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ANALYSIS OF THE FACTORS AFFECTING THE ADOPTION AND USE OF CONTINUOUS AUDIT TOOLS AND TECHNIQUES: COMPARISON BETWEEN THE PUBLIC AND PRIVATE SECTOR.

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ABSTRACT

The aim of this study is to identify the factors that significantly affect current and potential users of the continuous audit tools and techniques. Apart from this, users are faced with an emerging technology that is in the initial phases of implementation. Subjects of this study are auditors of the Big-4 and of the Chamber of Accounts of Spain. The questionnaire is based on the Innovation Diffusion Theory (IDT) and the Structural Model based on the Technology Acceptance Model (TAM). The comparative study between the private and public sectors allows us to note that the peculiarities and differences between private and public bodies bear an influence when it comes to accepting and using a given innovation in the work routine.

Keywords: *continuous auditing, technology, public sector, private sector, CATTs.*

1. INTRODUCTION

Technologies have altered the manner in which companies create value (Zhao et al., 2004). But however, there is occasionally a dichotomy between the technology available and the technology being used (Fichman and Kemerer, 1993). Likewise, assimilating technology is not sufficient, but rather it should be accepted and used so as to generate productivity (Agarwal and Prasad, 1997). To do so, it is necessary for the potential user to have sufficient know-how of the technology in order to decide for him or herself whether to adopt it or otherwise. The process of accepting innovation follows a sequence that allows the individual to shift from initial know-how of the innovation to forming a favourable or unfavourable attitude towards the same, which will affect its subsequent adoption or rejection (Rogers, 1983).

In this regard, when the individual has sufficient know-how of the innovation in question, and decides to adopt it, it may be the case that his or her beliefs after using it are altered significantly (Karahanna, Straub and Chervany, 1999), since the use of a product can change the individual's perceptions, attitudes and needs (Agarwal and Prasad, 1997).

It should also be taken into consideration that technology, until it is fully integrated in the company systems, goes through different stages. Cooper and Zmud (1990) identify an implementation process in 5 different stages. The aim of this study is to identify the factors that significantly affect current and potential users of the technology covered by this study. Apart from this, users are faced with an emerging technology that is in the initial phases of implementation.

This article is structured as follows: section 2 describes the background; section 3 presents the context where the technology being analysed is described. The following section deals with the research methodology and

variables. Section 5 covers the results obtained and the discussion. The final section describes the conclusions and limitations of the study.

2. BACKGROUND

In order to identify the factors affecting current and potential use of innovation, the *Innovation Diffusion Theory* (IDT) has been applied as we set out to reach an understanding as to how an innovation is adopted and implemented and the differences occurring in the process of making the innovation known (Snieska and Vasauskaite, 2005).

Innovation Diffusion Theory (IDT) has been analysed since 1960 to study a wide range of innovations, from agricultural tools to technologies in organizations (Tornatzky and Klein, 1982). The study of the diffusion of innovations has a considerable history in multidisciplinary fields (Rogers, 1995) and has been used by numerous professionals in numerous fields, ranging from agriculture to marketing (Surry, 1997).

The idea of innovation covers new products and services, new technologies and programmes and even ideas involving the modification of a body (Snieska and Vasauskaite, 2005). According to Rogers (1995), an innovation is "an idea, practice or object that is perceived to be new by an individual or another unit of adoption". Likewise, he defines diffusion as the process "by which an innovation is communicated through certain channels over time among the members of a social system".

There are mainly 4 factors that bear an influence on the process of making an innovation known: innovation in itself, the manner in which said innovation is made known, the time and the characteristics of the social environment where it is to be incorporated (Rogers, 1995). Research into diffusion looks into how these factors along with a further wide variety of factors interact to facilitate or hinder adopting a product or a practice among the members of a given community (Surry, 1997).

Apart from these factors, it should be taken into account that the new technologies have characteristics that exert an influence on the diffusion and assimilation of the same (Fichman, 1999).
According to Rogers (1995), 49 to 87% of the variability occurring in the adoption ratio of a given innovation can be explained in terms of 5 attributes: relative advantage, compatibility, complexity, trial period and visibility. The adoption ratio is defined as "the relative speed with which an innovation is adopted by the members of a social system".

Rogers (1983, 1995) defined each of these attributes as follows:
Relative advantage: the extent to which an innovation is perceived as being advantageous with regard to its predecessors. Agarwal and Prasad (1997) define this characteristic as the extent to which a potential user views the innovation as beneficial in terms of others that have previously been used to carry out the same task.
Compatibility: measures the perception of a given innovation in terms of the values, needs and previous experiences of the potential users. Tornatzky and Klein (1982) argued that it is one of the variables that significantly affect them being adopted.
Complexity: analyses the difficulty in understanding and using a given innovation. Systems that are perceived as easy to use and less complex have a high probability of being accepted and used by potential users (Agarwal and Prasad, 1997). Furthermore, when innovations are complex, potential users may need additional training (Gatignon and Robertson, 1985).
Trial period: measures the importance for the current or potential user of being able to experience and test the innovation before adopting it.
Observability: the extent to which the results obtained by using an innovation are observed by other subjects.
Moore and Benbasat (1991) increased the number of attributes that are relevant when evaluating adopting an innovation, by introducing attributes such as image, visibility and display of results, which have been considered in this study. The definition of each of these is detailed as follows:
Image: analyses how the use of an innovation is perceived as an improvement of the individual's image that is used or of the environment in which it is adopted.
Visibility: measures how the implementing of an innovation in the organization is observed by other individuals.
Demonstration of results: evaluates obtaining certain results through the use of innovation, also considering that these results are observed and communicated to other subjects.

Apart from these attributes, the perception of certain characteristics of an innovation can be influenced by the directors or senior levels in the organization (Agarwal and Prasad, 1997). This influence has been acknowledged by Moore and Benbasat (1991) with the attribute of voluntariness, defining it as the use of an innovation on a voluntary and non-compulsory basis.

Consideration is given here to these characteristics in order to draft a questionnaire that will allow us to identify which bear a significant influence on the types of uses that *Innovation research* distinguishes, among which are the "initial use" of the innovation and "continued use" (Rogers, 1983). Likewise, previous studies have looked at the use of innovation from 2 angles: one that measures the current use of an innovation, and the other, which considers the future intentions of using it (Agarwal and Prasad, 1997).

