Approach to Cloud Accounting Implementation in Algerian Enterprises

1. **Mohammed Ali Dahem** (Mohammedali.dahem@univ-batna.dz) - University of Batna 1 - El Hadj Lakhdar (Algeria), Laboratory of Enterprise Economics and Applied Management (LEEGA)

2. **Hanane Maalla** (Maalla-hanane@univ-eloued.dz) - University of El Oued - Hamma Lakhdar (Algeria), Laboratory of Renewable Energy Economics and its Role in Achieving Sustainable Development

3. **Kamel Benaoune** (kamel.benaoune@univ-batna.dz) - University of Batna 1 - El Hadj Lakhdar (Algeria), Laboratory of Enterprise Economics and Applied Management (LEEGA)

Received on: 12/12/2023 Accepted on: 28/02/2024 Published on: 02/03/2024

Abstract:

This study aims to approach the reality of implementing cloud accounting in Algerian enterprises by addressing the theoretical perspective of cloud accounting. It attempts to answer the following main problem: What is the approach to implementing cloud accounting in Algerian economic institutions? The topic was addressed through both theoretical and practical aspects. In the theoretical framework, concepts related to cloud accounting, its types, advantages, challenges, as well as its pros and cons compared to traditional accounting and accounting information systems were identified. On the practical side, a descriptive analytical method was used. The study's tool was a questionnaire distributed to a sample of 47 accounting experts, accountants, and certified accountants. The study found that cloud accounting faces moderate challenges in the context of developing accounting information systems that align with the requirements of cloud accounting.

Keywords: Cloud accounting, Algerian enterprises, accounting information systems.

Tob Regul Sci.™ 2024;10(1): **1010 - 1037**

DOI: doi.org/10.18001/TRS.10.1.65

Introduction:

In recent years, the world has witnessed a qualitative leap and significant development in information and communication technology, impacting all aspects of life and various economic and social activities. Companies and institutions have focused on developing and enhancing their performance and information systems, transitioning from traditional manual systems that failed to meet the requirements of digitization and modern systems facilitated by computers.

Given the transformative potential of this technology in enhancing work aspects, elevating performance levels, and improving competitiveness, cloud accounting stands out as one of the most prominent and advanced technologies that can be utilized in this field. It provides access to a wide range of information, data, and applications, all of which must meet the requirements necessary for cloud accounting, including devices, internet access, and browsers. These tools can be utilized

to achieve excellence, enhance cognitive abilities in the field of accounting profession, facilitate information transfer, and ease storage from and to anywhere and anytime in the world.

Study Problem: The study problem is defined in addressing the following questions:

- What is the current status of cloud accounting in the accounting work environment in Algeria?
- What are the requirements for cloud accounting in the accounting work environment in Algeria?
- What challenges does cloud accounting face in the accounting work environment in Algeria?

Therefore, the study aims to achieve the following objectives:

- Identify the requirements for implementing cloud accounting in Algerian enterprises.
- Understand the concept of cloud accounting, its types, benefits, challenges, pros, and cons.
- Identify the requirements for implementing cloud accounting, compare it with traditional accounting, and understand its accounting system.

Study Hypotheses: We will present study hypotheses according to the adopted model, which constitute possible initial answers to the formulated problems within the theoretical framework of the study. These hypotheses are divided as follows:

1. The first hypothesis H0: There is no clear adoption of the concept of cloud accounting in the Algerian accounting work environment. H1: There is a clear adoption of the concept of cloud accounting in the Algerian accounting work environment.

2. The second hypothesis H0: Individual consideration has no effect on the interest in cloud accounting practice in Algerian economic institutions. H1: Individual consideration has an effect on the interest in cloud accounting practice in Algerian economic institutions.

3. The third hypothesis: H0: The requirements for cloud accounting are not available in the Algerian accounting work environment. H1: The requirements for cloud accounting are available in the Algerian accounting work environment.

4. The fourth hypothesis H0: The reality of cloud accounting work is characterized by serious challenges in the Algerian accounting work environment. H1: The reality of cloud accounting work is not characterized by serious challenges in the Algerian accounting work environment.

Study Limitations: The geographical limitations of the study include a group of certified accountants, accountants, and accounting experts in the Wilaya of Ouargla, El Oued, and Hassi Messaoud. As for the temporal limitations, it extends from March to May 2023.

Study Methodology and Plan: The study adopts a descriptive analytical research methodology and a field study approach, including discussions on the following points:

- Literature review of cloud accounting.

- Requirements for cloud accounting application and comparison with traditional accounting.
- Presentation of previous Arab and foreign studies.
- Field study.

