Determinants of Cloud Accounting Adoption Intention: The T.O.E, D.O.I and T.A.M Models

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Abstract
Objective – Nowadays, Cloud Computing is a necessity and more than a trend for all organizations, given the sensitive nature of financial information. This paper aims to determine the factors that impact the adoption intention of Cloud Accounting.

Design/methodology – The approach adopted in this research is a quantitative method. It is based on a research model developed on the basis of three theoretical frameworks (TOE, DOI, and TAM) used to investigate the factors impacting the adoption intention of Cloud Accounting solutions by accounting professionals (with a total number of respondents of 96 and composed by chartered accountant, certified public accountant, and accountant).

Results – The results of this study show that some variables have an impact on the intention to adopt Cloud Accounting, such as the purpose of usage, motivation, remote reporting, and size of the firm, while other variables have no influence such as professional category and flexibility.

Limitation/Suggestion – The major contributions of this work are: (1) The combination of several theoretical frameworks; (2) The application in the field of organizational finance which is very important in terms of business and sensitivity, and finally the highlighting of the factors leading to the adoption of Cloud Accounting.

Keywords: Cloud Accounting, Technology Organization Environment, Innovation Diffusion, Technology Acceptance Model, Partial Least Squares.

1. Introduction

Bessemer Venture Partners, which specializes in venture capital management, highlighted cloud computing as the most exciting mega technology trend in 2021 that will impact the global GDP in the coming years (Deeter et al., 2021). In addition, this technology has also enabled the breakdown of work offices by promoting telecommuting and therefore sustainability and continuity of operations. Data and machine learning infrastructures have freed new heights, which constitute the revolution of industry 4.0 in all areas especially the management of information systems (Yoon, 2020). Sora highlighted the transformation that accounting has undergone in the technological era and specifically Cloud Computing. On the same path, Richardson and Yigitbasioglu discussed business intelligence and Big Data Analytics in accounting management (Rikhardsson & Yigitbasioglu, 2018).

The impact of the covid-19 is surely being felt in the current transformations of information systems management. Yet, the Cloud presents technological risks that can lead to bankruptcies in this period of pandemic (Amankwah-Amoah et al., 2020). It allows the collection and instant processing of voluminous and varied data. Finally, it can be used to generate efficient and relevant accounting information for better decision-making.

Therefore, research works on the intention of adopting Cloud Computing have increased in recent years (Ahn & Ahn, 2020). Many of them have implemented the Technology Organization Environment (TOE) conceptual framework, to study the adoption intention of Cloud-related to the TOE contexts. Moreover, to study the benefits of Cloud adoption other scientists use the Diffusion of Innovation Theory (DOI). The usefulness and ease of use of Cloud were evaluated according to the Technology
Acceptance Model (TAM) which also assesses the resistance to the change. In our study, we attempted to embrace a maximum of factors that can affect the intention of adoption, and hence to present a sufficient perspective and frame to describe these factors in further exploitation to enhance the use of cloud computing in financial industries and particularly in the accounting activities.

While the TAM is the widely used model in literature because of its reputation, maturity, and its concentration on the behavioral determinants, the TOE allows focusing more on the three components of the innovation, which are the innovation itself, the organization that constitutes the targeted incubator of the innovation and the environment that should be affected by the use of the innovation. Finally, the DOI is more concentrated on the utility, benefits, and advantages of the innovation.

In light of these conceptual frameworks, this research is conducted to raise the factors acting on the adoption intention of cloud accounting. Given the importance of finance function in the organization. This work targets the population of accounting professionals first because the domain of knowledge of accounting has undergone a lot of changes in the air of technology and computerization. Secondly because of the tendency of the internet of things, big data, and the relevant benefits that Cloud computing technologies offer to users. Finally, the strategies of dematerialization and virtualization of transactions like fiscal and legal strategies, adopted by the Moroccan government to encourage investments.

This research uses the TOE, DOI, and TAM theoretical frameworks to develop the research model which is used to identify 12 factors influencing the adoption of cloud accounting, created based on previous research and adapted for this study, which are: technologies used, age, organization size, professional category, stakeholders, remote reporting, degree of importance, the purpose of usage, flexibility, productivity, motivation, and interaction. The next section (section 2) presents the: (1) Cloud Computing and Cloud Accounting; (2) Cloud Accounting Adoption theoretical frameworks (TOE, DOI, and TAM). In section 3, the proposed research model is introduced, which presents different hypotheses and factors chosen for investigating the intention to adopt Cloud Accounting. Doing so, we describe the research method followed to validate the research hypotheses. Section 5 provides the results of data analysis and hypotheses testing. Finally, section 6 includes our discussions, practical and theoretical implications, some limits, and paths of research.