The initial use of the innovation without a subsequent institutionalization may, according to Cooper and Zmud (1990) undergo various stages, such as of initiation, adoption, adaptation, acceptance, routine and diffusion. But however, it is not necessary to follow the entire process sequentially or strictly (Locke and Lowe, 2006).
In the *Initiation* phase, problems/opportunities are identified at organizational level and solutions at *information technology* level (IT) are found. The pressures affecting the change arise from organizational needs (*pull*), innovations in IT (*push*) or both.

In the *Adoption* phase, policy and rational negotiations occur in order to capture or invest in the resources required for implementation.

Later, at the *Adaptation* phase, the IT is subject to tasks involving development, installation and maintenance, and it is incorporated in to the organization's procedures and systems. Likewise, at this phase, the members of the organization are given training and practicals to enable them to make use of the innovation. In these initial phases of implementation, we find works such as Agarwal and Prasad (1997), who studied WWW in an MBA programme, and Davis (1993) who analysed the use of e-mail and of text editors by professionals in a given company.

The phases of Acceptance, Routine and Diffusion are considered to be the final phases of implementation of a technology. In the *Acceptance* phase, the members of the organization agree to apply and use the innovation. *Routine* is when the innovation begins to be used in the organization and to be considered as part of the organizational structure, leading to *Diffusion* where technology is fully integrated into the organization and all the advantages provided are made use of. In these final stages of implementation, there are prior studies, such as the one by Karahanna et al. (1999), who looked into adopting Windows in a given organization to identify the differences between pre- and post-adoption; Argawal et al. (1998) researched the implementation of a recording system over the web for university students, while Hsieh and Zmud (2007) analysed behaviours in use following adoption.

This research analyses the technology with an approach that has already been used in previous studies since it considers the theoretical framework of *Innovation Diffusion*
Theory and the characteristics of the Innovation, identifies the types of users and attends to the phases of implementation in which the technology is found. But however, it sets out to broaden the previous literature since it studies an emergent technology that is not at a stage of maturity and, therefore, the initial use is not predictive of the use in the future (Fig. 1).

INSERT FIGURE 1: WORK APPROACH

3. CONTEXTUALIZATION OF THE STUDY

The technology analysed in this research are the tools and techniques of continuous auditing.
In the field of auditing, the technological innovations are aimed at achieving continuous auditing systems, being defined as the transformation of external and internal auditing through the application of new information technologies (Alles et al., 2006). Nevertheless, this definition does not explain the importance and scope of this transformation.

Fortunately, continuous auditing is an issue being worked on for several years now, and the existing literature is extensive and diverse, so that there are more complete definitions that make it possible to understand, with greater detail, the transformation involved in implementing continuous auditing systems.

Thus, in 1999, the CICA/AICPA defined Continuous Auditing as a methodology that allows independent auditors to provide written guarantees for an event, by a series of auditing reports issued almost simultaneously or in a short period of time after the occurrence of such an event.

Alles et al. (2002) defines continuous auditing as the application of new information technologies to traditional auditing, either by drafting the annual audit report or for the internal audit itself.

Rezaee et al. (2002) consider continuous auditing to be the automation and integration of auditing processes by making use of technological development. In this manner, auditors can guarantee the safety of information at the same time or in a short time interval after it has been drafted.

Continuous auditing is defined as a systematic process of compiling electronic evidence to issue an opinion of the financial position, drafted without paper, and in real time (Rezaee et al., 2001).
Continuous auditing is a method used to carry out control and evaluations, automatically and more frequently (Coderre, 2005).

In continuous auditing, technological resources play a vital role as they are used to audit both the financial and non-financial information supplied by companies, in a short period of time. Thus, achieving a continuous auditing system involves the use of specific tools and techniques designed for the purpose.

Such tools and techniques are known as CATTs (Continuous Auditing Techniques and Tools). Apart from these, there are the CAATs (Computer Assisted Audit Tools), which are continuous audit tools entailing the use of the computer. CAATs are essential for carrying out continuous auditing. It allows auditors to increase their productivity and to improve auditing (Zhao et al., 2004). Both types of tools make it possible to perform numerous activities involved in the auditing process.

4. METHODOLOGY

Subjects of this study are auditors of the Big-4 (KPMG, Deloitte, PriceWaterhouseCoopers and Ernst & Young) and of the Chamber of Accounts of Spain. All these have knowledge of CATTs and have the opportunity to use them, but however, there are auditors who are applying them in their work, whereas others have still not used them. For this reason, we can differentiate between current use and future intentions of use (current users and potential users). In accordance with the IDT and taking into account the characteristics of the innovation, 2 identical questionnaires were used, the drafting of which has been modified to reflect adoption or continued use. However, in the questionnaire sent to the current users, an additional construct was included, known as "Frequency of use" in order to determine the extent to which the CATTs are used.

In the questionnaire, 8 constructs were included (relative advantage, compatibility, complexity, trial period, visibility, demonstration of results and voluntariness), which are based on the *Innovation Diffusion Theory*, and a total of 23 items are measured. Likewise, prior to sending the questionnaires, these were validated with auditing and accounting experts in order to achieve feedback regarding the reliability of the constructs, scales, wording of the questions and terminology.

5. DESCRIPTIVE STATISTICS

The following tables show the descriptive statistics with regard to the type of user and the entity in which it is applied.

Table 1 presents the information obtained when statistically processing the replies to the questionnaires sent to the auditors of one of the Big-4. This table contains information corresponding to the auditors who replied as current users of CATTs. In line with these data, the factor most valued by the auditors when using a new tool is the *relative advantage*, understood as the improvement involved in the use of new technology in terms of the methods previously used. Within this factor, the aspect most valued is the greater control that they have on the auditing process when using the CATTs, whereas the least valued factor is the possibility to perform tasks more speedily.

Furthermore, the factor that bears least influence in the use of the CATTs is the *demonstration of results*, understood as the importance that it has for the audit to observe and communicate the results arising from the use of these tools. Likewise, this is the only factor in which the auditors have chosen the minimum value in their replies.

The other factors are punctuated with mid values, ranging from 4 to 4.67.

