consultancy activities (Sage 2017; Deloitte 2017).

- The perceived usefulness has a positive indirect impact on effectiveness through satisfaction. This link has been endorsed by the work of Seddon (1997). The positive results of the use of the automation software are drawn from the perception of its usefulness. The capacity of the tool to improve the auditor's individual performance has a positive indirect impact on the effectiveness of the audit assignment.

- The perceived ease of use has a positive indirect impact on effectiveness. This link has been supported by past research (Avlonitis and Panagopoulos, 2005; Mosbeh, 2012). The perceived Ease of Use yields a positive attitude

which positively influences the behavior of auditors while performing their audit work.

- Tool experience has a positive indirect impact on efficiency through perceived usefulness and ease of use and satisfaction. This link has been highlighted by prior studies (Gatian 1994, Guimaraes and Igberia 1997). Indeed, an external variable that influences users' beliefs and satisfactions has a positive effect on efficiency. Thus, this result demonstrates the importance of the auditor's experience with the tool in the acceptance of audit automation software and their impact in the audit engagement. So, it is important that the auditor uses all the features of the audit automation software.

- The management support has only a positive indirect impact on audit quality. This result is confirmed by previous studies (Guimaraes and Igberia, 1997, Santhanam et al, 2000; Avlonitis and Panagopoulos, 2005). Indeed, the implication of the leaders, in the framework of this study "the partners", in actions of support to the auditors, allow these to make better decisions and to appreciate more the importance of this tool for the quality of their work. Thus, it is necessary that the leaders formulate their supports for the use of this technology.

### **Direct and indirect non-significant determinants of effectiveness**

- The training and non-complexity of the technology does not have an indirect impact on efficiency. Indeed, the conceptual model assumes that external variables primarily influence the satisfaction of auditors before determining the impact on the audit engagement. The training and non-complexity of the technology have no direct or indirect relationship with satisfaction. Thus, this result can be explained by the problems encountered by the auditors in appropriating the tool, the insufficiency or the inadequacy of the training plans with auditor's expectations, in this sense it would be appropriate to plan a precise and permanent training programs to improve auditors' beliefs and attitudes towards the use of audit automation software.

-The management support does not have an indirect effect on the quality of the service

provided. In fact, the quality of service is more related to the relationship between the auditor and the auditee than the relationship between the auditor and his or her supervisor. Thus, the support of partners tends to influence the beliefs of the auditors towards the use of the technology more than the quality of the service provided. Even so, to improve the quality of the service provided by the support of the partners, it would be preferable for the partners to take the use of the software as a criterion of evaluation of the collaborators and to emphasize this use in the meetings of launch of the audits.

- The perceived ease of use does not have a direct impact on effectiveness. Yet, the indirect link has been validated. In this respect, and while auditors often face challenges in their uptake of the tool either due to the design of the software or language barrier as the software, in most firms, is only available in English, it is necessary for audit firms to take all necessary measures and actions to facilitate the use of the audit automation software.
- The perceived usefulness does not have a direct impact on effectiveness. This result supports past research that reinforces the indirect link between usefulness and the perceived individual impact through satisfaction (Avlonitis and Panagopoulos, 2005) and/ or through the use (Lucas and Spilter, 1999; DeLone and McLean, 2003). This result is due to the use of a single feature of the audit automation software, which is classification, despite the existence of other features. Therefore, no direct effect arose with regards to the audit quality or the quality of the service provided.

Addition to this, the moderation hypotheses test shows that:

- Gender has no moderating effect on the auditor's beliefs. This result joins in the divergence in research with regards to the impact of the user's gender on their acceptance of IT. In this sense, and as past works put forward, women do not have a lower perception of the perceived usefulness and perceived Ease of Use compared to men.
- The hierarchical position has no moderating effect on the auditor's beliefs. This result sheds light on the ongoing debate over the impact of

hierarchical position on IT acceptance. Auditors in high hierarchical positions (such as partners and senior managers) do not have a better perception on usefulness and ease of use than the other auditors.

## **8. CONCLUSION, LIMITATIONS AND RECOMMENDATIONS**

In order to identify the factors determining the auditors' perceived impact of EWP, this study extended the Technology Acceptance Model and demonstrates the benefits of using an audit automation software (EWP) in the audit assignment.