2. Literature Review, Theoretical Framework, and Hypotheses development

Cloud Computing

The National Institute of Standards and Technology (NIST) defines Cloud Computing as ‘a model for enabling ubiquitous, convenient, and on-demand access to a shared network of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and made available with minimal management of effort and interactions with the service provider’ (Tiers et al., 2013). According to this definition, Cloud Computing offers three service models: (1) The Software as a Service (SaaS) where we find the application part; (2) The Platform as a service (PaaS) which provides entire computing platforms; (3) The Infrastructure as a Service (IaaS) offering an entire computing infrastructure (Khanom, 2017).

The Cloud allows an arrangement of all computing resources in a single location with a vision of delegating tasks related to computing to a third party, such as maintenance, update, and configuration. It provides better exploitation of resources and their performance. Cloud Computing can be deployed in four ways: (1) Private Cloud where the infrastructure is managed and operated by a single organization; (2) Public Cloud where the infrastructure is intended to all public; (3) Community Cloud as an infrastructure that is shared and managed by a set of people or organizations; (4) Hybrid Cloud in which the infrastructure is composed of two or more infrastructures either private, community or public.
Cloud Computing is a very suitable solution for all organizations, which is due to a set of reasons and advantages (Christauskas & Miseviciene, 2012; Khanom, 2017) such as:

- Focus on your business.
- Reduce investment.
- Flexibility of the solution.
- Remote access.
- Employee efficiency.
- Business flexibility.

**Cloud Accounting**

The recent epidemic crisis of Covid-19, as well as the recent development of information technologies and the search for economic efficiency and timely availability of information, have contributed to changes in the design of information systems. These purposes have also allowed us to modify the management style of information systems and to improve the efficiency of traditional information technologies. Consequently, all these elements constitute the main determinants leading to a poor adaptation of information systems to the specificities of organizations' activities.

However, the small and medium-sized enterprises (SME) must imperatively align themselves and replace their technologies with new information technologies. Among these SME, we find those with financial character, as example the accounting firms and chartered accountants. This type of activity has also undergone great changes in the technological era, both the service delivery and the used solutions.

Cloud Computing is considered as the platform of Big Data technology, where both technologies promote and improve the capabilities of data collection, processing, storage, and management of varied and large data (LI & XU, 2018).

Cloud Computing and Big Data will surely increase the effectiveness and efficiency of accounting operations, with a significant impact on both document and report transmission circuits and the consumption of resources and the reliability of information and consequently the assurance of the true and fair view of organizations.

In relation to this progress and upheaval, recent research in accounting information systems has opted for the use of the term “Cloud Accounting”, as well as other related terms such as “E-accounting”, “Cloud-Accounting”, “Web-accounting” and “Real-time accounting” (Ionescu et al., 2014). Certainly, this technological disruption in accounting has a set of advantages (Muça & Rezarta, 2014) citing among them:

- Minimize costs.
- The ubiquity of accounting.
- Improved performance.
- Unlimited capacity to store, process and archive customer data.
- Absence of the upgrades cost and new versions of application.
- User-friendly.
- Share financial.
- Compliance with industry obligations.
- Try before you buy.

On the other hand, accounting on the cloud also has a set of disadvantages. In general, they are related to the inherent risks surrounding the technology itself in which we find:

- Fear of insecurity.
- Problems related to the Internet connection.
- Loss of control.
- Dependency.
Research on the pros and cons of adopting cloud-based accounting, particularly for small and medium-sized businesses, has increased in recent years. The global shift to telecommuting in the era of the Covid-19 pandemic has pushed the adoption of cloud solutions in most organizations, regardless of whether they are public or private.

Christauskas & Miseviciene (2012) have conducted a research on accounting software for small and medium-sized enterprises in Lithuania by searching for new trends in accounting software. They tried to enumerate the advantages and dangers of its new technologies on the accounting activity. By analyzing the current state of accounting software, they found that successful economic development is highly dependent on the speed of deployment of cloud-based solutions.

In the study conducted by Ionescu et al. (2014) the authors tried to compare the cost of accounting operations performed in classical and cloud-based information systems using the ratio of return on investment (ROI) for monthly operations, which are seven and nine operations, respectively for annual accounting works.

Pacurari & Nechita (2013) have presented a set of considerations to be taken into account in accounting on the Cloud, such as online communication, centralization of data, consultation at any time and any place, better control of business activities, increased efficiency, and effectiveness. Tarmidi et al. (2014) have attempted to find out the factors that guide the decision of adopting or not Cloud Computing on a population of 329 accounting professionals in Malaysia. They found that only a third of them know or have heard of Cloud Computing. On the contrary, the rest said that they had no need for this technology.

Muça & Rezarta (2014) have identified the important factors that affect the quality of data in accounting information systems and reflect the degree of recognition and scope of Cloud Computing in Albania. They found that three-quarters of the interviewers have knowledge about this technology even though it is relatively new in the field of accounting. In their research, Dimitriu & Matei (2014) have found that Cloud Accounting allows the transformation of financial statements from paper form to real-time financial dashboards. The improvement of the relationship with clients as a result of enhancing the collaboration and communication via remote access and the availability of real-time and up-to-date information through a simple Internet connection.