INSERT TABLE 1: Response of current users of CATTs in auditing 1

Table 2 shows the descriptive statistics of the questionnaires replied to by potential users of CATTs in the same auditing. Curiously, on this occasion, the fact that bore least influence on potential users when deciding whether to use continuous audit tools and techniques or otherwise is that of *relative advantage*, whereas the most valued is that of *visibility*, i.e., they would adopt CATTs if they were up to date in the organization and were used by

some of its members. Furthermore, the other factors obtain evaluations with hardly any significant differences between them, fluctuating between 5.12 and 5.32. Likewise, it should also be noted that factors such as *Ease of use*, *Compatibility* and *Voluntariness* are very much taken into account when starting to use CATTs since all the auditors assigned them a score of at least 4.

INSERT TABLE 2: Reply by potential users of CATTs in audit 1

Table 3 shows the statistics for the replies by potential users of CATTs in audit 2. We have obtained no response from current users from this audit, possibly because of the scarce diffusion of these tools in this organization. Also, the evaluations assigned to factors such as *relative advantage*, *trial period*, *ease of use*, *compatibility* and *demonstration of results* are significantly greater than those for audit 1. So, a certain predisposition can be expected towards the use of these tools in the near future if they come up to the expectations of potential users. In this regard, it is the ease of use and, mores specifically, the fact that the CATTs facilitate performing tasks, that is the aspect that can be most influential when it comes to using them. Conversely, the least valued factor is that if *image* since CATTs can be used by anybody in the organization, without distinction, as it does not imply a greater prestige or possibilities of promotion.

Finally, it is worth turning attention on the *visibility* factor since the discrepancies in the evaluations made by the interviewees lead to queries when it comes to analysing if CATTs are being used or are up to date in this organization.

INSERT TABLE 3: Response of potential users of CATTs in audit 2

Tables 4 and 5 show the statistics for current and potential users of accounts chambers. Both types of users assigned the highest score to the *relative advantage* factor, so that the fact that CATTs are a significant improvement in terms of methods used previously, this is an aspect that has influenced and will influence their being adopted. Potential users have assigned the maximum score in this factor to the possibility of the use of CATTs speeding the performance of tasks and of making it possible to reduce the number of errors and of having a greater control over the auditing process – taxation. Likewise, these users also consider it interesting that there should be a *trial period* for CATTs prior to adopting them in order to see how they work.

Furthermore, the factor with the lowest score assigned by current users is that of *image* since CATT users do not have any greater prestige or status in the entity, nor do they imply it being easier to be promoted. In this regard, the scores given by potential users for factors of image, voluntariness and visibility are not significant since only a third of these users responded to these questions.

INSERT TABLE 4: Response from current users of CATTs in the Accounting Chambers
INSERT TABLE 5: Response of potential users of CATTs in the Accounting Chambers

6. STRUCTURAL MODEL ESTIMATE AND COMPARISON OF HYPOTHESES

Characteristics of the study

Here follows a brief summary, outlining the characteristics of the study:

Object of the study	Current and potential use of the Continuous Auditing Techniques and Tools by auditors of the 4 main auditing companies (Big-4), such as KPMG, PriceWaterhouseCoopers, Ernst & Young and Deloitte & Touche and the Accounting Chambers of Spain.
Methodology	Questionnaire based on the *Innovation Diffusion Theory* (IDT) and the Structural Model based on the Technology Acceptance Model (TAM).
Questionnaire structure	8 constructs are included (relative advantage, compatibility, complexity, trial periods, image, visibility, demonstration of results and voluntariness), which are based on the Innovation Diffusion Theory (IDT) and a total of 23 items are measured.
Size of the sample	43 questionnaires (30) on the auditings and 13 on the Accounting Chambers). Out of the 30 on the auditings, 13 (43%) correspond to current users and 17 (57%) to potential users. Out of the 13 on the Accounting Chambers, 10 (77%) correspond to current users and 3 (23%) to potential users).

The technique used for processing the data has been the Software Visual PLS, which makes it possible to work with our composites based on 30 observations. The use of PLS analysis makes it possible to compare the hypotheses posed in this work that are shown in the following section.

6.1 Model hypothesis

The hypotheses of the model are drawn from the structural model proposed by the Technology Acceptance Model (TAM). This model explains the acceptance of a given technology in terms of beliefs, attitudes, intentions and behaviours of the current/potential user. In this research, IDT is the starting point for developing the measuring model, which is the questionnaire, and is used based on TAM theory to determine the structural model for the research and thus to establish relationships between constructs. In accordance with the research model put forward by TAM, the hypotheses would be as follows:

H1*: the beliefs of the current/potential users in the benefits of CATTs would bear a positive influence on the ease of use perceived.

H2*: the beliefs of the current/potential users in the benefits of CATTs would bear a positive influence on the utility perceived.

H3: the utility perceived would bear a positive influence on the use of CATTs.

H4: the ease of use perceived would bear a positive influence on the use of CATTs.

As variables considered "beliefs of the current/potential users" the following are found: Compatibility; Trial period; Image; Demonstration of results; Visibility and Voluntariness. Thus, by taking these variables into account, hypotheses 1 and 2 can be broken down as follows:

H5: the use of CATTs during a trial period would bear a positive influence on the perception of ease of use.

H6: compatibility of CATTs with the methods used prior to there being implemented would bear a positive influence on the ease of use perceived.

H7: obtaining satisfactory results when using CATTs would bear a positive influence on the ease of use perceived.

H8: the possibility to adopt CATTs such as a voluntary option would directly affect ease of use.

H9: compatibility of CATTs with the methods used before they are implemented would bear a positive influence on the utility perceived.

H10: obtaining satisfactory results when using CATTs would bear a positive influence on the utility perceived.

H11: the image and prestige obtained through adopting CATTs would directly influence utility.

H12: the visibility obtained by the use of CATTs would influence in the utility perceived.

H13: the possibility of adopting CATTs as a voluntary option would directly influence utility.

INSERT FIGURE 2: Structural Research Model

6.2 Analysis of the measurement model

This section analyses the reliability and validity of the measurement model. To achieve this, the reliability of the items and constructs, the convergent validity and the discriminating validity are analysed.