The results suggest, firstly, that the satisfaction of financial auditors with the use of the audit automation software is an important indicator which determines the efficiency and effectiveness of the audit assignment. Secondly, the satisfaction of auditors is prompted by their perception of the usefulness and ease of use of the audit automation software. Thirdly, individual, organizational, and technological variables are important factors in shaping the auditors' beliefs. In fact, this study shows that the perceived ease of use is determined by training, experience, managers' support, and the non-complexity of technology, while the perceived usefulness is determined by experience, manager's support, and non-complexity of technology. Finally, the study does not validate existence of any moderating effect of gender or hierarchical position on the shaping of beliefs.

These findings have different implications. Firstly, the audit firms may develop specific and appropriate training programs to meet the user's expectations, particularly those related to the challenges facing auditors while performing their work using the software and also the challenges related to system navigation. Secondly, managers have to include the use of technology in their criteria to assess the performance of their employees and to encourage their staff to use all the features of the software in order to improve their experience. Thirdly, software designers and developers have to put together a user-friendly

design, allow some flexibility to facilitate user's navigation within the system, and integrate a multilingual feature to make the software user-friendly. Finally, audit firms might organize demonstration sessions about the use of the EWP and ensure there is a genuine commitment for them, which will help auditors to better perceive the usefulness and ease of use of this technology.

The limits of this research study mainly relate to external variables and the moderating ones chosen. Other research studies may examine the effect of other variables such as the audit specialization, the firm size, the scale of computerization within the audited company, or the fit between the auditing task/ technology. They may also test the effect of other contingency variables to better understand IT acceptance such as age and education level. Secondly, the impact of the audit automation software is measured subjectively and on an operational level. Hence, future studies can objectively measure the benefits and look into the impacts of using this technology at the organizational level, while taking into account the viewpoint of the audit stakeholders. Thirdly, this study was conducted at a particular point in time and focused on a single auditing technology. Other studies may look into other auditing technologies and can use longitudinal studies to track the evolution of auditors' beliefs with regards to auditing technologies.

Despite the above mentioned limitations, this research offers audit firms using the audit automation software the necessary available resources to improve the use of the software. As for those wishing to utilize this software, this research identifies the individual, organizational, and technological determinants to be implemented to ensure the success of this implementation.

## 9. REFERENCES

- Adamson, I et Shine, J. (2003), "Extending the New Technology Acceptance Model to Measure the End User Information Systems Satisfaction in a Mandatory Environment: A Bank's Treasury", *Technology Analysis Strategic Management*, Vol. 15, N°4, December, pp. 441 – 455.
- Agarwal, R. et Prasad, J (1999), "Are individual differences germane to the acceptance of new information technology?" *Decision Science*, Vol. 30, N°2; Spring, pp. 361 – 391.
- Anderson J. (1997), "Clearing the way for physicians' use of clinical information systems". *Commun ACM*, 40(8), pp 83–90.
- Al-Gahtani, S. (2001), "The Applicability of TAM outside North America: An empirical test in the United Kingdom", *Information Resources Management Journal*, Vol. 14, N°3, pp. 37 – 46.
- Au, N., Ngai, E.W.T. et Cheng, E. (2002), "A critical review of end-user information system satisfaction research and a new research framework", *OMEGA*, Vol. 30, pp. 451 – 478.
- Avlonitis, G.J. et Panagopoulos, N.G (2005) "Antecedents and consequences of CRM Technology Acceptance in the Sales Force", *Industrial Marketing Management*, Vol. 34, pp. 355 -368.
- Bedard, J.C., Jackson, C., Ettredge, M.L. et Johnston, K.M (2003), "The effect of training on auditors acceptance of an electronic work system", *International Journal of Accounting Information Systems*, Vol. 4, pp.227 – 250.
- Bedard, J.C, Ettredge M.L et Jonstone K.M (2006), "using electronic audit workpaper in audit practice: task analysis, learning and resistance", March 2006, 33 pages.
- Brown, S.A, Massey, A.P, Montoya-Weiss, M.M et Burkman, J.R (2002), "Do I really have to? User acceptance of mandated technology", *European Journal of Information System*, Vol. 11, pp. 283-95.
- Bierstaker, J., Janvrin, D., D., & Lowe, J. (2014), "What factors influence auditors' use of computer-assisted audit techniques?", *Advances in Accounting*, 30, 67-74.
- Bradford, M. et Florin, J. (2003), "Examining the Role of Innovation Diffusion Factors on the Implementation Success of Enterprise Resource Planning Systems" *International Journal of Accounting*, Vol. 4, pp. 205-225.
- Baroudi, J., Orlikowski, W.(1988), "A short-form measure of user information satisfaction: A psychometric evaluation and notes on use", *Journal of Management Information Systems*, spring, Vol. 4, pp. 44-59.
- Banker, R.D., Chang, H et Kao, Y.C (2001), "Impact of Information Technology on Public Accounting Firm Productivity", *Journal of Information technology Systems*, Vol. 16 N°2, pp. 209-222.
- Burton Jones, A. et Hubona, G.S (2006), "The mediation of external variables in the technology acceptance model", *Information & Management*, September, Vol. 43, N°6, pp.706-717.
- Bradford, M. et Florin, J. (2003), "Examining the Role of Innovation Diffusion Factors on the Implementation Success of Enterprise Resource Planning Systems" *International Journal of Accounting*, Vol. 4, pp. 205-225.
- Burton Jones, A, et Hubona, G.S. (2006), "The mediation of external variables in the technology acceptance model", *Information and Management*, September, Vol. 43, N°6, pp.706-717.