Khanom (2017) has also presented the importance of cloud computing in accounting such as real-time updating of financial information, accessibility, availability, and security of financial information as well as automatic data backup and recovery. The work of Huttunen et al. (2019) has raised the importance of cloud computing in terms of data collection and storage and the flexibility of this solution. They also concluded that US GAAP and international IFRS accounting standards need to be updated to keep up with technical progress as well as the way of analysis, reporting, and valuation.

Faitusa et al. (2019) have conducted research on accounting outsourcing in the Baltic region (Latvia, Lithuania, and Estonia), where they have stated that this trend allows high productivity and maximum quality for the client. In their paper, Faituša et al., (2020) have identified eight factors that will impact the accounting practice in the next five years. Marsintauli et al. (2021) have questioned the infrastructure and support environment that allows the optimal operation of Cloud Computing, the security standards that should be considered by the developers of Cloud Computing solutions that must meet the needs of data security.

Cloud Accounting Adoption

Several theoretical frameworks have been developed to measure the intention to adopt or use information technologies by organizations. Among the most popular theories in this field are the Technology Acceptance Model (TAM), the Technology Or-
ganization and Environment (TOE) model, and the Diffusion of Innovation (DOI) theory.

The theory of diffusion of innovation

Created by Rogers, (1983) in his book ‘the diffusion of innovations, he defined innovation as ‘an idea, practice, or object that is perceived as new by an individual or other unit of adoption. Rogers proposes five determinants that can affect the intention to adopt information technologies. These five determinants are believed to play a very important role in helping organizations to adopt new information technologies (Ahn & Ahn, 2020). The character of relative advantage is the most important determinant among these five ones in revealing the adoption of information technology in innovation research and its determinants (L. Tornatzky & Klein, 1982). It is the degree to which a technological factor is perceived as a source of great benefits to organizations (Bharadwaj & Lal, 2012).

Bharadwaj & Lal (2012) have used the relative advantage to design their model and answer research questions in which they measured the expected benefits of cloud computing-backed services. Including speed of business communication, effective coordination between organizations, better communication with the customer, and fluidity of access to market information, the authors questioned the organization’s flexibility of cloud computing adopter and the factors leading to the adoption of cloud computing solutions.

Oliveira et al. (2014) have adopted cost minimization and security concerns as antecedent variables of the relative advantage of Cloud Computing in the production and service sector. These two variables attempt to determine whether Cloud Computing is relatively advantageous when it allows cost minimization and less advantageous when there are security concerns.

While Ahn & Ahn, (2020) have stated in their article that most organizations believe that cloud-based ERP saves time and money, promotes communication, and leads to more effective interaction between new applications, the authors have tried to determine the factors affecting the adoption intention of cloud-based ERP.

The technology acceptance model

The technology acceptance model is one of the widely used models for understanding information technology adoption intention and usage process (Gangwar et al., 2015). It tries to explain the majority of the variance in behavior related to the adoption intention of using new technologies. It predicts the user’s acceptance of a Cloud solution and its use in the work. It also explains the determinants of acceptance of the use of a set of information technologies (Davis, 1986). The model is composed of two categories of determinants: (1) Perceived Usefulness (PU) which acts on the attitude towards the use and behavioral intention of accepting the technology and (2) Perceived Ease of Use (PEOU) measures the ease of use of the technology vis-à-vis the technology itself.

Llorén et al. (2005) have considered perceived usefulness as the degree to which a person believes that using a particular system increases their performance. Perceived usefulness according to the authors of a web-based service can be judged on the basis of increased performance, productivity, work efficiency, and usefulness of Cloud services. While perceived ease of use refers to the degree to which a person believes that using a particular system frees up effort (Davis, 1986). According to Venkatesh & Davis (2000), the components related to controlling, intrinsic motivation, and emotions form the foundation of perceived ease of use.

The theory of TOE (Technology, Organization, and Environment)

Tornatzky & Rideout (2017) have developed the TOE conceptual framework to explore technology adoption. The model allows the examination of the three catego-
ries of factors that impact the adoption of new technologies (Ahn & Ahn, 2020). TOE is widely disseminated in the scientific community and research with the objective of Cloud Computing adoption (Sohaib & Naderpour, 2017). According to Ahn & Ahn (2020) the TOE is used to evaluate the adoption of cloud-based ERP where a set of criteria, to address the three factors, such as competitive pressure, top management support, business willingness, company size, technology readiness, and technical barriers that can all exert a significant impact on the adoption of cloud-based ERP. As well as other factors like information and communication technology skills, technology infrastructure, financial gain, system quality, industry pressure, information quality. Finally, government support has either a positive or negative impact on the adoption of cloud-based ERP.

Oliveira et al. (2014) have used technology readiness and top management support as factors for measuring technology context. Organization size as factors identifying organizational context. For environmental context, they use competitive pressure and regulatory support as factors.