6.2.1 Evaluation of the individual reliability of the items

The following table shows the loads or correlations of the indicators that make up each construct. According to Falk and Miller (1992), are acceptable values the same as or greater than 0.505. In our case, all loadings **are significant**, with values greater than 0.505, so that it is not necessary to respecify the model.

Once the loadings are analysed, it is relevant to calculate the t-Student values that make it possible to determine the significance of the path coefficients, significant values being the same as or greater than 1.96 (at a level of 5%). In this manner, it is shown that all the t-Student loadings **are significant**, with values greater than 1.96.

INSERT TABLE 6: Loads or correlations of the indicators

Here follow the standard errors of variables that will allow us to specify the measuring model equations.

INSERT TABLE 7: Standard errors

Measuring model equations:

Trial period:

TP1= α Trial period + ɣ= 0.8971 Trial period + 0.0576

TP2= α Trial period + ɣ= 0.6134 Trial period + 0.2102

TP3= α Trial period + ɣ= 0.5707 Trial period + 0.1812
Compatibility:
C1= α Compatibility + ɣ= 0.7884 Compatibility + 0.0969
C2= α Compatibility + ɣ= 0.6066 Compatibility + 0.2161
C3= α Compatibility + ɣ= 0.8082 Compatibility + 0.0974
Demonstration of results:
DR1= α Demonstration of results + ɣ= 0.8722 Demonstration of results + 0.0337
DR2= α Demonstration of results + ɣ= 0.8692 Demonstration of results + 0.0800
DR3= α Demonstration of results + ɣ= 0.8352 Demonstration of results + 0.0904
Image:
I1= α Image + ɣ= 0.8077 Image + 0.1237
I2= α Image + ɣ= 0.9611 Image + 0.0194
I3= α Image + ɣ= 0.9674 Image + 0.0372
Visibility:
V1= α Visibility + ɣ= 0.9728 Visibility + 0.2354
V2= α Visibility + ɣ= 0.7091 Visibility + 0.2424
Voluntariness:
VO1= α Voluntariness + ɣ= 0.8581 Voluntariness + 0.1484
VO2= α Voluntariness + ɣ= 0.7019 Voluntariness + 0.2342
Relative advantage:
RA1= α Relative advantage + ɣ= 0.9151 Relative advantage + 0.0257
RA2= α Relative advantage + ɣ= 0.9247 Relative advantage + 0.0252
RA3= α Relative advantage + ɣ= 0.8713 Relative advantage + 0.0538
RA4= α Relative advantage + ɣ= 0.8961 Relative advantage + 0.0274
Ease of use:
EU1= α Ease of use + ɣ= 0.7020 Ease of use + 0.1528
EU2= α Ease of use + ɣ= 0.8472 Ease of use + 0.0586
EU3= α Ease of use + ɣ= 0.8425 Ease of use + 0.0738

6.2.2 Evaluation of the reliability of Construct Evaluation

When evaluating the reliability of a construct, checks are made for the consistency of all the indicators making up said construct. To do so, the compound reliability (pc) is measured which, in accordance with Nunnally (1978) should be the same as or greater than 0.7, in this investigation **all the constructs obtained values greater than 0.7**, and even 0.9, as is the case of the Image and Relative Advantage constructs.

INSERT TABLE 8: Compound reliability

6.2.3 Evaluation of convergent validity

Convergent validity is drawn from the analysis of average extracted variance (AEV), and allows us to determine what amount of construct variance is due to the indicators that make it up. Thus, according to Fornell and Lacker (1981), values greater than 0.5 are acceptable. In our model, **all the values are greater than 0.5**.

INSERT TABLE 9: Average extracted variance

6.2.4 Evaluation of discriminating validity

In order to determine the discriminating validity of a construct, the square root of the average extracted variance (AEV), this having to be greater than the correlations presented with the other constructs. The diagonal of the following table shows these values, it having been proven that they comply with the exposed condition so that they have discriminating validity.

INSERT TABLE 10: Discriminating validity

6.3 Structural model analysis

This section sets out to:

- Determine the predictive power of the proposed model.
- Determine the β path coefficients that indicate the intensity of relations between constructs or latent variables.
- Observe the stability of the estimates.

6.3.1 Determination of the β path coefficients

The following table shows the intensity of relationships between constructs. Here the presence of path coefficients is noted that are not greater than the value of 0.2 established by Chin (1998), as in the case of the relations between TP>EU; C>EU; DR>RA; I>RA: V>RA; VO>EU; VO>RA and RA>USE.

INSERT TABLE 11: Intensity of relationships between constructs

Once the path coefficients are calculated, the explained variance (R2) for the endogenous variables is also calculated. This is reached by multiplying the path coefficient between constructs by the existing value of correlation between said constructs.

INSERT TABLE 12: Explained variance (R2) for the endogenous variables

6.3.2 Analysis of the predictive capability of the proposed model (R^2)

The variance value explained for the latent dependent variables is shown below, obtaining suitable values greater than or the same as 0.1, in accordance with Falk and Miller (1992).

INSERT TABLE 13: Predictive capability of the model

6.4 Hypothesis analysis

The figure below shows the β coefficients and the T-Student values (in brackets) for the different relationships established in our model, produced in accordance with the TAM theory.

The illustration shows the relationships between non-significant constructs that have not been highlighted previously in the table of path coefficients, as well as the significant relationships between C>RA; DR>EU; EU>USE.

INSERT FIGURE 3: Hypothesis analysis (I)

Structural model equations:

Ease of use = 0.125 Trial period + 0.180 Compatibility + 0.504 Demonstration of results + 0.085 Voluntariness + γ_1

Relative advantage = 0.503 Compatibility + 0.048 Demonstration of results – 0.313 Image + 0.066 Visibility + 0.129 Voluntariness + γ_2

Use = -0.259 Relative advantage + 0.620 Ease of use + γ_3

The following table contrasts the hypothesis with the significance of the same based on the study of the β coefficient values and the T-Student values.

INSERT TABLE 14: β coefficient values and the T-Student values

In short, the following hypotheses are accepted:

H4: the ease of use perceived will positively affect the use of CATTs, with a significance level of **P>0.001**.

H7: obtaining satisfactory results by using CATTs will have a positive effect on the ease of use perceived, with a significance level of **P>0.01**.

H9: compatibility of the CATTs with the methods used prior to implementation will bear a positive influence on perceived utility, with a significance level of **P>0.05**.