**CHAFIK K., MGHIZOU H. / Study of the acceptance and effect of audit automation software used by financial auditors on the legal mission**

- Bierstaker, J.L., Burnaby, P., et Thibodau, J. (2001), "The impact of information technology on the audit process; an assessment of the state of the art and implications for the future", *Managerial Auditing Journal*, Vol. 16, pp. 159-164.
- Bierstaker, J.L., Houston, R. et Wright, A. (2006), "The impact of competition on audit planning, Review and Performance", *Journal of Accounting Literature*, Vol. 25, 58 pages.
- Besson, M. (2003), "Déjà trois ans : mise en oeuvre d'une GED", *La Profession Comptable*, N° 241, Février, p. 24.
- Cheong, J.H., et park, C.M. (2005), "Mobile Internet acceptance in Korea", *Internet Research*, Vol. 15, N°2, pp. 125-140.
- Chau, P.Y.K. (1996), "An Empirical Investigation of actor Affecting the acceptance of case BY Systems Developers", *Information and Management*, Vol. 30, N°6, pp.269-280.
- Chin W, Gopal A, Salisbury D. (1997), "Advancing the theory of adaptive structuration: the development of a scale to measure faithfulness of appropriation". *Inf Syst Res*, 8(4), pp 355-67.
- CHAFIK et Bennaceur (2014), « Les intentions des dirigeants-proprétaires des P.M.E. marocaines vis-à-vis de l'adoption du commerce électronique : Cas des P.M.E. de tourisme de la région Tanger-Tétouan », 19ème Colloque de l'AIM, Aix-en-Provence, France.
- CHAFIK et A. El Abbassi (2016) : « La décision d'investissement en systèmes d'information : Déterminants de l'adoption des ERP en milieu public marocain », 21ème Colloque de l'AIM, Lille, France.
- Chin J et Lin S.C (2015), "Investigating Users' Perspectives in Building Energy Management System with an extension of Technology Acceptance Model: A Case Study in Indonesian Manufacturing Companies", *Procedia Computer Science* 72, pp 31 - 39.
- Chen. H,Rong. W, Ma. X, Yue Qu, and Xiong. Z (2017), "An Extended Technology Acceptance Model for Mobile Social Gaming Service Popularity Analysis", *Mobile Information Systems Volume*, 12 pages
- Curtis M.B, Payne E.A (2008), "An examination of contextual factors and individual characteristics affecting technology implementation decisions in auditing", *International Journal of Accounting Information Systems* 9, pp 104-121.
- Calisir, F. et Calisir, F. (2004), "The Relation of Interface Usability Characteristics, perceived Usefulness, and perceived Ease of Use to End-user satisfaction with Enterprise Resource planning systems". *Computer in Human Behavior*, Vol. 20, pp. 505-515.
- Curtis, M. B., & Payne, E. A. (2014), "Modeling voluntary CAAT utilization decisions in auditing". *Managerial Auditing Journal*, 29, pp 304-326.
- Cheung, W., & Huang, W. (2005), "Proposing a framework to assess internet usage in university education an empirical investigation from a student's perspective", *British Journal of Educational Technology*, 36(2), pp 237-253.
- Davis, F.D. (1989), "Perceived usefulness perceived ease of use and user acceptance of information technology", *MIS Quarterly*, Vol.13, N°3, September, pp. 319-340.
- Davis, F.D., (1993), "user acceptance of information technology: system characteristic, user perception and behavioral impacts", *international journal of man-machine studies*, Vol. 38, N°3, pp. 475-487.
- Debreceny, R., Lee, S.L., Neo, W., et Toh, S. (2005), "Employing Generalized audit software in de financial services sector: challenges and opportunities", *Managerial Auditing Journal*, Vol. 20, N°6, pp. 605-618.
- DeLone, W.H. et McLean, E.R. (1992), "Information systems success; The quest for the dependent variable", *Information systems Research*, Vol. 13, N°1, March, pp. 60-95.
- DeLone W.H. et McLean, R.E., (2003), "The DeLone and McLean Model of Information Systems Success: A Ten Year Update", *Journal of Management Information System*, Vol.19, N°4, Spring, pp. 9-30.
- Deloitte (2017), "Man and Machine: Robots on the rise? The impact of automation on job market".
- Evrard, Y., Pras B. et Roux, E. (2003), "Market : Études et recherches en marketing", 3ème édition, Dunod, Paris.
- Etezadi-Amoli, J. et Farhoomand, A. (1996), "A structural Model of End-User Computing Satisfaction and user performance", *Information and Management*, Vol. 30, N°2, May, pp. 65-73.
- Fishbein, M. et Ajzen, I. (1975), "Belief, Attitude, Intention and Behaviour: An Introduction to Theory and Research", Reading, MA: Addison- Wesley.
- Goodhue, D.L. et Thompson, R.L. (1995), "Task-Technology fit and individual performance", *MIS Quarterly*, Vol. 19, N°2, June, pp. 213-236.
- Gatian, A. (1994), "Is User Satisfaction a valid Measure of system Effectiveness?" *Information and Management*, Vol. 26, pp, 119-131.
- Goodhue, D.L., Klein, B.D. et March, S.T. (2000), "User evaluations of IS as surrogates for objective performance", *Information and management*, Vol. 38, pp. 87-101.
- Guriting, P. et Ndubisi, O.N. (2006), "Borneo online Banking: evaluating Customer Perceptions and behavioral intention", *Management Research News*, Vol. 29, N°01/2, pp, 6-15.
- Guimaraes, T., et Igbaria, M. (1997), « Client /server system success: exploring the human side », *Decision science*, Vol. 28, N°4, pp. 851-875.
- Griffith, T. (1999), "Technology features as triggers for sense making", *Academic Management review*, Vol. 24, pp. 472-88.
- Gelderman, M. (1998), "The Relation between User Satisfaction Usage of Information Systems and Performance", *Information and Management*, Vol. 34, Pp. 11-18.