Literature Review:

Study (Boughzala Hamad Masouda, Messaoudi Cheikha, Mahlou Faiza, 2020/2021): This study aims to identify the most important factors influencing the use of cloud accounting and to provide an overview of its concept, benefits, challenges, and future actions required for its implementation. They relied on a descriptive approach to clarify its theoretical framework, while in the applied aspect, they relied on a case study method by designing a questionnaire. This study reached several practical and theoretical results, including:

- Cloud accounting possesses advantages that make it the most suitable developmental structure.
- Companies and organizations can turn to it to develop and enhance their information with a clear vision of the institution's goal, providing numerous opportunities for institutions of all sizes and shapes to facilitate information exchange.
- Determining the achievement extent of its tasks.
- This study also recommends focusing on cloud accounting by strengthening research and researchers in this field, emphasizing the need to develop corporate activities and progress towards the future.

Study (Dr. Michael Samuel Alfonse Basil, 2018, Field Study): The objective of this study is to analyze the factors influencing the decision to use cloud accounting. This part includes the community and study sample, data collection methods, their path, statistical methods used, in addition to analyzing and discussing the results. The study utilized questionnaires, descriptive and statistical analysis. This study reached several results, including: • Existence of statistically significant relationships between these variables. • The decision to use cloud accounting in the Egyptian business environment. This study recommends:

- Conducting representative studies addressing another set of independent variables for study and their impact on the decision to use cloud accounting.
- Starting to prepare qualified cadres in the institution to deal with cloud accounting.

Study (Asmaa Houri, Khouloud Khedrawi, Yasmin Qurei, 2020/2021, Case Study of Sonelgaz El Oued): This study aimed to identify cloud accounting, its types, assess the reliability of cloud accounting technology systems, identify obstacles, and shed light on its application in institutions. The descriptive analytical method was used in the theoretical aspect, and a case study was conducted for the applied aspect. For the tools used, desktop surveys of references, books, documents, laws, decrees, conferences, and articles were employed. This study reached several results, including:

- Cloud computing reduces the number of employees in the company, leading to salary reductions, relying on accounting and contributing to organizing and reducing accounting work.

- This study recommends that economic units rely on cloud accounting and reap its benefits.

- Local accountants should be trained in technology and develop their skills, integrating cloud accounting with auditing as a future step to facilitate work.

Study by Ghosh.A (June-December 2015), titled "The Adoption of Cloud-Based E-Accounting in India: Journal of Management Studies and Research": The study examined the possibility of the emergence of cloud-based electronic accounting practices in India. The study found that organizations can design their accounting programs with the help of cloud infrastructure. They can also design cloud-connected mobile applications to maintain accounts. As a result, these companies can free themselves from investing in hardware or software and the associated costs of reporting and maintenance.

Study by Dimitriu, O., & Matei, M. (2015), titled "Cloud Accounting: A New Economic Model in a Difficult Context: Procedia Economics and Finance": The study addressed questions about the impact of cloud accounting on all stakeholders in the business management field through theoretical and academic perspectives, comparing traditional accounting practices with cloud accounting practices. The study concluded that the accounting profession needs to be flexible with the evolution relying on cloud businesses and benefit from them. Practitioners also need to transition to more interactive services and effectively meet information demands.

- In conclusion, our study attempts to address a variable: the reality of implementing cloud accounting requirements in Algerian institutions, which is different from the environment in which previous studies were conducted. There is also a difference in the samples on which previous studies were applied, most of which were empirical studies.

1.2. Theoretical Framework of Cloud Accounting:

The qualitative leap in data usage across various interactions among individuals and institutions has highlighted the potential for utilizing these capabilities in corporate accounting and presenting financial information in faster and easier ways, thus giving rise to cloud accounting. In this theoretical framework, we will delve into the concept of cloud accounting, its types, significance, objectives, compare it with traditional accounting, and explore its advantages and disadvantages.

1.2.1. Concept and Types of Cloud Accounting:

Cloud accounting is a recent concept in computerized accounting based on cloud computing, which represents a set of distributed computing services, applications, and access to information and data storage without the user needing to know the actual location or configure the systems providing these services.

Cloud accounting also has the ability to transform the way accounting applications are used by accountants, thus modernizing the entire business world. What distinguishes cloud accounting from traditional accounting methods is its ability to demonstrate the current financial status of businesses by preparing data in real-time (1).

I.2.2- Types of Cloud Accounting:

The National Institute of Standards and Technology (NIST) identified four models of cloud accounting:

A. Public Cloud Computing: This entails an infrastructure based on providing cloud computing resources over the internet to a group of clients, whether individuals, companies, or institutions.

B. Private Cloud Computing (2): This model is used to provide customized services to specific clients, where one client rents it, and it remains under their complete control.