However, Kim et al. (2017) have chosen competitiveness, supplier support, and government support as determinants to analyze the environment. The ability to use information technology, excess resources, and top management support to identify the organizational context. Finally, quality improvement, cost advantage, and business process improvement, to measure organizational benefits. To assess organizational risks, they have adopted performance, safety, and economic risks as determinants. The authors use the TOE model to validate the determinants of SaaS adoption in small businesses.

Based on the previous discussions, the model adopted in this research is presented in Figure 1. It was developed to examine empirically the impact of the relative advantage, TOE and TAM on the adoption intention of Cloud Accounting in SMEs specialized in the accounting business.

**Theoretical Framework and Hypotheses development**

Based on the previous discussions, the model adopted in this research is presented in Figure 1. It was developed to examine empirically the impact of the relative advantage, TOE and TAM on the adoption intention of Cloud Accounting in SMEs specialized in the accounting business.

**DOI: The Relative Advantage**

Rogers (1983, p.77) defines relative advantage as ‘the degree to which an innovation is perceived as better than the idea it replaces’. This character is seen as the most sought in innovation of information technologies in organizations (L. Tornatzky & Klein, 1982). The considerations that are taken by most firms adopting information technology are cost minimization, business needs matching, productivity enhancement, flexibility, improved and faster communication with their customers. Research

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**Figure 1. Research Model**
has found that relative advantage has a significant impact on the adoption of cloud-based ERP (Ahn & Ahn, 2020). Others have confirmed the relative advantage hypothesis in adopting cloud technology via two factors: security concerns and cost minimization (Oliveira et al., 2014). As well as, to validate the hypotheses of the impact related to adopting Cloud Accounting. The flexibility of the organization, the relative advantage are measured by three criteria: service availability, accessibility, and cost (Bharadwaj & Lal, 2012). Based on all these results the hypotheses of this research are:

Hypothesis 1a (H1a): the degree of importance of information technology will positively influence the relative advantage of Cloud Accounting adoption intention.

Hypothesis 1b (H1b): the purpose of using information technology will positively influence the relative advantage of Cloud Accounting adoption intention.

**Technology organization environment**

The TOE model measures the impact or the influence of information technology adoption according to three contexts.

**The technological context**

The technological context according to Ahn & Ahn (2020) includes the skills related to the use of technology by employees. However, cloud computing provides a challenging environment for employees and offers a fertile ground for technological innovation. They found that technology skills do not hold a significant influence on the intention to use cloud-based ERP. Unlike Kim et al. (2017) who adopted three criteria that address the technology context, namely performance risk, security risk, which have a significant influence on the intention to adopt cloud computing and specifically SaaS, as opposed to economic risk which has no impact. Oliveira et al. (2014) have examined the technological context through the organization’s readiness to host Cloud Computing which exerts a significant impact on Cloud Computing adoption. Therefore, this research focuses on the set of skills and technological tools used in the accounting profession. Hence the following hypothesis:

Hypothesis 2 (H2): The skills and technologies used have a positive impact on the intention to adopt Cloud Accounting.

**The organizational context**

Top management support, culture, size, and age are determining characteristics in cloud computing adoption. This conclusion is confirmed by Ahn & Ahn (2020) who used organizational culture as an indicator of organizational context that has a significant influence on the adoption intention of cloud-based ERP. Kim et al. (2017) have used top management support, information technology capabilities available to the organization, and resource availability as criteria for measuring this intention. The authors have found that none of these criteria has a positive influence on cloud computing adoption intention. On the other hand, Oliveira et al. (2014) were able to confirm the significant influence on the adoption intention of Cloud Computing via two criteria related to the technological context which are the size of the organization and the support of the top management. In this study, age, size and professional category are considered to confirm the hypotheses related to the organizational context namely:

Hypothesis 3a (H3a): The age of the interfering will positively impact the adoption of Cloud Accounting.

Hypothesis 3b (H3b): Organization size will positively impact Cloud Accounting adoption.

Hypothesis 4c (H4c): The professional category of the organization will positively impact Cloud Accounting adoption.
The environmental context

According to Ahn & Ahn (2020), the environmental context can be divided into two categories: the competitive environment and the regulatory environment where the support of the last one is an important factor for innovation adoption. Previous studies have found that regulations and laws are considered critical factors that can affect the adoption of innovative technologies such as Cloud Computing. Other researchers believe that organizations are willing to adopt new technologies if the government has a clear obligation towards new technologies. Ahn & Ahn (2020) have confirmed that the regulatory environment has a significant influence on the adoption intention of Cloud Computing. Kim et al. (2017) added vendor support which includes technical support, security, upgrade and installation to these two factors to ultimately conclude that the three factors do not have a significant influence on the adoption of Cloud Computing (SaaS) solutions in small and medium-sized enterprises.

Similarly, this conclusion was confirmed by Oliveira et al. (2014) who used the first two factors to demonstrate that there is no significant influence on the intention to adopt the Cloud. Based on this discussion the following two hypotheses are raised:

Hypothesis 4a (H4a): Stakeholders have a positive influence on the intention to adopt Cloud Accounting.