**CHAFIK K., MGHIZOU H. / Study of the acceptance and effect of audit automation software used by financial auditors on the legal mission**

- Harris S.B (2017), « Technology and the Audit of Today and Tomorrow », Issues for the Academic Community to Consider, PCAOB/AAA Annual Meeting.
- Hartwick, J.H., et Barki, H. (1994), "explaining the role of user participation in information system use", *Management science*, Vol. 40, pp. 440-465.
- Hu, P.J. et Chau, P.V.K. (1999), «Physician acceptance of telemedicine technology: an empirical investigation», *Topics in health information management*, Vol. 19 N°4, pp. 20-35.
- Ives, B., Olson, M.H et Baroudi, J.J. (1983), "The measurement of user information satisfaction", *Communication of the ACM*, Vol. 26, N°10, October, pp. 785-793.
- Igbaria, M. et Tan, M. (1997), "The Consequences of the Information Technology Acceptance on Subsequent Individual Performance", *Information & Management*, Vol. 32, N°3, pp. 113-121.
- Igbaria, M., T. et Davis, G.B. (1995), "Testing the determinants of microcomputer usage via a structural equation model", *Journal of management information systems*, Vol. 11, N°4, Spring, pp. 87-114.
- Jaansvriin, D., Bierstaker, J. et Lowe, D.J. (2008), "Auditor Acceptance of Computer-Assisted Audit Techniques", 26 pages.
- Jaansvriin, D., Bierstaker, J. et Lowe, D.J. 2008, « An Examination of audit information Technology usage and perceives importance», Working paper, Iowa state university, 35 pages.
- Jackson, C.M., Chau, S. et Leitch, R.A. (1997), "Toward and understanding of the behavioral intention to use an information system", *Decision sciences*, Vol. 28, N°2, Spring, pp. 357-389.
- Jain, V. et Kanungo, S. (2005), "Beyond perceptions and usage : impact of nature of information systems use on information system-Enabled productivity", *International journal of Human computer interaction*, Vol. 19, N°1, pp. 113-136.
- Kalaba, L.A. (2002): the benefits of CAAT. IT Audit.5.
- Kim, B.G., Park, S.C. et Lee, K.J. (2007), "A Structural Equation Modeling of the Internet acceptance in Korea", *Electronic Commerce Research and Applications*, pp. 1-8.
- Karahanna, E. et Limayem, M. (2000), "E-mail and V-mail usage: generalizing across technologies", *Journal of Organizational computing and Electronic Commerce*, Vol. 10, N°1, pp. 49-66.
- Konradt, U., Christophersen, T., et Schaeffer-Kuelz, U. (2006), "predicting user Satisfaction, Strain and System Usage of Employee Self-Services", *Human Computer Studies*, Vol. 64, pp. 1141-1153.
- Kim, B.G., Park, S.C et Lee, K.J. (2007), "A structural equation modeling of the internet acceptance in Korea", *Electronic Commerce Research and Applications*, pp. 1-8.