INSERT FIGURE 4: Hypothesis analysis (II)

7. CONCLUSIONS

The comparative study between the private and public sectors allows us to note that the peculiarities and differences between private and public bodies bear an influence when it comes to accepting and using a given innovation in the work routine. The same occurs depending on the type of user surveyed. Thus, among current users of continuous audit tools and techniques (CATTs) in the private sector, the most valued factor is relative advantage since they consider it essential for development and improvement at work and, if this is possible thanks to a new technology, then it will be accepted generally. The private sector audits the information of other companies requiring appropriate and relevant information for decision-making. For this reason, the auditing firms consider it essential to adapt themselves to customer requirements by using techniques and tools that allow them to go about their work in the best manner possible.

As far as the potential users of CATTs are concerned, in the private sector, the factors that are most valued are ease of use since, if no long learning process is involved, if they facilitate carrying out tasks, the potential user is predisposed to using them in the near future. Likewise occurs with the factor of visibility as it promotes the use of tools and techniques, if they are currently being used in the work environment.

In the public sector, one of the factors that bears most influence both on current and potential users of CATTs is that of relative advantage, as occurred with the current users in the private sector. Likewise, a fairly important aspect for both types of users in the public sector is that of the trial period since they consider it of the utmost importance to be able to apply them and observe how they work, over a period of time, prior to adopting them, in order to evaluate their utility.

When using the structural model, in accordance with the TAM model, it is confirmed that acceptance of a given technology is in terms of beliefs, attitudes, intentions and behaviours of the current/potential user. So, it is noted that the ease of use perceived bears an influence in the use of CATTs, while at the same time, demonstration of results based on an analysis of the advantages and drawbacks involved in their use, increase the perception of ease of use. On the other hand, the compatibility of continuous auditing techniques and tools bears a direct influence on the user's perception of relative advantage.

In the questionnaire sent, the interviewees were asked about a series of continuous audit tools and techniques, noting that a lack of knowledge was more than patent in the majority of cases.

Progress in the use of continuous audit tools and techniques, both in the private and public sectors, is essential for reducing the time spent in the auditing process and, therefore, for reducing delay in auditing while increasing the opportunity to compile financial information. This research has made it possible to visualize the factors that are most valued by the users, in order to work on them and to ensure that the adoption and implementation of CATTs is successful and real, in a short time frame.

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TABLES AND FIGURES

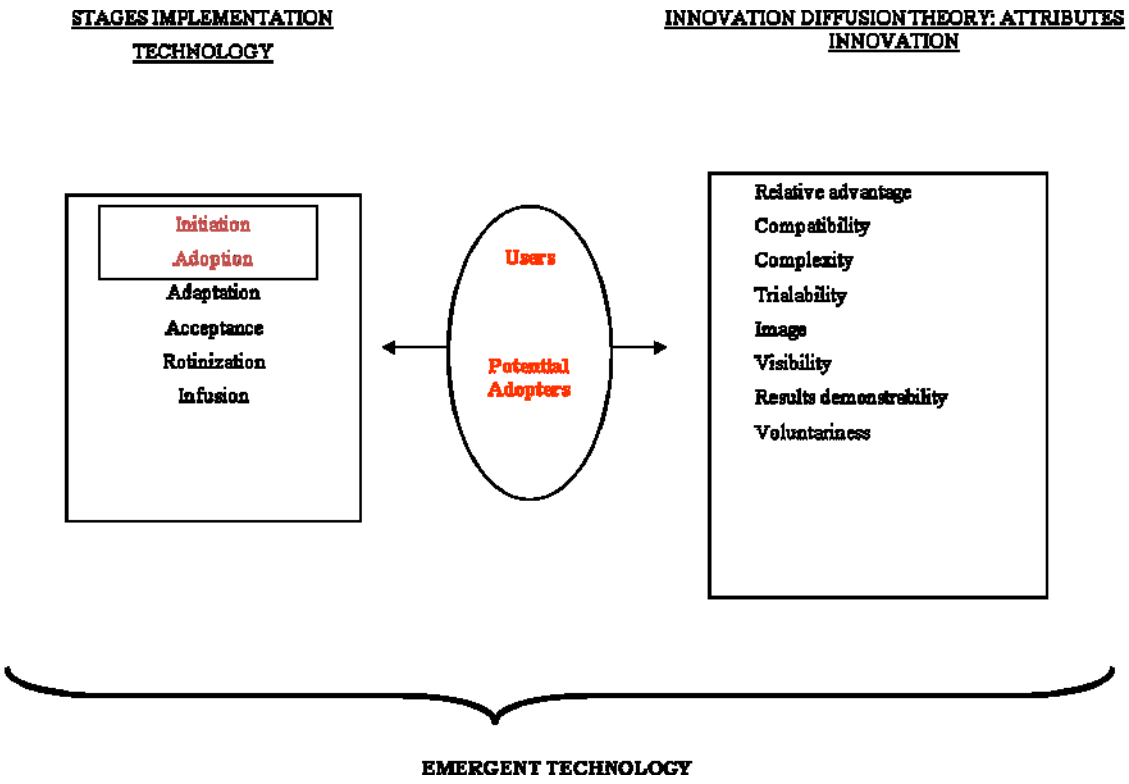

Figure 1: Work approach

	Current users					
	Average	**Median**	**Mode**	**Typical Dev.**	**Maximum**	**Minimum**
Relative advantage	5.00	5.00	4.00	1.28	7.00	3.00
Trial period	4.67	5.00	4.00	0.96	7.00	3.00
Ease of use	4.54	4.00	4.00	1.07	7.00	3.00
Compatibility	4.49	4.00	4.00	1.19	7.00	3.00
Demonstration of results	3.62	4.00	3.00	1.11	6.00	1.00
Image	4.31	4.00	4.00	1.08	7.00	2.00
Visibility	4.54	4.00	4.00	1.39	7.00	3.00
Voluntariness	4.00	4.00	4.00	1.20	7.00	2.00
Frequency of use	4.44	4.00	4.00	1.21	7.00	2.00