Hypothesis 4b (H4b): Remote reporting has a positive influence on Cloud Accounting adoption intention.

The technology acceptance model

The TAM model (Davis, 1986) states that the behavior of individuals regarding the intention to use of a system is determined by two factors: (1) The perceived usefulness (PU) which postulates that a person believes that the use of a system allows increasing its performance; (2) The perceived ease of use (PEOU) which states that a person believes that the use of a system allows him to save effort.

Perceived usefulness

Bharadwaj & Lal (2012) have admitted that the PU for a cloud-based service can be judged on the basis of increased performance, productivity, work efficiency and service utility. Therefore, organizations which perceive that Cloud Computing will enable them to benefit from all these advantages will agree to adopt this solution as far as this research is concerned the PU validated by the flexibility and perceived productivity for that:

Hypothesis 5a (H5a): Flexibility has a positive impact on the intention to adopt Cloud Accounting.

Hypothesis 5b (H5b): Productivity has a positive impact on cloud accounting adoption intent.

Perceived ease of use

Several researches have pointed out the evidence on the significant effects of PEOU and the intention to use it directly or indirectly. According to Venkatesh & Davis (2000), PEOU is confirmed by factors related to intrinsic motivations and emotions in relation to system use. Bharadwaj & Lal (2012) have proposed that PEOU can be validated by interaction which is the ease and the understandability of the Cloud service, less mental effort in using the solution, and the ability to perform tasks according to the organization’s guidelines.

In this research the determinant of motivation and the determinant of interaction are considered to construct the following hypotheses:

Hypothesis 6a (H6a): Motivation will positively influence Cloud Accounting adoption intention.

Hypothesis 6b (H6b): Interaction will positively influence the adoption intention of Cloud Accounting.
3. Research Method

Measuring Instrument

In order to validate the research hypotheses, a survey was conducted among accounting professionals. For this purpose, a questionnaire was developed on the basis of the research already presented. In order to reach the reliability of the questions asked, a set of questions was either canceled or modified to correspond to the Moroccan context. And for scoring the questions, a five-point Likert scale was used in the majority of the questions (1: Strongly disagree, 2: Disagree, 3: No opinion, 4: Agree, 5: Strongly agree). Nevertheless, the questionnaire was presented for opinion to a chartered accountant and two researchers for review and validation. Finally, their opinions were taken into account in the final version of the questionnaire.

Data collection

The research data is collected from actors in the Moroccan accounting profession. The population was contacted by emails collected from the websites of the association or incubator organization of each category (chartered accountants 315 emails, certified public accountants 245 emails, and 29 emails from accountants).

The questionnaire is in MS Word format and is administered by the open-source software LimeSurvey via an online website. The questionnaire can only be completed once due to the rigorous IP addressing administration by the LimeSurvey data collection system.

### Table 1.
Description of the sample

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accountant</td>
<td>14</td>
<td>41.67%</td>
</tr>
<tr>
<td>Chartered Accountant</td>
<td>42</td>
<td>43.75%</td>
</tr>
<tr>
<td>Certified public Accountant</td>
<td>40</td>
<td>14.58%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>96</td>
<td>100%</td>
</tr>
</tbody>
</table>

### Table 2.
Descriptive statistics for latent variables age, category, size, and technology used

<table>
<thead>
<tr>
<th>Latent variable (constructs)</th>
<th>Question</th>
<th>Number</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>A1</td>
<td>9</td>
<td>9.38%</td>
</tr>
<tr>
<td></td>
<td>A2</td>
<td>56</td>
<td>58.33%</td>
</tr>
<tr>
<td></td>
<td>A3</td>
<td>31</td>
<td>32.29%</td>
</tr>
<tr>
<td>Professional Category</td>
<td>C1</td>
<td>40</td>
<td>41.67%</td>
</tr>
<tr>
<td></td>
<td>C2</td>
<td>42</td>
<td>43.75%</td>
</tr>
<tr>
<td></td>
<td>C3</td>
<td>14</td>
<td>14.58%</td>
</tr>
<tr>
<td>Size</td>
<td>TL1</td>
<td>60</td>
<td>69.77%</td>
</tr>
<tr>
<td></td>
<td>TL2</td>
<td>22</td>
<td>25.58%</td>
</tr>
<tr>
<td></td>
<td>TL3</td>
<td>4</td>
<td>4.65%</td>
</tr>
<tr>
<td>Technology used</td>
<td>tec1</td>
<td>87</td>
<td>35.80%</td>
</tr>
<tr>
<td></td>
<td>tec2</td>
<td>83</td>
<td>34.16%</td>
</tr>
<tr>
<td></td>
<td>tec3</td>
<td>28</td>
<td>11.52%</td>
</tr>
<tr>
<td></td>
<td>tec4</td>
<td>45</td>
<td>18.52%</td>
</tr>
</tbody>
</table>
To analyze the data and test the hypotheses, the technique of structural equation modeling using partial least squares (PLS) was chosen. The choice of PLS is argued by the sample size (Chin & Newsted, 1999) giving that PLS allows a consistent estimates of the parameters for a small sample size (Kim et al., 2017). This research has as objective the revelation of the intention of adoption of Cloud Accounting for the first time among accounting professionals. The calculations are performed by the smartPLS version 3 software, which is a solution that implements a Partial Least Squares algorithm used in regression analysis for structured equations.