- Kim, D. et Chang, H. (2007), "Key Functional Characteristics in Designing and operating Health Information Websites for User Satisfaction: An Application of the Extended Technology Acceptance Model", *International Journal of Medical Information*, Vol. 76, pp. 790-800.
- Kim H-J, Mannino M, Nieschwietz R.J (2009), "Information technology acceptance in the internal audit profession: Impact of technology features and complexity", *International Journal of Accounting Information Systems* 10, pp 214-228.
- Liang, D., Lien, F. et Wu, S., (2001), "Electronically auditing EDP systems", *International Journal of Accounting Information systems*, Vol. 2, N°2, June, pp. 130-147.
- Lucas, H.C.Jr. et Spilter, V.K. (1999), "Technology use and performance A field study of broker workstations", *Decision Sciences*, Vol. 30, N°2, Spring, pp. 291-311.
- Leonard-Barton, D. (1988), "Implementation characteristics of organizational innovations", *Communication research*, Vol. 15, N°5, pp. 603-631.
- Lee, H., Kim, J. et Kim, J. (2007), "Determinants of success for application service provider: An Empirical Test in Small Business", *Human Computer Studies*, Vol. 65, pp. 796-815.
- Liao, C., Chen, J.L. et Yen, D.C. (2007), "Theory of planning Behavior (TPB) and Customer satisfaction in the Continued Use of e-Service: An Integrated Model", *Computers in Human Behavior*, Vol. 23, pp. 2804-2822.
- Lewis, W., Agarwal, R., & Sambamurthy, V. (2003), "Sources of influence on beliefs about information technology use: An empirical study of knowledge workers", *MIS Quarterly*, 27(4), 657-678.
- Mahmood, M.A., Burn, J.M. Gemoetes, L.A. et Jacquet, C. (2000), "Variables affecting Information Technology End-User Satisfaction; a Meta-Analysis of the Empirical Literature", *Human Computer Studies*, Vol. 52, pp. 751-771.
- Monnickendam, M., Savaya, R. et Waysman, M. (2007), "Targeting Implementation Efforts for Maximum Satisfaction with new computer systems: results from four Human service Agencies", *Computer in Human Behavior*.
- McFarland, J.D. et Hamilton, D. (2006), "Adding contextual specificity to the technology acceptance model", *Computer in Human Behavior*, Vol. 22, pp. 427-447.
- Markus ML. (1983), " Power, politics, and MIS implementation". *Commun ACM* 26(6), pp. 430-44.
- Moore, G.C. et Benbasat, I. (1991), "Development of an Instrument to Measure the Perceptions of Adopting an Information Technology Innovation", *Information Systems Research*, Vol. 2, N°3, pp. 192-222.
- Mugo D.G, Njagi. K, B. Chemwei and Motanya J.O, (2017): "The Technology Acceptance Model (TAM) and its Application to the Utilization of Mobile Learning Technologies" *British Journal of Mathematics & Computer Science* 20(4): 1-8.
- McGill, T., (2004), "The effect of End User Development on End User Success", *Journal of Organizational and End*

