How to Cite:
Chergui, Y., & Salem, A. (2024). Evaluating the preparedness of Algerian accountants for cloud accounting adoption: An analytical assessment of key challenges and opportunities. *International Journal of Economic Perspectives*, *18*(11), 2122–2140. Retrieved from https://ijeponline.org/index.php/journal/article/view/706

Evaluating the preparedness of Algerian accountants for cloud accounting adoption: An analytical assessment of key challenges and opportunities

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***Abstract*---**This study seeks to evaluate the preparedness of accounting professionals in Algeria to operate within cloud accounting environments by analyzing their comprehension of cloud accounting fundamentals, assessing their qualifications for utilizing cloud-based software, and identifying potential obstacles to the adoption of these contemporary technologies. The research employed a deductive methodology based on an examination of existing studies. We disseminated an internet survey to a sample of 104 professionals in the Algerian business sector. The findings revealed a commendable awareness among Algerian accountants concerning the fundamentals of cloud accounting, as well as a satisfactory qualification level that equips them to use cloud software proficiently. Additionally, the study identified various challenges and obstacles hindering the implementation of cloud accounting in Algeria.

***Keywords*---**Cloud Accounting, Cloud Computing, E-Accounting, Accounting profession, Algerian Accountants.

Introduction

The pervasive utilisation of the Internet and the advancement of increasingly sophisticated technology are propelling substantial transformations in the accounting sector. The future of accounting is being significantly influenced by

Corresponding author: *XXXX, Email: xxxx@gmail.com*
Submitted: 27 September 2024, Revised: 18 October 2024, Accepted: 09 November 2024

many technologies such as digital content distribution platforms, cloud computing services, and big data analytics.(Bandeira et al., 2023) .Cloud computing is a concept that involves a large network of remote computers that provide on-demand processing power. This has fundamentally altered the operational dynamics of organisations, especially within the accounting sector. Accountants may enhance their productivity and efficiency by leveraging cloud-based solutions. This allows them to conveniently interact with customers and effortlessly access and analyse financial data from any location and at any time. The process of making decisions has improved in terms of being prompt, precise, and effective.(Koleva & Angelova, 2023). Xero, a leading provider of cloud accounting software, conducted a survey that yielded significant findings regarding the success of businesses that have adopted cloud accounting services. According to the poll, these organisations were able to expand their customer base more than five times faster compared to their counterparts who have not adopted this technology. In addition, the survey revealed that organisations that exclusively depended on cloud accounting services experienced a 15% annual growth in revenue.(Sobhan, 2019). According to a study conducted by Study Report360 (2020), the global market for cloud accounting was valued at $2.98 billion in 2019. The report predicts that the market value of this industry will expand at a compound yearly growth rate of 6.2% and reach $4.57 billion by the end of 2026.(*Global Cloud Accounting Software Market – Industry Reports*, n.d.)

The adoption of cloud-based services is yielding advantages for countries globally. Statista (2022) said that the global market for cloud applications was valued at $133.6 billion in 2021 and is projected to reach $168.6 billion by 2025. The market for cloud application software is expected to experience a compound annual growth rate of 4.8%. The substantial surge in the utilisation of cloud services underscores the crucial importance of these technologies in the contemporary society.(*Cloud Applications Market Size Worldwide 2025 | Statista*, n.d.). From 2008 to 2023, Rodzi and colleagues conducted a study that revealed a consistent rise in the amount of published material on this subject over a span of 13 years. The poll revealed that the United States ranked first among nations in terms of contributions in this field, with China, Germany, India, Australia, and the United Kingdom following in that order.(Kartini et al., 2023)

- ✓ **The main problem:**

Cloud accounting has shown considerable potential to advance accounting processes in advanced nations, prompting developing nations to reevaluate the deployment of similar technology to improve local accounting methodologies. From this viewpoint, and by applying it to the context of Algeria, we may encapsulate the focus of our research in the following principal question:

What is the preparedness level of Algerian accountants for using cloud accounting, and what are the principal difficulties affecting their readiness to shift to this technology?

- ✓ **Sub-questions:**
  - Do Algerian accounting professionals have adequate understanding of the fundamental principles of cloud accounting?
  - Are Algerian accountants sufficiently qualified to utilize cloud accounting software?

- What hurdles and obstacles do accountants in Algeria encounter while utilizing cloud accounting?

✓ **Importance of the study:**

This research is important for multiple reasons. Initially, it offers Algerian accountants a comprehensive understanding of cloud accounting technologies, consequently augmenting their adaptability to digital innovations and enhancing their professional efficacy, ultimately qualifying them for the global employment market. Secondly, from a legislative standpoint, the results of this research will aid the Algerian government in formulating and revising essential laws and regulations to guarantee the secure and efficient implementation of cloud accounting technologies, thereby promoting transparency and safeguarding financial data. This research will establish a robust knowledge foundation that assists in the formulation of educational curricula and training programs in Algerian universities and institutes, ensuring that future accountants possess the requisite skills and knowledge to tackle contemporary technological challenges.