C. Community Cloud Computing: This model involves providing infrastructure for the use of a specific community with common interests and policies. D. Hybrid Cloud Computing: This model allows beneficiaries to blend the characteristics of private, public, and community clouds simultaneously. Therefore, this model is termed hybrid cloud computing because it combines the features of the previous clouds into one service.

I.2.3. Benefits and Challenges of Cloud Accounting (3):

I.2.3.1. Benefits of Cloud Accounting: There are numerous benefits that companies can achieve through the implementation of cloud accounting, as highlighted below:

- Cloud accounting reduces costs for economic units by eliminating the need for a large number of computer devices, thus reducing maintenance expenses.

- The cloud accounting system can be accessed from any device connected to the internet, facilitating access to information for users, work teams, and financial advisors at any time, which is crucial for providing timely advice.

- Cloud accounting provides current financial information with updates, aiding in quickly responding to changes by offering a clear picture of the economic unit's financial status in real-time.

- The greatest benefit of cloud accounting lies in saving time and ensuring quality, as transactions are automatically recorded accurately at the right time, without manually entering account statements.

- Ensuring the security of financial data is essential for any business. In a cloud accounting system, economic unit data is stored online, eliminating concerns if a laptop is stolen or if there is a site fire, as the data is secure off-site.

- Cloud accounting applications help accountants generate financial reports and portfolios in real-time by adapting to changes in work conditions quickly. This situation creates an environment for managers to make immediate and accurate financial decisions, contributing to increased performance.

- Cloud accounting applications allow users to create backup copies of their financial data at any time and any support number, ensuring that data loss is avoided as the data is retained on enterprise servers providing the service (4).

- Service providers can offer remote support to establishments during the installation of accounting software on the internet. They can also swiftly resolve issues that occur during usage via support lines.

I.2.3.2- Challenges of Cloud Accounting Application (5):

Despite the advantages and benefits of using cloud accounting, there are several obstacles to its implementation, including:

- The need for large storage space.
- Ensuring the security and confidentiality of client data.
- Providing suitable applications for all institutions and their economic viability.
- Comprehensive coverage for quick internet access.
- Convincing decision-makers to adopt a cloud accounting transition schedule.
- Heavy reliance on other companies limits the flexibility of technology used and reduces user adaptability. Critical risks, even with appropriate service-level agreements, include the potential closure of cloud accounting service providers, preventing clients from storing, extracting, or transferring their data or systems from one location, especially when they want to change or terminate services in the future. Additionally, potential issues may arise if cloud service providers decide to increase fees for their services, which may lead to temporary denial of access to client data or systems to leverage the company's bargaining power on the required price. Another risk in cloud accounting is the use of insecure application programming interfaces (APIs) to access data and services, especially if they are weak or unreliable, which may expose client company data to the risk of cyberattacks.

I.2.3. Requirements for Cloud Accounting Application:

For cloud accounting to be implemented effectively, certain requirements must be met, including (6):

- Personal computer: Referring to any personal computer with average or below-average capabilities, provided it can connect to the internet, access the cloud, and utilize the offered services.
- Operating system allowing internet connection and access to the cloud: Cloud computing automatically provides its services to users upon access, fairly and equitably among users according to their needs. The feature of internet connection via the operating system should be available in all operating systems, despite their differences and multiplicity.
- Browser: This is the tool used to access cloud computing, and cloud computing is compatible with all available browsers, regardless of their variety and diversity, to overcome obstacles for users and ensure ease of access.
- Availability of Internet Connection: After connecting, the link between the user and cloud computing is established. It is preferable for the connection to be high-speed to ensure efficient and effective access to cloud computing services.

- Cloud Computing Service Providers: These are the entities that provide cloud computing services, hosting and providing all cloud computing services online. They need to be efficient and have immense capabilities to accommodate users, developers, and programmers.

Secondly (7)**:** The Difference Between Cloud Accounting and Traditional Accounting Cloud computing has been used in the field of accounting, leading to the emergence of what is known as cloud accounting or online accounting. This involves using accounting software and systems via the internet, where these programs and systems are stored online and can be accessed anytime, anywhere, as long as there is an internet connection. Some perceive traditional accounting software as a tangible product that is purchased and maintained on the company's computer systems. However, with cloud accounting software, the user (the company) purchases the right to use these programs available online, which is known as the software as a service (SaaS) model.