**CHAFIK K., MGHIZOU H. / Study of the acceptance and effect of audit automation software used by financial auditors on the legal mission**

- User Computing, January-March, Vol. 16, N°1, pp. 41-58.
- McFarland, J.D. et Hamilton, D. (2006), "Adding contextual specificity to the technology acceptance model", *Computer in Human Behavior*, Vol. 22, pp. 427-447.
- Moreau, E.M.F. (2006), "The Impact of intelligent decision support systems on intellectual task success: An empirical investigation", *Decision Support systems*, Vol. 42, pp. 593-607.
- Ndubisi, N.O. et Jantan, M. (2003), "Evaluating IS usage in Malaysian small and medium-sized firms using the technology acceptance model", *Logistics Information Management*, Vol. 16, N°6, pp. 440-450.
- O'Reilly, C. (1982), "Variations in Decision Makers' Use of Information Sources: The Impact of Quality and Accessibility of Information", *Academy of Management Journal*, Vol. 25, N°4, pp. 756-771.
- Porter, C.E. et Donthu, N. (2006), "Using the technology acceptance model to explain how attitudes determine Internet usage: The role of perceived access barriers and demographics", *Journal of Business Research*, Vol. 59, N°9, September, pp. 999-1007.
- Parveen. F and Sulaiman. A (2008), "Technology Complexity, Personal Innovativeness And Intention To Use Wireless Internet Using Mobile Devices In Malaysia" *International Review of Business Research Papers* Vol.4 No.5. October-November 2008. PP.1-10
- Payne, E. A., & Curtis, M. B. (2010). Can the unified theory of acceptance and use of technology help us understand the adoption of computer-aided audit techniques by auditors?" Working paper: University of Louisville and University of North Texas.
- Petter, S, DeLone W.H. et McLean, R.E, (2008), "Measuring information systems success: models, dimensions, measures, and interrelationships" *European Journal of Information Systems* (2008) 17, 236-263
- Rai, A., Lang, S.S. et Welker, R.B. (2002), "Assessing the validity of IS success models: an empirical test and theoretical analysis", *Information systems research*, Vol. 13, N°1, pp. 50-69.
- Rogers, E.M. (1995), *Diffusion of Innovations*, 4th edition, New York: Free Press
- Roca, J.C., Chiu, C.M. et Martinez, F.J. (2006), "Understanding e-Learning Continuance Intention: An Extension of the Technology Acceptance Model", *Human Computer Studies*, Vol. 64, pp. 683-696.
- Rowe R, (2008), "Discussion of An examination of contextual factors and individual characteristics affecting technology implementation decisions in auditing", *International Journal of Accounting Information Systems* 9, pp 127-129.
- Riemenschneider, C.K. et Hardgrave, B.C. (2001), "Explaining software development tool use with the technology acceptance model", *The Journal of Computer Information systems*, Summer, Vol. 41, N°4, pp. 1-8.
- Rifki Shihab. M, Meilatinova.N, Hidayanto A.N, Herkules (2017), "Determinants of CAATT acceptance: Insights from public accounting firms in Indonesia", *Procedia Computer Science*, pp 522-529
- Shaikh, J.M. (2005), "E-Commerce impact: emerging technology-electronic auditing", *Managerial Auditing Journal*, Vol. 20, N°4, pp. 408-421.
- Szajna, B. (1994), "Software evaluation and choice validation of the technology acceptance", *MIS Quarterly*, Vol. 18, N°3, September, pp. 319-335.
- Santhanam, R. Guimares, T. et George, J.F. (2000), "An Empirical Investigation of Odss Impact on Individuals and Organization", *Decision Support System*, Vol 30, pp. 51-72.
- Simmers, C.A. et Anandarajan, M. (2001), "User satisfaction in the Internet-Anchored Workplace: An Exploratory Study", *Journal of Information Technology Theory and Application*, Vol.3 N°5, pp. 39-61.
- Schepers, J., Wetzels, M., et Ruyter, K.D. (2005), "Leadership styles in technology acceptance: do followers practice what leaders preach?" *Managing Service quality*, Vol. 15 N°6, pp. 496-508.
- Son H, Park Y, Kim C, Chou J-S (2012), "Toward an understanding of construction professionals' acceptance of mobile computing devices in South Korea: An extension of the technology acceptance model", *Automation in Construction* 28, pp 82-90.
- Seddon, P.B. (1997), "A respecification and extension of the DeLone and McLean model of IS success" *Information systems Research*, Vol. 8 N° 3, p. 240-253.
- Son H, Park Y, Kim C, Chou J-S (2012), "Toward an understanding of construction professionals' acceptance of mobile computing devices in South Korea: An extension of the technology acceptance model", *Automation in Construction*, pp 82-90.
- Sun, P.C., Tsai, R.J., Finger, G., Chen, Y.Y. et Yeh, D. (2007), "What riveds a successful e-learning? An Empirical Investigation of the critical factors Influencing learner satisfaction, computers and education.
- Santhanam, R. Guimares, T. et George, J.F. (2000), "An Empirical Investigation of Odss Impact on Individuals and Organization", *Decision Support System*, Vol 30, pp. 51-72.
- Sabherwal, R. Jeyaraj, A. et Chowa, C. (2006), "Information System Success Individual and Organizational Determinants", *Management Science*, Vol. 52, N°12, December, pp. 1849-1864
- Shumate, J.R. et Brooks, R.C. (2001), "The effect of technology on auditing in government A discussion of the paperless audit", *The Journal of Government Financial Management*, Summer, Vol. 50, N°2, pp. 50-55.
- Sellen AJ, Harper RHR. (2002), "The myth of the paperless office". Cambridge (MA): MIT Press.
- Trice, A.W. et Treacy, M.E. (1988), "Utilization as a dependent variable in MIS research", *DATABASE*, Vol. 19, N°3/4, Autumn-Winter, pp. 33-41.
- Thiéart, R-A. (2003), "Méthodes de recherche en management", Paris, éditions Dunod.