**Evaluation of the measurement model**

To test the quality of the questionnaire in terms of validity and reliability, the internal consistency, convergent and discriminant validity, several tests were carried out. Table 2 presents the average of the measures of the latent (or construct) variables age, category, size and technology used, while Table 3 presents the average and standard deviation of the other measures of the questionnaires.

<table>
<thead>
<tr>
<th>Latent variable (constructs)</th>
<th>Question</th>
<th>Average</th>
<th>Standard error (Pearson)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexibility</td>
<td>F1</td>
<td>3.344</td>
<td>1.383</td>
</tr>
<tr>
<td></td>
<td>F2</td>
<td>3.240</td>
<td>1.427</td>
</tr>
<tr>
<td></td>
<td>F3</td>
<td>3.146</td>
<td>1.429</td>
</tr>
<tr>
<td>Productivity</td>
<td>P1</td>
<td>3.052</td>
<td>1.158</td>
</tr>
<tr>
<td></td>
<td>P2</td>
<td>2.417</td>
<td>1.133</td>
</tr>
<tr>
<td></td>
<td>P3</td>
<td>3.010</td>
<td>1.186</td>
</tr>
<tr>
<td>Interaction</td>
<td>COM1</td>
<td>3.281</td>
<td>1.007</td>
</tr>
<tr>
<td></td>
<td>COM2</td>
<td>3.135</td>
<td>1.124</td>
</tr>
<tr>
<td></td>
<td>COM3</td>
<td>3.240</td>
<td>1.161</td>
</tr>
<tr>
<td>Purpose of usage</td>
<td>TECBUT1</td>
<td>3.354</td>
<td>1.090</td>
</tr>
<tr>
<td></td>
<td>TECBUT2</td>
<td>3.052</td>
<td>1.158</td>
</tr>
<tr>
<td></td>
<td>TECBUT3</td>
<td>3.302</td>
<td>1.119</td>
</tr>
<tr>
<td>Motivation</td>
<td>TecAllow1</td>
<td>2.677</td>
<td>1.410</td>
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<tr>
<td></td>
<td>TecAllow2</td>
<td>2.260</td>
<td>1.431</td>
</tr>
<tr>
<td></td>
<td>TecAllow3</td>
<td>2.135</td>
<td>1.288</td>
</tr>
<tr>
<td>Level of importance</td>
<td>CRAD1</td>
<td>3.156</td>
<td>1.202</td>
</tr>
<tr>
<td></td>
<td>CRAD2</td>
<td>3.563</td>
<td>1.069</td>
</tr>
<tr>
<td></td>
<td>CRAD3</td>
<td>3.177</td>
<td>1.199</td>
</tr>
<tr>
<td>Remote reporting</td>
<td>DIFTEL1</td>
<td>2.771</td>
<td>1.334</td>
</tr>
<tr>
<td></td>
<td>DIFTEL2</td>
<td>2.531</td>
<td>1.274</td>
</tr>
<tr>
<td></td>
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<td>2.833</td>
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<tr>
<td></td>
<td>TIERFAVOR2</td>
<td>2.958</td>
<td>1.207</td>
</tr>
</tbody>
</table>

Table 3. Descriptive statistics for the remaining latent variables
While the validity and reliability of the research model are confirmed, the structural path analysis must be done in the second step to describe the dependencies between latent variables and the manifest variables, Cloud Accounting adoption intention. This assessment is done through multiple regression analysis to determine the existing relationship between these two determinants. Table 5 and Figure 2 present a summary of the regression calculations done with smart PLS.
These results describe the relationship between the degree of importance, which is related to the relative advantage, and the intention to adopt Cloud Accounting. The hypothesis H1a was confirmed with a beta of 0.783, T-value of 4.610 and P-value of 0.000. Similarly, hypothesis H1b was confirmed with a beta of 0.470, T-value of 2.660 and P-value of 0.008, and therefore both are adopted with a very important significance.
Regarding the TOE, the H2 hypothesis measuring the technological context was validated with a beta of 0.904, T-value of 2109.760 and P-value of 0.000. The organizational context constructs have for hypothesis H3a which was confirmed and adopted with a beta of 0.47, T-value of 2.250 and P-value of 0.025. For hypothesis H3b, it was confirmed and adopted with a beta of 0.415, T-value of 5.430 and P-value of 0.000: it is thus significantly very important. On the other hand, the hypothesis H3c was rejected with a beta of -0.415, T-value of 1.150 and P-value of 0.240. Finally, the hypotheses related to the environmental context constructs have for H4a, which was confirmed with a beta of 0.665, T-value of 2.880 and P-value of 0.000, and H4b, which was confirmed with a beta of 0.664, T-value of 3.690 and P-value of 0.000, and therefore both of them are adopted with a very significant meaning.