✓ **Objectives of the study:**

This study aims to shed light on the reality of cloud technology in the Algerian accounting sector through three main axes. The research begins by assessing the level of awareness among Algerian accountants about the concept of cloud computing and its applications in their field of work. It then moves on to examine their possession of the necessary skills and competencies to work with accounting software based on this technology. Finally, the study delves into analyzing the challenges and obstacles that may hinder the adoption of this technology. Through this comprehensive analysis, the study seeks to provide an integrated vision of the possibilities and challenges of using cloud technology in Algerian accounting practices, thereby contributing to a deeper understanding of digital transformation in this vital sector.

✓ **Study methodology:**

The research utilized quantitative approaches to fulfill its core aims, including deductive reasoning and secondary data from prior studies concerning digital transformation, particularly in cloud accounting. Furthermore, we gathered primary data by sending a questionnaire to a sample of accounting professionals in Algeria and analyzed the data using statistical software.

✓ **The research Gap:**

This topic has received significant attention from the developed world. Nevertheless, further academic investigation is required about growing nations, particularly Algeria, with regards to this topic. (Yahia, 2024) study focused on the feasibility of using this technology in Algeria, while (Demdoum et al., 2020). in 2020 examined the challenges associated with the adoption of cloud accounting in that country. Therefore, it is necessary to conduct more comprehensive research on cloud accounting, considering the existing status of research in Algeria. Inspired by this imperative, this research endeavours to assess the level of preparedness exhibited by Algerian accountants in order to effectively fulfil the requirements and surmount the challenges posed by the cloud accounting domain.

1. Literature review

1.1. Study's background

An examination and analysis of existing literature "Cloud accounting refers to an accounting system that operates on remote servers, storing data and running software in the cloud." This technique promotes collaboration among team members and guarantees that everyone has access to the most up-to-date information, thereby improving the efficiency of accounting procedures(Akpan et al., 2023).

Cloud accounting software possesses similar fundamental features to conventional accounting software, but distinguishes itself by its remote location, accessibility, and cost-efficiency. The primary distinction is in the fact that cloud-based software is housed on distant servers, to which business data is transmitted, processed, and stored in the "cloud" and may be accessed at any time. Cloud accounting use secure, internet-based software to streamline corporate processes and enable small firms and their finance teams to conveniently access crucial information from any location. This promotes teamwork and facilitates the generation of financial reports. Users have the ability to access these programs either online or over alternative networks by utilising cloud service providers. This strategy obviates the necessity of installing software on individual desktop computers, as any member of the organisation can access the cloud from their personal devices. This technology facilitates the sharing of essential data and financial records among various teams, such as finance departments and remote branches, hence improving efficiency and ensuring consistency in accounting operations (Koleva & Angelova, 2023).

Cloud computing offers a groundbreaking method for managing accounting resources, allowing organisations to adjust their computing resources to match changing demands. This adaptability obviates the necessity for substantial initial investments in hardware infrastructure and continuous upkeep. Instead, it provides a payment structure where firms can pay for services as they use them, enabling them to deploy resources effectively and lower expenses. This is particularly advantageous during periods of high accounting activity or while performing intricate financial assessments(Lawal & George, 2023).

Cloud-based accounting systems, driven by artificial intelligence technology, provide sophisticated solutions that exhibit flexibility, efficiency, and security in the accounting domain. These systems are highly proficient in delivering comprehensive analytics and up-to-the-minute financial data, which can be accessed remotely from any location. As an illustration, Oracle's cloud accounting system, which is supplemented with artificial intelligence, provides advanced capabilities such as automated expense tracking and immediate financial reporting. These features greatly enhance the efficiency of financial management and improve the decision-making processes. These cutting-edge technologies signify a fundamental change in the accounting industry, merging the advantages of cloud computing with artificial intelligence capabilities to provide all-encompassing solutions that cater to the requirements of contemporary financial institutions.(Kai Xu et al., 2023)

Due to the progress in artificial intelligence technology, accounting software has greatly improved in its capacity to automatically comprehend and classify expenses and financial activities. These advancements have resulted in significant enhancements in the precision and effectiveness of automated data categorisation and input procedures. An exemplary instance of this advancement is QuickBooks Online, which incorporates sophisticated AI technologies through inventive functionalities like self-categorization and expense detection. These characteristics greatly improve the program's ability to intelligently and effectively manage financial data. The integration of AI capabilities and optical character recognition (OCR) technologies presents exciting opportunities in cloud accounting. This technology integration leads to a considerable drop in the amount of time required for manual data entry and a major reduction in the occurrence of human errors. As a result, individuals who utilise cloud accounting software have improved efficiency and precision in their day-to-day accounting tasks(Stoica, 2023).