Table 1: Response of current users of CATTs in auditing 1

	Potential users					
	Average	**Median**	**Mode**	**Typical Dev.**	**Maximum**	**Minimum**
Relative advantage	5.02	5.00	5.00	0.85	6.00	3.00
Trial period	5.21	5.00	5.00	0.78	6.00	3.00
Ease of use	5.21	5.00	5.00	0.60	6.00	4.00
Compatibility	5.30	5.00	5.00	0.77	7.00	4.00
Demonstration of results	5.12	5.00	6.00	0.89	6.00	3.00
Image	5.12	5.00	5.00	0.89	6.00	3.00
Visibility	5.41	5.00	5.00	0.73	7.00	4.00
Voluntariness	5.32	5.00	6.00	0.72	6.00	4.00

Table 2: Reply by potential users of CATTs in audit 1

	Potential users					
	Average	**Median**	**Mode**	**Typical Dev.**	**Maximum**	**Minimum**
Relative advantage	6.21	6.00	6.00	0.88	7.00	4.00
Trial period	5.39	5.00	5.00	1.29	7.00	3.00
Ease of use	6.44	7.00	7.00	1.10	7.00	3.00
Compatibility	5.67	6.00	7.00	1.41	7.00	3.00
Demonstration of results	5.67	6.00	6.00	0.84	7.00	4.00
Image	4.00	4.00	4.00	1.13	6.00	2.00
Visibility	4.50	5.00	2.00	2.20	7.00	2.00
Voluntariness	5.25	5.50	5.00	1.91	7.00	1.00

Table 3: Response of potential users of CATTs in audit 2

	Current users					
	Average	**Median**	**Mode**	**Typical Dev.**	**Maximum**	**Minimum**
Relative advantage	6.18	6.00	6.00	0.71	7.00	4.00
Trial period	5.53	6.00	6.00	1.25	7.00	3.00
Ease of use	5.03	5.00	6.00	1.22	7.00	3.00
Compatibility	5.90	6.00	6.00	1.21	7.00	1.00
Demonstration of results	4.87	6.00	6.00	1.72	7.00	1.00
Image	2.00	1.00	1.00	1.29	5.00	1.00
Visibility	5.15	6.00	6.00	1.53	7.00	2.00
Voluntariness	4.00	4.00	3.00	3.00	7.00	1.00
Frequency of use	6.33	7.00	7.00	0.84	7.00	4.00

Table 4: Response from current users of CATTs in the Accounting Chambers

	Potential users					
	Average	**Median**	**Mode**	**Typical Dev.**	**Maximum**	**Minimum**
Relative advantage	6.83	7.00	7.00	0.39	7.00	6.00
Trial period	6.11	7.00	7.00	1.17	7.00	4.00
Ease of use	5.33	5.00	7.00	1.66	7.00	2.00
Compatibility	4.56	5.00	6.00	1.42	6.00	2.00
Demonstration of results	4.78	6.00	6.00	1.92	7.00	2.00
Image	2.33	2.00	2.00	0.58	3.00	2.00
Visibility	5.50	5.50	-	0.71	6.00	5.00
Voluntariness	2.00	2.00	2.00	0.00	2.00	2.00

Table 5: Response of potential users of CATTs in the Accounting Chambers

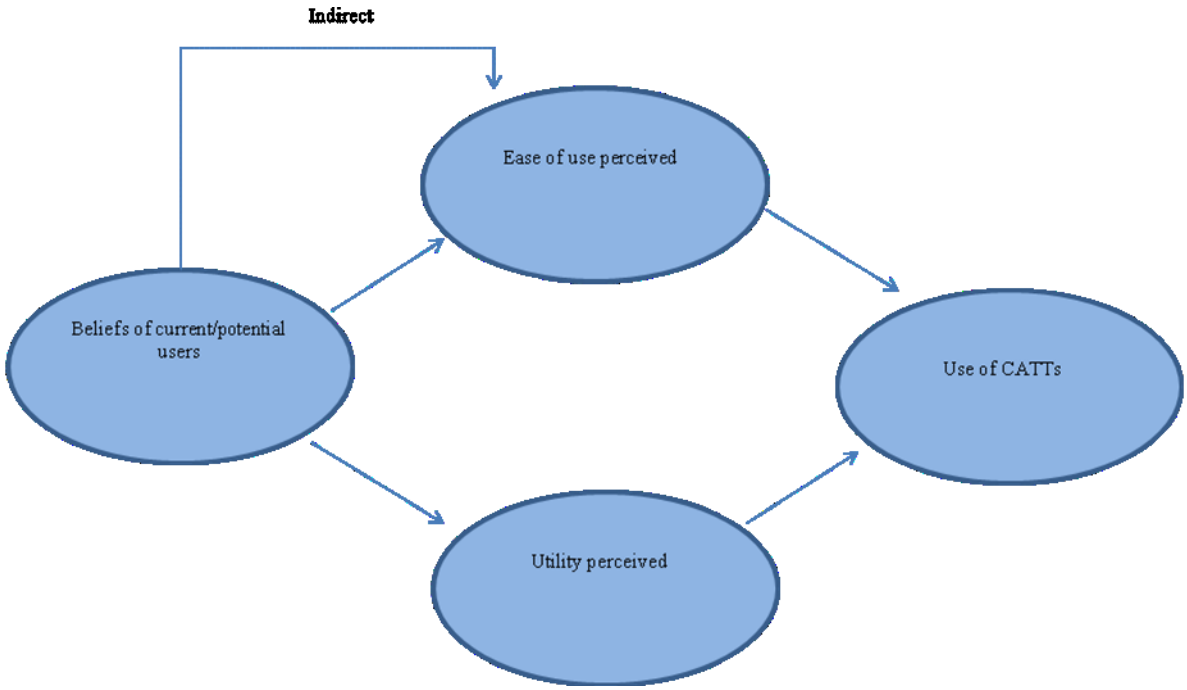

Figure 2: Structural Research Model

Construct	**Indicator**	**Loading**	**t- Student**
Trial period	TP1	0.8971	15.5691
	TP2	0.6134	2.9187
	TP3	0.5707	3.1493
Compatibility	C1	0.7884	8.1351
	C2	0.6066	2.8065
	C3	0.8082	8.2973
Demonstration of results	DR1	0.8722	25.8561
	DR2	0.8692	10.8703
	DR3	0.8352	9.2387
Image	I1	0.8077	6.5296
	I2	0.9611	49.5150
	I3	0.9674	25.9862
Visibility	V1	0.9728	4.1325
	V2	0.7091	2.9255
Voluntariness	VO1	0.8581	5.7826
	VO2	0.7019	2.9975
Relative advantage	RA1	0.9151	35.6650
	RA2	0.9247	36.6637
	RA3	0.8713	16.2092
	RA4	0.8961	32.6487
Ease of use	EU1	0.7020	4.5935
	EU2	0.8472	14.4545
	EU3	0.8425	11.4148
Use	US	1.0000	0.0000