The hypotheses of the determinants of PU are respectively hypothesis H5a which was rejected with a beta of 0.304, a T-value of 1.210 and a P-value of 0.227, on the other hand H5b was confirmed and adopted with very important significance whose beta of 0.925, T-value of 3.350 and P-value of 0.000. The component of TAM, PEOU is validated by the two hypotheses H6a and H6b, both of which are confirmed and adopted with significant impact on the basis of a beta of 0.789, a T-value of 1.840 and a P-value of 0.066, and beta of 0.483, T-value of 3.030 and P-value of 0.003, respectively.

Discussion of the results

In contrast to other previous research, the DOI determinant Relative Advantage was confirmed by Gangwar et al. (2015) as an important variable affecting Cloud computing adoption. This is in line with our findings, which are also consistent with Premarathne et al. (2021) results related to the Relative advantage and TOE factors. These authors have examined the impact of some factors like IT infrastructure, Compatibility Complexity, Perceived value, Top management support, Perceived cost, and Competitive pressure, on the adoption of cloud-based accounting in Sri Lanka. However, it should be noted that the study conducted by Premarathne et al.( 2021) doesn’t take into account the professional category factor’s, which is rejected in our study (hypothesis H3c). Moreover, the impact of the factors related to the TOE framework was also examined in the Indonesian MSMEs for Cloud Accounting adoption intention, as mentioned in the paper of Hamundu et al. (2020) where they are performed it using a qualitative methodology. Furthermore, the TOE framework was adopted by Eldalabeh et al. (2021) that attempt to evaluate which factors affect the Cloud Accounting adoption in financial firms in Jordan. They found that Organizational Competency factor’s has a significant impact on Cloud Accounting adoption. This is consistent with our finding related to hypothesis 2. In light of the TAM model, Eldalabeh et al. (2021) found that the two components of TAM, Perceived usefulness and Perceived ease of use, have a significant impact on intention of Cloud Computing use. Her, it is important to notice that the factors used in their work are based on DeLone and McLean model to examine the TAM model, and all factors are supporting the actual use of Cloud Computing. In this study, we found that all factors related to the TAM model, except flexibility, have a significant impact on the Cloud Accounting adoption intention by accounting professionals.

In the light of this research, firstly, the purpose of usage and the degree of importance of Cloud Accounting are identified as very important factors, which is in line with the postulate of the Diffusion of Innovation theory. Regarding the character of the relative advantage that allows, on one hand, the organization to increase its performance and thus minimize costs and improve its operational process in terms of decision-making time and alleviating work stress, on the other hand, Cloud Accounting providers can work on cost control, functionality, information flow and exchange, and flexibility of their solution.

Secondly, according to the technological context, Cloud Accounting is a recent concept, which makes its adoption intention quite fearful. For this purpose, organiza-
tions need to popularize the use of new technologies, including Industry 4.0, and support them in order to prepare for easy migration to the Cloud Accounting solution. From another point of view, Cloud Accounting solution providers need to demonstrate the feasibility of this solution by showing its adaptation to the organizations’ processes and by offering sufficient, guided and real trial periods by developing specific and adapted scenarios to show the usefulness, suitability, and stability of its solutions. From an organizational point of view, Cloud Accounting solutions must take into consideration the different characteristics of organizations (culture, age, size...) by creating specific solution profiles and proposing configurations appropriate to each organization. Finally, depending on the environmental context, this study has shown that stakeholders is a factor that has a significant impact on the intention to adopt Cloud Accounting, owing to the blatant use of social networks and smartphones and mobile technologies such as tablets and laptops. However, in order to keep up with these advances, accounting professional organizations need to exploit the benefits of Cloud Accounting in terms of the fluidity and diversity of communication channels that use the Internet. The regulation has been involved in the computerization of the process of remote reporting of financial statements and all that is related to the regulation and taxation. Citing as an example, the platform SIMPL aimed at the dematerialization of procedures for tax reporting and payment. This presents opportunities for accounting professionals to support their offers of Cloud Accounting solutions that allow the alleviation of their work tasks, such as the remote declaration, which is confirmed by this research as a factor of adoption of Cloud Accounting. In addition, improving other tax and regulatory formalities should be implemented or considered as a project of public administration in the future. From another point of view, regulations need to be improved and updated to include and regulate the use of Cloud Computing and therefore Cloud Accounting.

Thirdly, Cloud Accounting is seen as a factor acting on the improvement of the productivity of accounting organizations as it promotes agile collaboration, real-time communication and saving time and money. The Cloud Accounting solution providers need to invest more in the flexibility of the solutions not only for the direct users of their Cloud Accounting solutions but also for the end customers of the accounting organizations, to convince them of the usefulness and the adequacy of the Cloud Accounting solutions, with their expectations, via the customization, the user-friendliness and the adaptation of the generated reports and the implementation of interactive user guides and real-time demonstrations. In addition, it is necessary to motivate and aware the accounting professionals for the important use of Cloud Accounting solutions, by explaining and highlighting its benefits and offering support up to expectations, at least the availability and cost.