1.2. The benefits of cloud accounting for accountants:

The advantages of utilising cloud-based accounting systems for accountants
Cloud accounting offers effective solutions for accountants, effectively addressing the various issues encountered in traditional accounting. For example, if an accountant has a substantial project that requires a substantial amount of data and their home computer does not have enough memory, they may effortlessly transfer all the data to the cloud using an application that operates on a server with extensive, limitless storage capacity(Koleva & Angelova, 2023).

For instance, if an accountant's computer or any other device needs to be reformatted, which may lead to the deletion of all data, the accountant can safeguard all files, photographs, records, and other information by storing them in the cloud. Consequently, individuals can retrieve this data from any other device and place without any limitations or loss of data.

Cloud accounting, which is based on the internet, allows users to access software from any location with an internet connection using any device that can browse the internet. This function is useful for business owners and accountants. In the past, accountants would often receive customer information on a weekly or monthly basis, frequently in the form of physical paper files or USB drives. This technique led to a delay in accessing transaction data, occasionally for many days, resulting in the late notice of errors and unacceptable transactions. Accountants now have immediate access to client ledgers, enabling them to rapidly reply to enquiries, discover problems at an early stage, and generate entries and reports without dela. (Stoica, 2023).

Cloud accounting eliminates the need for professional accountants to allocate time to data storage or backup procedures, as it automatically manages these tasks throughout operations. In addition, accountants can decrease their dependence on paper and accelerate the payment process by using cloud accounting to electronically communicate invoices to clients, instead of printing and sending them through traditional methods (Gade & Rao, 2022).

Accurate forecasting of market circumstances and the corporate environment is crucial for accountants, since it allows institutions to anticipate market trends more effectively. Cloud computing plays a significant role in the accounting sector by acting as a catalyst for gaining a competitive advantage and increasing profitability. It enables accounting experts to provide forecasts that are accurate and thorough. The advent of cloud technology has made these capabilities a realistic reality by providing an integrated technical underpinning for this profession (Laili et al., 2022).

Cloud technology facilitates seamless interaction between accounting software and the client's PayPal account, enabling automatic recording of financial transactions. The accountant's responsibility in this procedure is restricted to establishing the parameters for the accounting software to identify PayPal transactions, following which the software carries out the entire process. Furthermore, this technology enables the program to be synchronised with the company's bank account (Stoica, 2023).

The implementation of cloud accounting reduces the necessity for accountants to possess extensive knowledge of intricate accounting methods or conventional Excel formulas and shortcuts. Alternatively, the accountant dedicates their attention to consistently entering financial information, such as revenue and costs, into the cloud-based platform. This efficient approach guarantees the creation of precise and error-free reports, improving the effectiveness and accuracy of accounting tasks without the need for extensive technical knowledge (Chikkala & Jaffer, 2022).

Cloud accounting offers accountants exceptional freedom, enabling them to carry out their duties remotely from any preferred location, including their residences. This alleviates individuals from the daily journey to their workplace, resulting in time and cost savings related to transportation. This method provides accountants with the convenience of working on any device and in any comfortable position, which offers both physical and psychological comfort. Accountants are not need to adhere to conventional work dress rules, further enhancing their psychological well-being. Furthermore, cloud accounting provides accountants with the possibility of holding several occupations, allowing them to work in multiple positions concurrently (Shanawa & Al-Shammari, 2019).

1.3. Accountants' Concerns Regarding Cloud Accounting

Accountants' Worries Regarding Cloud Accounting Accountants exhibit reluctance to embrace this contemporary technology, which arises from an inherent aversion to change. They support their position by referencing worries over data security, as service providers may obtain access to sensitive information. In addition, they express concern about relinquishing control over operations and becoming fully reliant on service providers for application maintenance and management. These factors present substantial obstacles to their adoption of this novel technology (Dordevic et al., 2018).

The absence of control presents a security hazard that could result in the unauthorized disclosure of sensitive information, unauthorized use of intellectual

property, and interruption of efficient operations, potentially resulting in substantial harm to the reputation of the organization in question(Grosu et al., 2023).

The emergence of system reliance is a crucial concern. Accountants face challenges when attempting to migrate accounting data from previous cloud programs to a new cloud-based accounting software. This circumstance restricts the ability to use many cloud accounting applications, thereby reducing the freedom to transition between different systems (Türker, 2023).