Table 6: Loads or correlations of the indicators

Construct	**Indicator**	**Standard errors**
Trial period	TP1	0.0576
	TP2	0.2102
	TP3	0.1812
Compatibility	C1	0.0969
	C2	0.2161
	C3	0.0974
Demonstration of results	DR1	0.0337
	DR2	0.0800
	DR3	0.0904
Image	I1	0.1237
	I2	0.0194
	I3	0.0372
Visibility	V1	0.2354
	V2	0.2424
Voluntariness	VO1	0.1484
	VO2	0.2342
Relative advantage	RA1	0.0257
	RA2	0.0252
	RA3	0.0538
	RA4	0.0274
Ease of use	EU1	0.1528
	EU2	0.0586
	EU3	0.0738
Use	US	0.0000

Table 7: Standard errors

Constructs	**Compound reliability (pc)**
Trial period	0.743639
Compatibility	0.781469
Demonstration of results	0.894115
Image	0.938784
Visibility	0.836997
Voluntariness	0.759385
Relative advantage	0.945825
Ease of use	0.841244
Use	1.000000

Table 8: Compound reliability

Constructs	**AEV**
Trial period	0.502258
Compatibility	0.547552
Demonstration of results	0.737933
Image	0.837275
Visibility	0.724559
Voluntariness	0.614469
Relative advantage	0.813672
Ease of use	0.640150
Use	1.000000

Table 9: Average extracted variance

	TP	C	DR	I	V	VO	RA	EU
TP	**0.7087**							
C	0.585	**0.7399**						
DR	0.526	0.576	**0.8590**					
I	-0.152	-0.252	0.073	**0.9150**				
V	0.416	0.407	0.227	-0.129	**0.8512**			
VO	0.274	0.279	0.456	-0.568	0.310	**0.7838**		
RA	0.646	0.672	0.389	0.354	0.281	0.134	**0.9020**	
EU	0.518	0.567	0.712	-0.113	0.120	0.399	0.520	**0.8000**
USE	0.247	0.119	0.417	-0.454	0.066	0.455	0.064	0.486

Table 10: Discriminating validity

Relations of the internal model	**Path coefficients**
TP->EU	0.1250
C->RA	0.5030
C->EU	0.1800
DR->RA	0.0480
DR->EU	0.5040
I->RA	-0.3130
V->RA	0.0660
VO->EU	0.0850
VO->RA	0.1290
RA->USE	-0.2590
EU->USE	0.6200

Table 11: Intensity of relationships between constructs

Relations of the internal model	Path coefficients	Correlations	% of explained variance
TP->EU	0.1250	0.518	6.475%
C->RA	0.5030	0.672	33.8016%
C->EU	0.1800	0.567	10.206%
DR->RA	0.0480	0.389	1.8624%
DR->EU	0.5040	0.712	35.8848%
I->RA	-0.3130	0.354	11.0802%
V->RA	0.0660	0.281	1.8546%
VO->EU	0.0850	0.399	3.3915%
VO->RA	0.1290	0.134	1.7286%
RA->USE	-0.2590	0.064	1.6576%
EU->USE	0.6200	0.486	30.132%