Consequently, the primary goal for most entities has become replacing traditional accounting with a web-based system for managing their financial data. The following table compares traditional accounting software with cloud accounting software (8):

Table No. (1-1): Illustrates the Difference Between Cloud Accounting and Traditional Accounting

Traditional accounting	Cloud accounting
Data is manually entered	Data is entered automatically
Remote access to the system is not possible	Remote access to the system is possible from anywhere
The system is manually installed and updated	The system is remotely installed and updated
Cannot work outside the workplace	Work can be done remotely outside the workplace
Laws and regulations are followed individually	Laws and regulations are followed through the cloud accounting system
Invoices and official documents are manually filled out and sent	Invoices and official documents are filled out and sent via the web
The manager of the institution cannot remotely access financial data at any time	Institution managers can remotely access financial data at any time
There is no continuous communication with client institutions for financial consulting	There is continuous communication with client institutions for financial consulting
Financial reports are manually prepared and sent	Cloud accounting applications automatically prepare and send financial reports

Source: *Dr. Walid Samir Abdel Azim El-Gebaly, The Impact of Integration between COBIT5 Dimensions and Internal Control Components According to COSO Framework in Reducing the Risks of Cloud Accounting: A Field*

Evidence from the Egyptian Communication Company, Management and Secretarial and Computer Institute, Polar Girls College in Abbasia, Accounting Department, Volume 6, Issue 3, September 2022, p. 139

It is clear from the previous table that cloud accounting is distinguished from traditional accounting by the ability to access the accounting system remotely from anywhere and at any time, thus making it possible to complete work without being physically present at the actual work site. Moreover, transactions and related invoices and documents are processed immediately via the internet without any time loss. This is in addition to the possibility of immediate remote data updates and the ability to continuously communicate online with the program's founders to complete work.

II- Method and Tools: The statistical method interprets the theoretical concept of the potential relationship between the study variables, where our study will rely on:

- Analyzing the dimensions of the study in terms of its strength considering the adopted scale.
- Interpreting the results in light of the strength of the paragraphs.

II-1 - Methodology of the applied study and its steps The descriptive approach that relies on analysis is the closest methodology that can be used to analyze the relationship between the study variables. It should also be mentioned the nature of the study with a single variable, which aims to explore the reality of applying cloud accounting as a new method in the accounting work environment in Algeria, without extending the aim of the applied study to analyze the relationship within regression methods. As for the steps of statistical analysis, they can be presented in a way that explains their association with the general objectives of the study as follows:

1. Analysis of the personal dimensions included in the questionnaire,
2. Descriptive analysis of the dimensions of the independent variable,
3. Econometric analysis of the relationship between the study variables, which includes:

- Analysis of the questionnaire's stability,
- Identifying the nature of the probabilistic distribution of the study variables,
- Analyzing the relationship between independent and dependent variables within an appropriate statistical model
- Econometric analysis of the potential impact between the study variables,
- Reading the results in light of the hypotheses that were adopted,
- Conclusion of the applied chapter,
- Distribution of the questionnaire

Table No. (2-1): Distribution of Questionnaires

Number of questionnaires suitable for analysis	Number of rejected questionnaires	Number of collected questionnaires	Number of distributed questionnaires
47	0	47	47

Source: Prepared by the researcher based on Spss.24

Table of Statement Distribution

Table No. (2-2): Distribution of Questionnaire Statements for the Independent and Dependent Variables

Dimensions	Statement Limits
• Cloud Accounting	From paragraph 1 to 08
• Cloud Accounting	From paragraph 1 to 08
• Cloud Accounting Requirements	From paragraph 1 to 08
• Cloud Accounting Challenges	From paragraph 1 to 08

Source: Prepared by the researcher based on Spss.24

Table No. (2-3): Scale for Determining the Relative Mean and the Relative Importance of the Arithmetic Mean

The Relative Importance of Scores	Mean		Average Weight	Relative Scale Scores
measure	To	From		Used in the Study
Very weak	1.80	1	1	Strongly disagree
weak	2.60	1.81	2	disagree
Meduim	3.40	2.61	3	Neutral
high	4.20	3.41	4	agree
Very high	5.00	4.21	5	Strongly agree

Source: *Prepared by the researcher based on Spss.24*

This table was prepared according to the following standard: Range = Maximum limit - Minimum limit = 5 - 1 = 4; Number of categories = 5 (according to the five-point Likert scale used in the study); Category length = 4 ÷ 5 = 0.8 (Range ÷ Highest value in the scale); This value (0.8) is

added to the lowest value in the scale (the starting point of the scale, which is one), to determine the upper limit of this cell.

II-2 - Presentation of the Descriptive Analysis of Study Variables The descriptive analysis of the study variables explains the levels of relationship of different paragraphs with the underlying dimensions they represent. It is also relied upon to understand the mechanism in comprehending the levels of acceptance of the paragraphs included in the questionnaire. Where our approach comes from a descriptive study.