The majority of accountants feel anxious about service interruptions that are outside of their control. Although periodic maintenance and updates are essential for improving program performance, they can cause periods of service unavailability. Although service providers make efforts to plan these periods during times of low traffic and adhere to the "five nines" approach (99.999% uptime), unforeseen outages can still occur. In addition, updates may experience temporary loss of specific functionalities due to compatibility concerns, despite developers' diligent attempts to reinstate them in subsequent updates. These dangers pose an inherent barrier when depending on cloud services (Stoica, 2023).

(Khanom, 2017) classified professional accountants into three distinct groups according to their attitudes towards cloud accounting: The first group refrains from adopting it due to concerns regarding security. The second group acknowledges its presence but is cautious about its potential effects on job opportunities and profits, considering its user-friendly nature for business owners. Conversely, the third group is highly enthusiastic about the possibilities this technology presents for enhancing accounting efficiency and has embraced it to enhance productivity and profitability. This classification represents a division among the accounting profession concerning this technology.

(DIMITRIU & MATEI, 2014) observe that a portion of professional accountants holds a sceptical perspective towards cloud accounting technologies, perceiving them as a potential menace to their professional prospects. Nevertheless, it is necessary to reassess this viewpoint, as cloud accounting does not eradicate the involvement of human input but rather amplifies its efficiency. Essentially, it is a tool that simplifies hard and repetitious accounting duties. It should be seen as a solution to current challenges, rather than something to be feared. The researchers ascribe this negative perspective to a misinterpretation and the novelty of these technology remedies.

A study conducted in the United States examined the progression of managers' and accountants' viewpoints on cloud accounting over a span of three years. The survey findings indicated that these individuals progressed from being hesitant users to becoming domain experts, as they discovered that cloud accounting not only rivalled existing software-based accounting solutions but also surpassed them to a significant degree. As a result, certain managers who were interviewed expressed strong opposition to returning to their old accounting system. They indicated that this marks the beginning of a new era in accounting, which may be referred to as the "cloud age."(Hakimovna, 2023)

Certain accountants view cloud-based software as a potential danger, yet this danger stems from their lack of readiness to fully grasp and appreciate the benefits of cloud accounting. Humans often experience dread towards the unknown, which arises from a limited comprehension of the nature of technology. The adoption of cloud accounting does not entail the replacement of accountants; rather, it seeks to streamline their responsibilities and enhance operational effectiveness. Cloud apps do not replace human expertise, but rather serve as tools that assist and improve performance. This change is analogous to the historical move from horse-drawn carriages to automobiles. At first, many harbored apprehension and misconceptions about automobiles, but they quickly became indispensable components of our daily existence. Currently, we are observing a comparable shift from software that is limited to a certain location to solutions that are based on cloud computing. Although it may be difficult to imagine what lies ahead, historical evidence shows that every progress encounters initial opposition (DIMITRIU & MATEI, 2014).

2. Review and Synthesis of Prior Research and Development of Research Hypotheses:

In order to evaluate the level of preparedness among accountants in handling cloud accounting technology, we undertook a comprehensive analysis of pertinent prior research. The investigations were classified into three primary categories: accountants' understanding of the fundamental principles of cloud accounting, the competencies and credentials necessary to operate in a cloud accounting setting, and the challenges linked to the use of this technology. The research hypotheses were established based on the examination of each axis, with the aim of guiding the study and achieving its desired objectives.

2.1. Research on Accountants' Perception of Fundamental Concepts in Cloud Accounting:

A study conducted by (Saha et al., 2020) found that cloud accounting is not extensively adopted in Bangladesh. The majority of study participants were unaware of it and did not contemplate its utilisation. In order to expedite the implementation of cloud accounting in Bangladesh, the researchers propose that institutions and key stakeholders should actively promote the adoption of this technology. In addition, they suggested lowering the expenses associated with cloud accounting services and providing cloud-based accounting software at a little upfront cost.

(Tarmidi et al., 2014) found that around 66% of participants need further acquaintance with cloud technologies. Their lack of information is thought to have hindered them from capitalising on its potential benefits. This discovery is a noteworthy indication for both cloud service providers and the Malaysian government, even though Malaysia has already implemented specific steps to promote the usage of cloud computing.

According to the findings of (Mahdi & Al-Tamimi, 2020) study, the adoption of cloud accounting has significantly increased. Nevertheless, numerous business owners and professionals are already ascertaining the specific components and

advantages of these services, as well as the potential changes that will occur in the field of accounting.

(Hawez, 2022) revealed that accountants in Kurdistan are required to acquire proficiency in cloud accounting software. A majority of the study's participants (60%) required knowledge about the advantages of implementing cloud accounting. The deficiency in understanding was not confined solely to accountants, but also encompassed regional managers and business owners.
These studies allow us to formulate the following hypothesis for our research: Algerian accounting professionals lack sufficient knowledge on the basic principles of cloud accounting.