Table 12: Explained variance (R2) for the endogenous variables

Endogenous constructs	R^2
Relative advantage	0.504
Ease of use	0.559
Use	0.285

Table 13: Predictive capability of the model

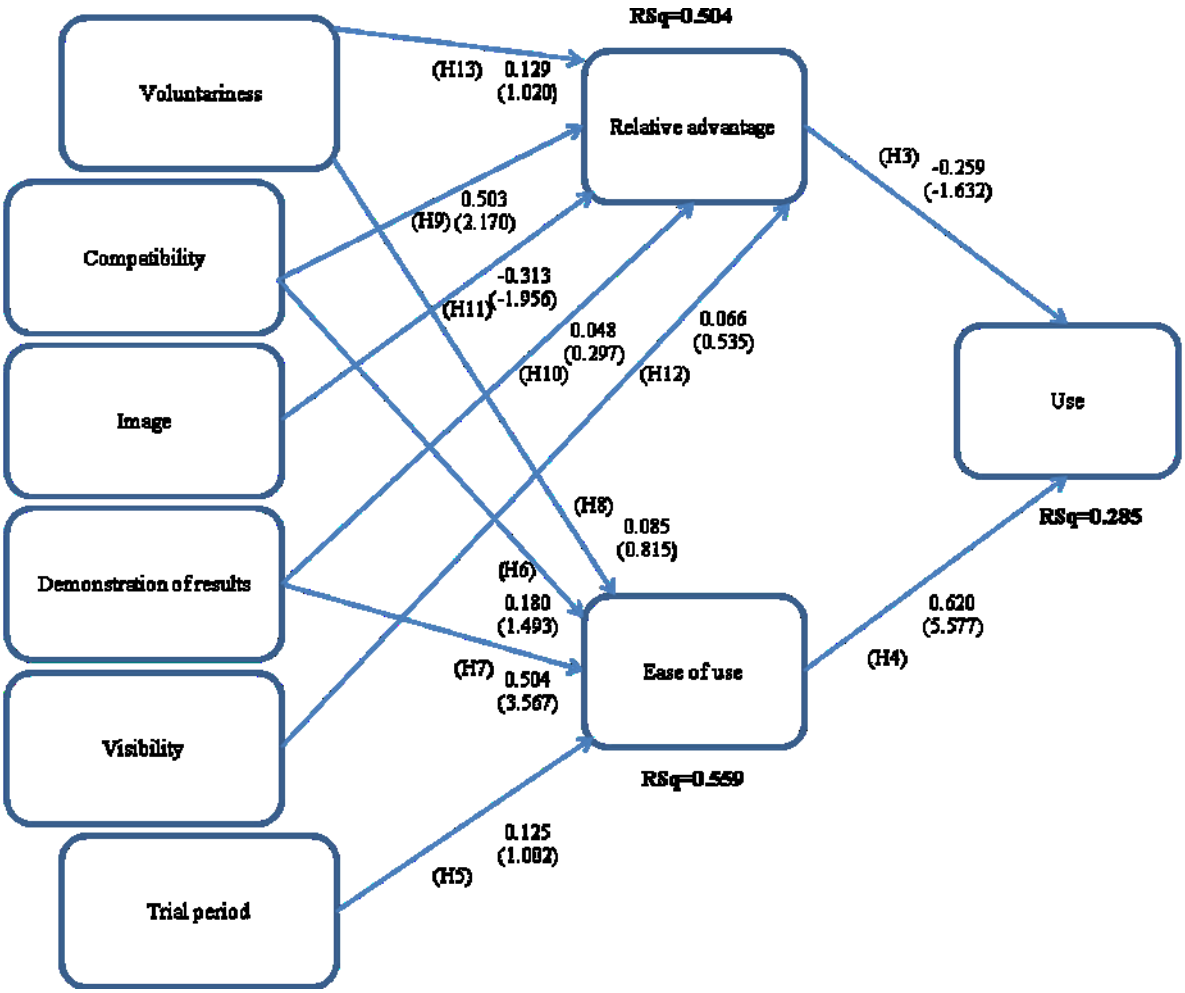

Figure 3: Hypothesis analysis (I)

Hypothesis	Construct relationships	β Coefficients	T-Student values	Significance level
H3	RA->USE	-0.2590	-1.6323	
H4	**EU->USE**	**0.6200**	**5.5773**	**Accepted for P< 0.001**
H5	TP->EU	0.1250	1.0018	
H6	C->EU	0.1800	1.4933	
H7	**DR->EU**	**0.5040**	**3.5666**	**Accepted for P< 0.01**
H8	VO->EU	0.0850	0.8153	
H9	**C->RA**	**0.5030**	**2.1700**	**Accepted for P< 0.05**
H10	DR->RA	0.0480	0.2966	
H11	I->RA	-0.3130	-1.9559	
H12	V->RA	0.0660	0.5351	
H13	VO->RA	0.1290	1.0199	

Table 14: β coefficient values and the T-Student values

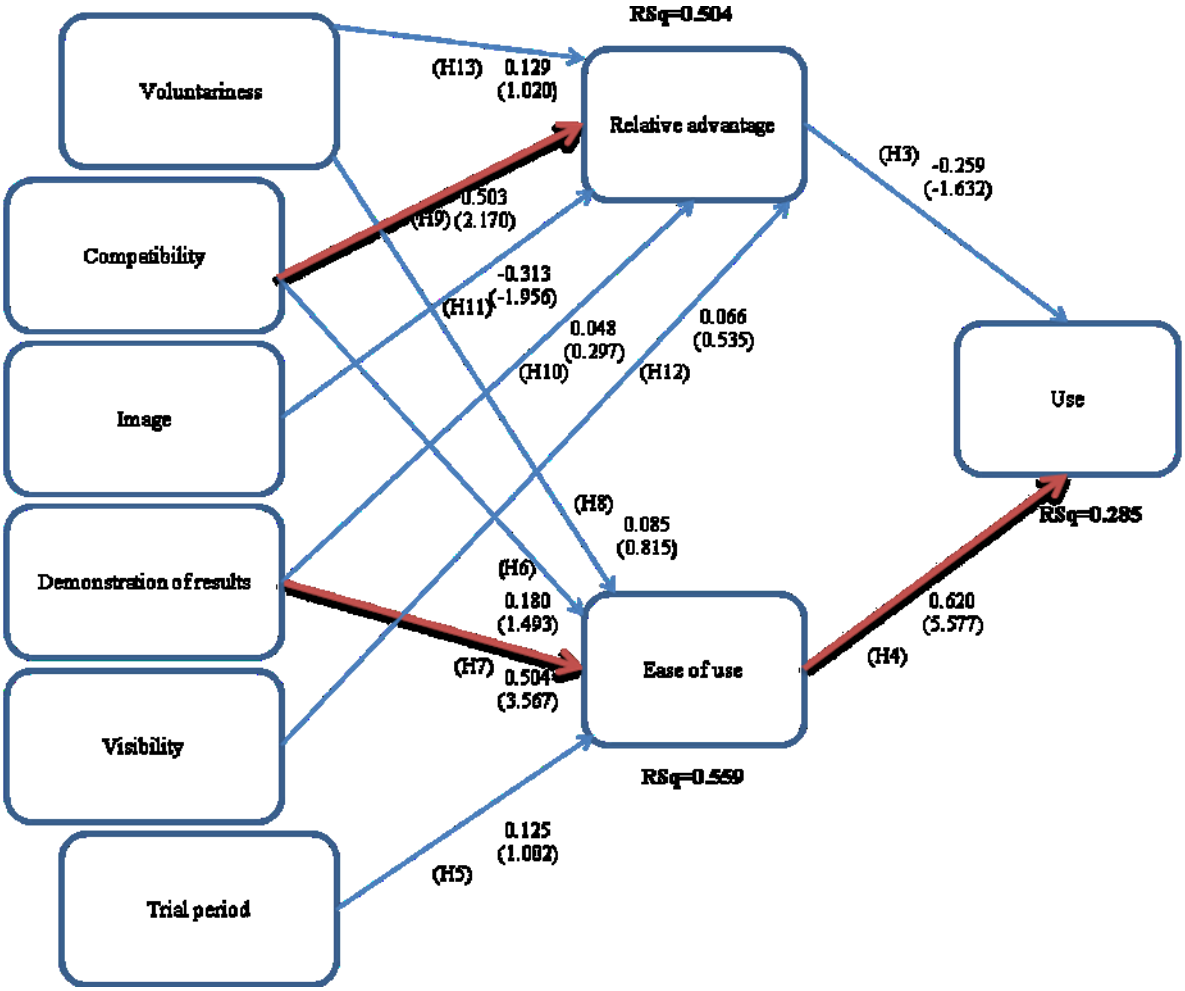

Figure 4: Hypothesis analysis (II)