- Arranging the paragraphs of dimensions,
- Identifying the general direction of the paragraphs,
- In addition to analyzing the significance levels of the paragraphs in relation to the hypothetical median of the adopted scale within its middle range (1.67- 2.33), based on the Student's t-test, which tests the significance of the real median of the sample for each paragraph in relation to the reference of the hypothetical median of the adopted scale (2), which we used to calculate the significance of the paragraphs [(2.33+1.67)/2=2]. Where we will focus on the descriptive analysis of the following dimensions:

Table No. (2-4): Descriptive Analysis of Study Dimensions

Numbers	Dimensions
1	Cloud Accounting
2	Cloud Accounting Requirements
3	Cloud Accounting Challenges

Source: prepared by researcher

II-3 - Internal Consistency Analysis of the Paragraphs

- Reliability: We will rely on Cronbach's alpha coefficient for reliability as it is the most renowned in this type of studies A- Reliability Coefficient for the Cloud Accounting Variable

Table No. (2-5): Total Reliability Coefficient for the Variable of the Reality of Cloud Accounting Implementation in Algerian Institutions

Reliability Statistics	
Cronbach's Alpha	N of Items
0.837	9

Source: Prepared by the researcher based on SPSS.24 B- Reliability Coefficient for the Variable of Advantages and Requirements of Implementing Cloud Accounting

Table No. (2-6): Total Reliability Coefficient for the Variable of Advantages and Requirements of Implementing Cloud Accounting

Reliability Statistics	
Cronbach's Alpha	N of Items
0.889	8

Source: Prepared by the researcher based on SPSS.24 software

C- Reliability Coefficient for the Variable of Challenges and Difficulties in Implementing Cloud Accounting

Table No. (2-7): Total Reliability Coefficient for the Variable of Challenges and Difficulties in Implementing Cloud Accounting

Reliability Statistics	
Cronbach's Alpha	N of Items
0.894	8

Source: Prepared by the researcher based on SPSS.24 software

Table No. (2-8): Reliability Coefficient for the Total of All Variables

Reliability Statistics	
Cronbach's Alpha	N of Items
0.794	3

Source: Prepared by the researcher based on SPSS.24 software

II-4 - Correlation Levels Between the Study Dimensions In this part of the analysis, we will explore the correlation levels between the included paragraphs as a standard method that explains the presumed relationship between various dimensions, which will be adopted to interpret the type and direction of the relationship between different variables relying on Pearson's coefficient. 1- Correlation Coefficient for Study Variables:

Table No. (2-9): Correlation Coefficient Between Paragraphs of the Variable Reality of Cloud Accounting Implementation

Correlations									
	فقرة1	فقرة2							

The total average for the dimension of cloud accounting	Pearson Correlation	.741**	.744**	.595**	.641**	.543**	.685**	.618**	.725**	.711**
	Sig. (1-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000
**. Correlation is significant at the 0.01 level (1-tailed).										
*. Correlation is significant at the 0.05 level (1-tailed).										
Source: Prepared by the researcher based on SPSS.24 software										

From the table above, we notice that the correlation coefficient values between different statements of the first axis and the total score of the axis, based on the responses of users individually, were mostly strong and statistically significant. The values ranged from 0.543 to 0.744, which are considered strong, and they exceeded 0.3, making them reliable for analysis. It's also worth noting that all the statements here were statistically significant as the p-value for all statements was less than the commonly used significance level of 0.05. Therefore, we can say that there is internal consistency between the statements of the first axis.

Table No. (2-10): Correlation Coefficient Between Paragraphs of the Variable of Advantages and Requirements of Implementing Cloud Accounting

Correlations

		1	استخدام 2	3	4	5	6	7	8
ا The total average for the dimension of advantages	Pearson Correlation	.817**	.830**	.812**	.645**	.737**	.721**	.682**	.764**
	Sig. (1-tailed)	.000	.000	.000	.000	.000	.000	.000	.000
**. Correlation is significant at the 0.01 level (1-tailed).									
*. Correlation is significant at the 0.05 level (1-tailed).									
Source: Prepared by the researcher based on SPSS.24 software									

From the table above, we observe that the correlation coefficient values between different statements of the second axis and the total score of the axis, based on the individual responses of users, were mostly strong and statistically significant. The values ranged from 0.645 to 0.830,

which are considered strong, and they exceeded 0.3, making them reliable for analysis. It's also worth noting that all the statements here were statistically significant as the p-value for all statements was less than the commonly used significance level of 0.05. Therefore, we can say that there is internal consistency between the statements of the second axis.