2.2. Studies on the skills and qualifications that enable accountants to operate within a cloud accounting environment.

The study conducted by (Shbeilat & Al-Hajaia, 2022) revealed that contemporary accounting software, particularly cloud-based solutions, necessitates the expertise of skilled accountants to guarantee its effective functioning and utilisation.

(Gonçalves et al., 2022) discovered that accountants in Portugal possess a comprehensive understanding of growing concerns pertaining to cybersecurity and the safeguarding of accounting data. Continuing IT training is expected as a result of relationships with accounting software vendors. In a study conducted by (Albuquerque Filho et al., 2022) it was found that the digital era has presented the area of accounting with a shortage of skilled personnel as one of its issues.

The findings of the study conducted by (Mbizi et al., 2022) suggest that African accountants frequently require proficiency in computer skills and critical thinking abilities in order to effectively navigate the technological landscape. Additional qualities that have been recognised include emotional intelligence, technological expertise, and analytical abilities. These qualities are essential for accountants to stay relevant in the accounting profession. The results also indicate that proficient accounting necessitates adept data management abilities in order to carry out its responsibilities efficiently in the current era of digitalisation. These studies allow us to put up the following hypothesis Algerian accountants are not sufficiently qualified to work with cloud accounting software.

2.3. Studies on the Challenges of Adopting Cloud Accounting

A study conducted by (Yau-Yeung et al., 2020) revealed that legal adherence is a noteworthy issue in cloud accounting, specifically for professional accountants. The larger and more specialised risks connected with legal compliance in cloud accounting can be linked to the complicated legal requirements in accounting and the sensitivity of financial data.

A study conducted by (Syed Owais, 2020) revealed that Egyptian organisations who adopt cloud accounting face higher levels of security vulnerabilities compared to those that do not utilise this technology. Although cloud accounting has had a substantial effect on reducing overall expenses and transforming most

capital expenditures into operating costs, the investigation found that numerous cases of fraud and hacking were unintentionally uncovered. In addition, firms are reluctant to reveal these problems in order to prevent the loss of clients who may be concerned about additional tampering with their data and accounts.

(Al-Fallah & Rafi, 2022) identified multiple obstacles faced by Libyan enterprises when implementing cloud accounting. The main obstacles identified encompass a dearth of knowledge regarding cloud computing and its utilisation in accounting, the absence of legislation and legal regulations pertaining to cloud computing, exorbitant service expenses, the necessity for online functionality, apprehensions regarding cloud privacy, and the inadequate and sluggish internet connectivity in Libya. These studies allow us to put up the following hypothesis: Accountants in Algeria have numerous obstacles while depending on cloud accounting.

3. Methods and Tools:

This section's objective is to gain insight into the study community's perspectives on the study's concerns and validate or disprove the hypotheses by using theoretical knowledge on the study sample. In this section, we want to outline the methodologies used in the data collection process and the statistical approaches applied in the analysis of this data.

3.1. Data Collection Tool:

In this research, a questionnaire was employed as a means of data collection. The questionnaire consisted of thorough and unambiguous sentences that accurately represented the assumptions, questions, and objectives of the investigation. We utilized a five-point Likert scale to measure the responses of the participants. In general, the questionnaire consisted of axes that were categorized into four sections: The first component of the survey included six questions that collected demographic information from the study population. These questions included age, educational attainment, profession, experience, and two questions about knowledge with different global cloud accounting programs and prior experience with cloud accounting software. The first axis comprised six questions pertaining to accountants' understanding of the core principles of cloud accounting. Section two had ten questions pertaining to the competence of accountants in Algeria to manage the cloud accounting environment. The final axis comprised ten questions that specifically addressed the difficulties that accountants in Algeria may have while utilizing cloud accounting software.

3.2. Study Population and Sample:

- ✓ **Study Population:** The research population consists of professionals in the accounting and auditing field in Algeria, including qualified accountants, auditors, and accounting experts operating in the Algerian business environment**.**
- ✓ **Study Sample:** The questionnaire was sent to a sample of practitioners in the accounting and auditing field, specifically targeting a qualified accountants, auditors, and accounting experts, using a simple random sampling method.

Out of the 280 electronic questionnaires that were distributed by email, only 104 responses were successfully obtained.

- ✓ **Time frame of the field study:** The study lasted from May 2024 to August 2024.