Theoretical implication

The academic implications met by this research are, firstly, the use of theories that are very recognized and popular in the scientific community that serve to identify the factors exerting an impact on the adoption of Cloud Accounting. Doing so, a theoretical model was designed to address the factors influencing the adoption of Cloud Accounting, implement and analyze them empirically. DOI, TOE, and TAM are used as a conceptual framework in several researches, either isolated or merged, to analyze the adoption intention of Cloud Accounting. This research analyzed, from a global perspective, the adoption of Cloud Accounting via the TOE, where the technology used is considered as a determinant of Technology, age, size, and occupational category as a determinant of Organization, and stakeholders and remote reporting as determinants of Environment, then, the DOI, where the relative advantage was measured by the variable’s degree of importance and purpose of usage. Finally, the TAM is evaluated according to the perceived utility component (PU) via the two variables flexibility and productivity, and according to the perceived ease of use (PEOU) the variables motivation and interaction.
This combination of conceptual frameworks was chosen to cover the maximum number of aspects related to the Cloud Accounting technology, characterized by its novelty and manifesting an innovation that is treated by the DOI and the TOE. As well as the postulate of resistance to change, which has been revealed by several research and studies, and treated according to the TAM framework, this is the second consideration of this research. And as a third theoretical implication, this research has been conducted on a population of actors of the accounting professions which implies the need for all these actors to express their opinions towards this emerging technology of Cloud Accounting.

**Practical implications**

The practical implications of this research are for accounting organizations, government, and thirdly, for Cloud Accounting solution providers. First, accounting organizations must ensure the sustainability and continuity of their operations, particularly in the present circumstances of Covid-19, as well as the financial nature of their work, which requires regular consultation with decision-makers. For this purpose, variables like professional category, age, and size of the organization, motivation, and interaction are used to highlight the factors of success of Cloud Accounting adoption.

Secondly, even if the current circumstances require such a migration, the role of public administrations and governments is paramount in the intention of adoption of new technologies by organizations. For this useful purpose, the factors of stakeholders and remote reporting are evaluated to raise the importance of public administration, which must in turn, ensure the production of regulations and laws regarding this technology such as the protection of data, computerized exchanges, and the favoring of the delegation of work to a third party.

Finally, this research provides cloud solution providers with the ingredients for success in their marketing and sales strategies for their cloud solutions, by highlighting the benefits of this technology, its perceived usefulness and ease of use.

Therefore, this research has highlighted the factors that play a decisive role in the adoption of Cloud Accounting by showing those that are related to the studied organizations and their environments and the technology itself.

**5. Conclusions**

This research was aimed to examine the adoption intention of Cloud Accounting by accounting professionals in Morocco using DOI, TOE, and TAM as a conceptual framework. The present research has tried to combine the two approaches by attempting to frame the topic of Cloud Accounting adoption with the models of technology perception mentioned above. To the best of our knowledge, this is the first empirical research that has been done in this way in a fairly new and trending topic in these days of the Covid-19 pandemic. The results of this empirical study show that the purpose of use, the degree of importance, productivity, size, technology used, remote reporting, and stakeholders possess a highly significant influence (P<0.01) on the intention to adopt Cloud Accounting. While the two latent variables, age, and motivation, have a significant influence of (P<0.05) and (p<0.10), respectively on the intention to adopt Cloud Accounting. Unlike professional category and flexibility which do not possess significant influence (P>0.10) on the adoption intention of Cloud Accounting. Despite the fact that flexibility is considered a very important criterion in determining the adoption intention of Cloud Computing, the results of this empirical research showed that it is not statistically significant. The same is true for the organizational context where the occupational category was statistically rejected even though it is validated by other researchers as a determinant of Cloud Computing adoption. It is clear that accounting professionals need to leverage more efforts to align themselves with technological progress in order to benefit from it.
Despite this, it has a set of limitations: Firstly, although it was able to merge several theoretical frameworks (TOE, DOI, TAM), it did not implement several other factors (Ahn & Ahn, 2020) relating to either the contexts validated by TOE, or the determinants researched by DOI or variables relating to both components of TAM and consequently, the need to include more factors in future research. Secondly is related to the experimentation limited to the Moroccan context, and on the basis of the literature review, the factors adopted and confirmed by this research could be rejected by others that are related to other contexts. Consequently, the comparison between the different contexts will be considered as a necessity in our future research. The crisis period presents a challenge for the generalization of these results, which is another limitation, as the telecommuting imposed by the Covid-19 pandemic, surely affected the results of this research. Therefore, the analysis of the impact of Covid-19 on the adoption intention of Cloud Accounting presents a path for future investigations. In addition, Cloud Accounting and Big Data present a set of research paths, including data analytics, via questions around data analytics techniques, and the exploitation of financial data, which will be the topics for our future research.

References