Table No. (2-11): Correlation Coefficient Between Paragraphs of the Variable of Challenges and Difficulties in Implementing Cloud Accounting

Correlations									
		1	2 السحابية	3	4 صعوبة	5	6	7	8
challenges	Pearson Correlation	.636**	.731**	.765**	.892**	.718**	.826**	.786**	.722**
	Sig. (1-tailed)	.000	.000	.000	.000	.000	.000	.000	.000
**. Correlation is significant at the 0.01 level (1-tailed).									
Source: Prepared by the researcher based on SPSS.24 software									

From the table above, we observe that the correlation coefficient values between different statements of the third axis and the total score of the axis, based on the individual responses of users, were mostly strong and statistically significant. The values ranged from 0.636 to 0.892, which are considered strong, and they exceeded 0.3, making them reliable for analysis. It's also worth noting that all the statements here were statistically significant as the p-value for all statements was less than the commonly used significance level of 0.05. Therefore, we can say that there is internal consistency between the statements of the third axis.

2- The Dimension of Cloud Accounting

Table No. (2-12): Correlation Coefficient for the Dimension of Cloud Accounting

Correlations			
The total average for the dimension of challenges	The total average for the	The total average for the cloud accounting dimensionة	

	dimension of advantages			
.409**	**.702****	1	Pearson Correlation	**The total average for the cloud accounting dimension**
0.004	0		Sig. (2-tailed)	
47	47	47	N	
.644**	1	**.702****	Pearson Correlation	**The total average for the advantages dimension**
0		0	Sig. (2-tailed)	
47	47	47	N	
1	**.644****	**.409****	Pearson Correlation	**The total average for the challenges dimension**
	0	0.004	Sig. (2-tailed)	
Source: Prepared by the researcher based on SPSS.24 software				

The correlation levels indicated a strong positive relationship between the dimensions of the study, where we recorded the presence of:

- A strong positive correlation between the dimension of cloud accounting and the advantages of cloud accounting
- A medium positive correlation between cloud accounting and the challenges dimension of practicing cloud accounting
- A relatively strong positive correlation between the challenges dimension of practicing cloud accounting and the advantages dimension of cloud accounting
- Additionally, various results indicated levels of statistical significance, explaining the importance of the relationship between the different variables.

3- Ranking of Overall Dimensions: Under this heading, we will present the ranking of the overall dimensions included in the model, with the results as follows:

Table No. (2-13): Ranking of Overall Dimensions

	Paragraphs of Individual Consideration Dimension	Mean	Standard Deviation	sig	Rank	General Direction of the Curve
1	The total average for the cloud accounting dimension	2.5816	.42734	.000	2	متوسط
2	The total average for the advantages dimension	2.6011	.50043	.002	1	متوسط
3	The total average for the challenges dimension	2.2580	.61591	.000	3	متوسط

Source: Prepared by the researcher based on SPSS.24 software

The correlation levels showed a strong positive relationship between the study dimensions, where we observed:

- A strong positive correlation between cloud accounting dimension and its advantages.
- A moderate positive correlation between cloud accounting and the challenges of practicing cloud accounting.
- A relatively strong positive correlation between the challenges of practicing cloud accounting and its advantages.
- The various results also showed significant levels indicating the importance of the relationship between the different variables.

3- Ranking of Total Dimensions: In this section, we will display the ranking of the total dimensions included in the model, with the results as follows: Table No. (2-13): Ranking of Total Dimensions

II-5 - Analysis and Discussion In this part, the validity of the hypotheses will be confirmed or denied, and the results of the field study will be analyzed and discussed.

II-5-1 - Analysis and Discussion of the First and Second Hypotheses The first hypothesis will be discussed based on the obtained results:

- According to the first statement, the majority of individuals believed that cloud accounting is better than traditional accounting from an academic perspective.
- For the second statement, the direction of individual responses was towards agreement, indicating the ease of expanding applications when using cloud accounting.

- Regarding the third statement, responses were towards agreement, suggesting that using cloud accounting can save energy costs for the management.

- For the fourth statement, the majority viewed that cloud accounting information is available to the client anytime and anywhere.

- For the fifth statement, responses were towards agreement regarding cloud accounting's ability to eliminate IT management problems.

- Regarding the sixth statement, responses indicated agreement, suggesting that cloud accounting allows for smooth and rapid information exchange.

- For the seventh statement, the majority saw the goal of using cloud accounting to reduce capital expenses.

- Regarding the eighth statement, responses were towards agreement, indicating that adopting cloud accounting requires trained human resources within the institution.

- For the ninth statement, responses were towards agreement, suggesting that adopting cloud technology is influenced by the availability of skilled labor within the institution.

II-5-2 - Analysis and Discussion of the Third Hypothesis The second hypothesis will be discussed based on the obtained results:

- According to the first statement, the majority of individuals saw that the management aims to use cloud accounting to increase efficiency, manage time, and speed up completion.

- For the second statement, the direction of responses was towards agreement, indicating the use of applications and software without installing them on computers through the cloud.

- Regarding the third statement, responses were towards agreement, suggesting that cloud computing protects the confidentiality of transmitted information.

- For the fourth statement, the majority viewed that cloud computing ensures that information services are not used for personal gains.