3.3. Validity and Reliability of the Study Tool

- ✓ **Validity of the study tool:** The tool was validated by assessing the internal consistency of the study measurement axes by computing the correlation coefficients between the responses of each axis and the overall axes. Table 1 presents the correlation coefficients among the different responses of each axis in relation to the total axes.
- ✓

Table 1. Correlation of Axis Responses

FIRST AXIS	Questions	1	2	3	4	5	6
	Correlation Coefficient	0.725	0.73	0.922	0.592	0.849	0.697
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000
SECOND AXIS	Questions	1	2	3	4	5	6
	Correlation Coefficient	0.693	0.63	0.471	0.747	0.576	0.582
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000
	Questions	7	8	9	10	/	/
	Correlation Coefficient	0.271	0.452	0.471	0.31	/	/
	Sig. (2-tailed)	0.005	0.000	0.000	0.001	/	/
THIRD AXIS	Questions	1	2	3	4	5	6
	Correlation Coefficient	0.635	0.298	0.3	0.52	0.433	0.677
	Sig. (2-tailed)	0.000	0.002	0.002	0.000	0.000	0.000
	Questions	7	8	9	10	/	/
	Correlation Coefficient	0.433	0.539	0.433	0.365	/	/
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	/	/

Note: Made by the researchers based on $SPSS_{26}$ program outputs.

The correlation coefficients, which range from 0.271 to 0.922, or more than 30%, were found to be primarily between moderate and high between the total of each axis and its different responses. That suggests a reasonable level of association. Furthermore, because the p-values were less than 0.05, these correlations between the various claims were statistically significant. As a result, all of the statements of the axes may be trusted throughout the study, and there is internal consistency among them.

- ✓ **Reliability of the study instrument:** In order to evaluate the internal consistency of the questionnaire used in this study, the Cronbach's Alpha coefficient was determined. (see table 2).

Table 2. Results of Reliability Test

Axis	Number of questions	Reliability coefficient (Cronbach's alpha)	Validity coefficient
The first axis	7	0.856	0.925
The second axis	7	0.711	0.843
The third axis	6	0.701	0.837

Note: Made by the researchers based on $SPSS_{26}$ program outputs.

The reliability coefficients, spanning from 0.701 to 0.856, exceeded the commonly accepted benchmark of 0.70, demonstrating satisfactory internal consistency. In parallel, the validity coefficients, largely nearing 0.8, further validated the respondents' answers.

3.4. The Statistical Approach Used:

Given that the data are ordinal, as indicated by the five-point Likert scale (Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree), nonparametric methods were employed. Descriptive statistics were derived based on frequency distributions and the median. Subsequently, a One-Sample Wilcoxon Test was performed to infer population parameters.

4. Result and Discussion

In this section, we review and discuss the results of the field study of the study sample, which is considered of great importance as the theoretical aspect is applied to the study sample, and then the results are generalized to the study community.

4.1. Personal and Functional Characteristics

This section outlines the personal and functional attributes of the study sample, selected based on their relevance to the overall study framework and its various dimensions (refer to Table 3).

Table 3. Distribution of the Study Sample

Age			**Grade**		
Categories	**Frequency**	**Percent**	**Categories**	**Frequency**	**Percent**
From 20 to 30 years old.	24	23.1	Bachelor's degree	48	46.2
From 31 to 40 years old.	40	38.5	Master's degree	40	38.5
Over 40 years old.	40	38.5	Doctorate	16	15.4
Total	**104**	**100.0**	**Total**	**104**	**100.0**
Experience			**Occupation**		
Categories	**Frequency**	**Percent**	**Categories**	**Frequency**	**Percent**
Less than 5 years.	32	30.8	Certified Accountant	56	53.8
From 6 to 10 years old.	32	30.8	Auditor	32	30.8
From 11 to 15 years	16	15.4	Accounting expert	16	15.4

old.					
More than 20 years.	24	23.1	/	/	/
Total	**104**	**100.0**	**Total**	**104**	**100.0**
Are you familiar with the range of cloud accounting software that is offered on the international market?			Have you ever tried using software for cloud accounting before?		
No	32	30.8	No	88	84.6
Yes	72	69.2	Yes	16	15.4
Total	**104**	**100.0**	**Total**	**104**	**100.0**

Note: Made by the researchers based on $SPSS_{26}$ program outputs.

The table above indicates variability among the various age groups, signifying that the sample encompasses multiple segments. The respondents possess a range of educational qualifications, possibly resulting in varied responses due to scientific disparities. Furthermore, there exists a moderate distribution across various levels of professional experience, which is advantageous for eliciting diverse replies informed by contrasting professional backgrounds. The survey reveals that certified accountants are the most responsive professional category, and researchers believe they are the most inclined to adopt cloud computing technology.

The table above indicates that 69.6% of the sampled persons are cognizant of the variety of cloud accounting software available in the global market, facilitating their comprehension of the other survey questions and the underlying objectives without difficulty. Furthermore, 84.6% of the sample lacked prior experience with cloud accounting techniques, which may enhance the study by elucidating the reasons for this hesitance.

4.2. Results of Accounting Professionals' Knowledge of the Foundations of Cloud Accounting:

In order to examine the hypothesis regarding the knowledge of Accounting Professionals on the foundations of Cloud Accounting, Table 4 presents the viewpoints of the sample members on this matter.