**CHAFIK K., MGHIZOU H. / Study of the acceptance and effect of audit automation software used by financial auditors on the legal mission**

- Thompson, R.L., Higgins, C.A. et Howell, J.M. (1991), "Personal computing: Toward a conceptual model of utilization", *MIS Quarterly*, Vol. 15, N°1? March, pp. 125-143.
- Thompson, R.L., Higgins, C.A. et Howell, J.M. (1994), "Influence of experience on personal computer utilization: Testing a conceptual model", *Journal of Management Information System*, Vol.11, N°1, Summer, pp. 167-187.
- Thong, J.Y.L., Hong, S.J. et Tam, K.Y. (2006), "The effects of post-adoption beliefs on the expectation-confirmation model for information technology continuance", *Human Computer Studies*, Vol. 64, pp. 799-810.
- Venkatesh, V., Morris, M. G.B. Davis, G.B. et Davis, F.D. (2003), "User Acceptance of Information Technology : Toward a unified view", *MIS Quarterly*, Vol.27, N°3, Septembre, pp. 425-478.
- Venkatesh V, Davis F. (2000), "A theoretical extension of the technology acceptance model: four longitudinal studies". *Manag Sci* 46(2), pp.186–204.
- Vézina, M. (2006), "Améliorer la performance à l'aide des technologies de l'information et de la communication, une question de contrôle", *HEC Montréal, Gestion*, Avril, 33 pages.
- Wu, J.H. Wang, S.C. et Lin, L.M. (2007), "Mobile computing acceptance factors in the healthcare industry: A structural equation model", *International Journal of Medical Informatics*, Vol. 76, pp. 66-77.
- Wagner, G.D. et Flannery, D.D. (2004), "A quantitative study of factors affecting learner acceptance of a computer-based training support tool", *Journal of European Industrial Training*, Vol.28, N°5, pp. 383-399.
- Yang, H.D. et Yoo, Y. (2004), "It's all attitude revisiting the technology acceptance model", *Decision support systems*, Vol. 38, N°1 October, pp. 19-31.
- Yi, Y., Wu, Z. et Tung, L.L. (2006), "How Individual influence technology usage behavior? Toward an integrated framework", *The Journal of Computer Information Systems*, winter, Vol. 46, N°2, pp. 52-63.
- Yi, M.Y. et Hwang, Y. (2003), "Predicting the use of web-based information systems : Self-efficacy, enjoyment, learning goal orientation, and the technology acceptance model", *International of Human-Computer Studies*, Vol. 59, N°4, October, pp 431-449.
- Zhang, X. Prybutok, V. et Hang, A. (2006), "An Empirical study of Factor Affecting e-service satisfaction", *Human Systems Management*, Vol. 25, pp. 279-291.