- For the fifth statement, responses were towards agreement, indicating that users access data and information as a public commodity without or with limited fees.

- Regarding the sixth statement, responses indicated agreement on the need for mandatory standards for cloud computing services users and providers to undergo technical and accounting training.

- For the seventh statement, the majority saw the automatic update of accounting software versions available on the cloud as beneficial.

- Regarding the eighth statement, responses were towards agreement, highlighting the need for high-security control against network attacks.

II-5-3 - Analysis and Discussion of the Fourth Hypothesis The third hypothesis will be discussed based on the obtained results:

- According to the first statement, the majority of individuals believed that using cloud accounting makes financial statements and reports more prone to errors, distorting their image.

- For the second statement, the direction of responses was towards agreement, highlighting fears of data theft as a significant barrier to adopting cloud accounting.

- Regarding the third statement, responses were towards agreement, suggesting that trust and reliance on cloud data are among the biggest challenges to its implementation.

- For the fourth statement, the majority found it difficult to rely on results from the cloud accounting system due to the ambiguity of involved parties.

- For the fifth statement, responses were towards agreement, indicating that cloud computing has negative effects on risks associated with data entry.

- Regarding the sixth statement, responses indicated agreement on fears of inability to protect the database from hacking and sabotage.

- For the seventh statement, the majority believed that common risks in developing countries related to slow internet could increase the risks and difficulties of delayed accounting operations and information delivery.

- For the eighth statement, responses were towards agreement, indicating the lack of laws or standards to protect the privacy of accounting data and information and ensure that no unauthorized person can access it.

Conclusion

- **Study Results:**

- There is awareness of the need for cloud accounting in Algerian economic institutions due to the role it plays in reducing the need for traditional accounting work.

- Efficiency Increase: Cloud accounting facilitates financial management processes, automates tasks, and eliminates manual data entry, leading to improved efficiency in managing financial transactions, report preparation, and financial analysis.

- Cost Savings: Cloud accounting eliminates the need for costly on-premises infrastructure and computer software licenses. Companies can reduce hardware and software costs as well as expenses related to their maintenance and upgrade.

Recommendations:

1. Infrastructure Development: By investing in the development of a strong and reliable internet infrastructure to ensure stable and high-speed connection, which is crucial for cloud-based accounting systems.

2. Data Security: By implementing strict security measures to protect sensitive financial information stored in the cloud. This includes the use of encryption, access controls, and regular data backups.

3. Legal and Regulatory Compliance: By keeping up-to-date with the latest local laws and regulations related to data privacy, financial reporting, and cloud computing. Ensuring that the cloud accounting solution complies with these requirements.

4. Training and Education: Offering comprehensive training and education programs for accountants, financial professionals, and business owners to enhance their understanding and skills in using cloud accounting platforms effectively.

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- **Appendix:**

Appendix No. (01): Reliability Coefficient Related to the Reality and Requirements of Implementing Cloud Accounting

Reliability Statistics	
Cronbach's Alpha	N of Items
.837	9

Appendix No. (02): Detailed Reliability Coefficient for the Variable of Reality and Requirements of Implementing Cloud Accounting

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Cloud accounting is better than traditional accounting from an academic perspective	20.5532	11.600	.652	**.809**

Cloud accounting can be applied due to the ease of expanding applications when used.	20.5106	11.994	.670	**.810**
Using cloud accounting enables the management of the institution to save on electricity costs.	20.5532	12.426	.481	**.827**
Cloud accounting information is available to the customer at any time and anywhere.	20.6383	12.019	.524	**.823**
Cloud accounting eliminates problems related to information technology management.	20.9362	12.148	.376	**.844**
Through the use of cloud accounting, the process of exchanging information can be smooth and fast.	20.7872	11.649	.571	**.818**
The aim of the institution to use cloud accounting is to reduce capital expenses.	20.6596	12.012	.488	**.827**
Adopting cloud accounting requires the training of qualified human resources within the institution.organization	20.6596	11.447	.622	**.812**
The adoption of cloud computing technology is influenced by the availability of skilled labor within the institution.	20.5745	12.032	.626	**.813**

- **Appendix No. (03): Total Reliability Coefficient for the Variable of Advantages and Requirements of Implementing Cloud Accounting in Algerian Institutions**

Reliability Statistics	
Cronbach's Alpha	N of Items
.889	8

- **Appendix No. (04): Detailed Reliability Coefficient for the Variable of Advantages and Requirements of Implementing Cloud Accounting in Algerian Institutions**