Table 4: The results of the first axis

Question	Frequency ratio					Median	Sig Wilcoxon test	Trend
	Strongly Opposit	Opposit	Neutral	Agree	Strongly Agree			
1	/	/	/	46.2%	53.8%	5	0.000	Strongly Agree
2	/	/	15.4%	69.2%	15.4%	4	0.000	Agree
3	/	/	46.2%	53.2%	/	4	0.000	Agree
4	/	/	15.4%	69.2%	15.4%	4	0.000	Agree
5	/	/	53.8%	38.5%	7.7%	3	0.000	Neutral
6	/	7.7%	38.5%	38.5%	15.4%	4	0.000	Agree

Note: Made by the researchers based on $SPSS_{26}$ program outputs.

- The majority of respondents' answers to questions (1-6) tended to be "agree," "strongly agree," or "neutral." Our analysis reveals that questions (2-4) and (6) exhibit a propensity for agreement; however, question number (1) seems to

trend towards Strongly Agree. Conversely, question number 5 tends towards neutrality.

- The median value is predominantly "4", corresponding to questions (2-4) and (6). However, it is worth noting that the median value varies between question (1) and question (5), with values of "5" and "3". Hence, the Wilcoxon signed-rank test is particularly suitable for a single sample, as it depends on average values to evaluate the direction of responses and to extrapolate the findings to the entire study population.
- Notably, the Wilcoxon test results for the six questions are below "0.05", therefore confirming the statistical significance of people's answers to the questions on the first axis.
- Overall, the sample persons' responses on this axis tend to be in favor of "agree," suggesting a strong degree of understanding about the application of accounting principles related to cloud accounting in the Algerian environment context.

4.3. Results of the qualifying Accounting Practitioners in Algeria to Deal with the Cloud Accounting Environment:

In order to examine the hypothesis regarding the competence of accounting professionals in Algeria to handle the cloud accounting environment, Table 5 presents the viewpoints of the participants in the study.

Table 5: The results of the second axis

Question	Frequency ratio					Median	Sig Wilcoxon test	Trend
	Strongly Opposit	Opposit	Neutral	Agree	Strongly Agree			
1	/	/	15.4%	76.9%	7.7%	4	0.000	Agree
2	/	7.7%	7.7%	69.2%	15.4%	4	0.000	Agree
3	15.4%	38.5%	38.5%	7.7%	/	2	0.000	Disagree
4	/	15.4%	53.8%	30.8%	/	3	0.000	Neutral
5	/	7.7%	38.5%	53.8%	/	4	0.021	Agree
6	/	/	7.7%	61.5%	30.8%	4	0.000	Agree
7	/	/	/	30.8%	69.2%	5	0.000	Strongly Agree
8	/	/	/	69.2%	30.8%	4	0.000	Agree
9	/	/	/	23.1%	76.9%	5	0.000	Strongly Agree
10	/	7.7%	30.8%	61.5%	/	4	0.000	Agree

Note: Made by the researchers based on $SPSS_{26}$ program outputs.

- The results suggest a divergence in the responses provided by the participants to the questions. (1-10). The results of our study indicate that questions (1-2), (5-6), (8), and (10) exhibit a propensity towards agreement. Additionally, questions (7) and (9) have a significant inclination towards approval. Conversely, question number (4) displays a tendency towards neutrality, while question number 9 signals dissent. (3).
- The prevailing median value of the responses is "4", corresponding to questions (1-2), (5-6), and (8). (10). Notwithstanding, it is important to mention that the median value varies between questions (7) and (9), with a median of "5". Conversely, the median value declines in question number (4) to "3" and in

question number (3) to "2." To ensure the statistical significance of the sample replies, we performed a Wilcoxon signed-rank test using the mean values. This test allowed us to evaluate the direction of the responses and make conclusions that apply to all members of the study sample.

- The Wilcoxon test findings establish that the significance level of the ten questions was below "0.05," therefore validating the statistical significance of individuals' answers to the questions in the second axis.
- The responses of the sample persons in this area tend to indicate "agreement," suggesting a high level of competence among accounting practitioners in Algeria to function in the cloud accounting environment.

4.4. Results of The Obstacles the utilisation of cloud software by accounting professionals in Algeria:

Table 6 gives the perspectives of the survey participants to analyse the hypothesis about the obstacles to the use of cloud software by accounting professionals in Algeria.

Table 6: The results of the third axis

Question	Frequency ratio					Median	Sig Wilcoxon test	Trend
	Strongly Opposit	Opposit	Neutral	Agree	Strongly Agree			
1	/	/	15.4%	76.9%	7.7%	4	0.000	Agree
2	/	7.7%	7.7%	30.8%	53.8%	3	0.000	Neutral
3	/	7.7%	38.5%	53.8%	/	4	0.000	Agree
4	/	/	38.5%	53.8%	7.7%	4	0.000	Agree
5	/	/	/	69.2%	30.8%	4	0.000	Agree
6	/	/	/	84.6%	15.4%	4	0.000	Agree
7	/	/	/	69.2%	30.8%	4	0.000	Agree
8	/	/	/	/	100.0%	4	0.000	Agree
9	/	/	/	69.8%	30.8%	4	0.000	Agree
10	/	/	/	61.5%	38.5%	4	0.000	Agree

Note: Made by the researchers based on $SPSS_{26}$ program outputs.

- The findings suggest that the majority of participants' responses to the ten questions exhibit a proclivity towards agreement. The result is seen in all questions, with the exception of question number (2), where a neutral position is noted.
  The prevailing median value of the responses is "4", applicable to all ten questions except question number (2), where the median value is "3," suggesting a neutral interpretation.
  The Wilcoxon test findings establish that the significance level of the 10 questions was below "0.05," therefore validating the statistical significance of individuals' answers to the questions on the third axis.
  The replies of the sample populations in this area tend to indicate a strong consensus, suggesting a significant presence of certain challenges in the implementation of cloud accounting in the Algerian context.

4.5. Analysis of the Results

This section evaluates the validity of the proposed hypotheses and analyzes the study's outcomes.

- ✓ **The First hypotheses:**

The initial study question is to the degree of awareness among accounting practitioners in Algeria regarding the principles of cloud accounting. The initial hypothesis has been dismissed, as elucidated by Table 4, which illustrates that the overall trend of the sample indicates agreement, along with the corresponding significance.

This result we have attained contrasts with the conclusions of (Hawez, 2022; Saha et al., 2020; Tarmidi et al., 2014). We acknowledge that our findings do not contradict the results of the previously cited studies. This is due to varying levels of awareness of the fundamentals of cloud accounting across different countries.

- ✓ **The Second hypotheses:**

The second study question examines the degree to which accounting professionals in Algeria hold the competencies necessary for engaging with cloud accounting. The inquiry has been addressed by endorsing the second hypothesis, elucidated in Table 5. This table illustrates that the overall trend of the sample indicates agreement, along with the corresponding significance.

This result signifies a future in which Algerian enterprises would depend on contemporary accounting software. According to (Albuquerque Filho et al., 2022), the need for more qualified personnel is one of the challenges introduced by the digital era in the accounting sector.

The research conducted by (Shbeilat & Al-Hajaia, 2022)substantiated this assertion, indicating that contemporary accounting software, particularly cloud-based applications, necessitates the employment of skilled personnel for effective operation and management.

Thus, the attainment of requisite skills by professionals in Algeria to utilize cloud accounting software is highly beneficial and a significant advancement in the adoption of such sophisticated programs by Algerian enterprises.

- ✓ **The Third hypotheses:**

The third study Question examines the limitations and challenges encountered in deploying cloud accounting in Algeria. The inquiry has been resolved by endorsing the third hypothesis, which identified multiple problems. Table 6 indicates that the overall trend of the sample reflects agreement along with the corresponding significance.

This result corroborates the findings of (Al-Fallah & Rafi, 2022) study and the research conducted by Yau-Yeung et al. in 2020, indicating that despite its various advantages, cloud accounting encounters several impediments to its adoption. (Syed Owais, 2020) corroborated this in their 2020 investigation. They indicated that Egyptian organizations that transitioned to cloud accounting experienced greater security issues and breaches than those that maintained traditional accounting software. Therefore, firms seeking to implement cloud accounting must recognize a series of challenges and endeavor to devise countermeasures.

Conclusion

A significant knowledge gap concerning the preparedness of accountants in Algeria to engage with cloud accounting has been resolved. This subject pertains to contemporary technological advancements, underscoring the need for research in comprehending how professionals adjust to emerging problems and opportunities. The findings indicate compelling elements that illustrate accountants' readiness in this domain. The findings were as follows:

- Accounting professionals in Algeria demonstrate a satisfactory level of awareness and understanding of the principles of cloud accounting.
- Accounting professionals in Algeria hold satisfactory qualifications that allow them to engage proficiently with cloud accounting.
- Numerous barriers may hinder accountants in Algeria from embracing cloud accounting software.

The key recommendation derived from our research is that accountants should establish study groups or online forums to share information and experiences with cloud accounting. They may also convene regular discussion meetings to tackle the difficulties they encounter and suggest solutions. Furthermore, accountants may be incentivized to engage in brief training programs that emphasize the practical application of cloud software. Ultimately, they might engage with specialists in the domain to get guidance on enhancing their proficiency in utilizing these applications.

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