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted

The management of the institution aims to use cloud accounting to increase efficiency.	18.0638	12.626	.760	.867
The use of applications and software without having to install them on devices.	18.3191	11.613	.756	.865
Cloud computing ensures the confidentiality of information transmitted through it.	18.2340	12.053	.739	.867
Cloud computing guarantees that information services are not used for personal gain.	18.1915	13.115	.535	.886
Users receive data and information as a public commodity.	18.2979	12.170	.632	.878
Implementing cloud computing requires the development of standards.	18.1915	12.723	.628	.878
Automatic updates of software versions available on the cloud.	18.1915	13.071	.586	.881
Providing high-security oversight to protect against network attacks.	18.1702	12.362	.679	.873

- **Appendix No. (05): Total Reliability Coefficient for the Variable of Challenges and Difficulties of Implementing Cloud Accounting in Algerian Institutions**

Reliability Statistics	
Cronbach's Alpha	N of Items
.894	8

- **Appendix No. (06): Detailed Reliability Coefficient for the Variable of Challenges and Difficulties of Implementing Cloud Accounting in Algerian Institutions**

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
When using cloud accounting, financial statements and reports become more prone to errors, which can tarnish their image.	16.0213	19.630	.514	**.896**
Fear of data theft from open databases is one of the most significant obstacles to adopting cloud accounting.	15.8298	19.231	.642	**.884**
Trust and reliance on cloud data are among the biggest challenges to its implementation.	15.6809	18.918	.683	**.880**
Difficulty relying on the results provided by the cloud accounting system due to the ambiguity of the involved parties.	15.9362	17.713	.849	**.863**
Cloud computing has negative effects on the risks associated with data entry.	16.0426	18.868	.614	**.887**
Fear of inability to protect the database from hacking, sabotage, and piracy.	15.6383	18.584	.765	**.872**
The common risk in developing countries related to slow internet leads to increased risks and difficulties in delaying accounting operations.	15.7447	18.499	.706	**.878**
The absence of laws to protect the privacy of accounting data and	15.5532	19.513	.636	**.884**

information and ensure that no one can access them.				

- **Appendix No. (07): Reliability Coefficient for the Total of All Variables**

Reliability Statistics	
Cronbach's Alpha	N of Items
.794	3

- **Appendix No. (08): Correlation Coefficient Between Paragraphs of the First Variable**

Correlations										
		فقرة1	فقرة2							
The overall average for the dimension of cloud accounting	Pearson Correlation	.741**	.744**	.595**	.641**	.543**	.685**	.618**	.725**	.711**
	Sig. (1-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000
**. Correlation is significant at the 0.01 level (1-tailed).										
*. Correlation is significant at the 0.05 level (1-tailed).										

- **Appendix No. (09): Correlation Coefficient Between Paragraphs of the Second Variable**

Correlations									
		1	Use 2	3	4	5	6	7	8
The overall average for the dimension of benefits.	Pearson Correlation	.817**	.830**	.812**	.645**	.737**	.721**	.682**	.764**
	Sig. (1-tailed)	.000	.000	.000	.000	.000	.000	.000	.000
**. Correlation is significant at the 0.01 level (1-tailed).									
*. Correlation is significant at the 0.05 level (1-tailed).									

- **Appendix No. (10): Correlation Coefficient Between Paragraphs of the Third Variable**

Correlations									
		1	cloudy 2	3	difficult 4	5	6	7	8
Challenges	Pearson Correlation	.636**	.731**	.765**	.892**	.718**	.826**	.786**	.722**
	Sig. (1-tailed)	.000	.000	.000	.000	.000	.000	.000	.000
**. Correlation is significant at the 0.01 level (1-tailed).									

- **Appendix No. (11): The Dimension of Cloud Accounting**

Descriptive Statistics				
	N	Mean	Std. Deviation	Variance
• Cloud accounting is better than traditional accounting from an academic perspective.	47	2.6809	.62923	.396
• Cloud accounting can be applied due to the ease of expanding applications when used.	47	2.7234	.53981	.291
• By using cloud accounting, the organization's management achieves savings in electricity costs.	47	2.6809	.59368	.352
• Cloud accounting information is available to customers anytime and anywhere.	47	2.5957	.64806	.420
	47	2.2979	.77781	.605

• Cloud accounting eliminates problems related to information technology management.				
Through the use of cloud accounting, information exchange can be smooth and fast.	47	2.4468	.68552	.470
The organization aims to use cloud accounting to reduce capital expenses.	47	2.5745	.68349	.467
Adopting cloud accounting requires training qualified human resources within the organization.	47	2.5745	.68349	.467
The adoption of cloud computing technology is influenced by the availability of workforce expertise within the organization.	47	2.6596	.56247	.316
The overall average for the dimension of cloud accounting.	47	2.5816	.42734	.183
Valid N (listwise)	47			

- **Appendix No. (12): The Dimension of Requirements and Advantages**

Descriptive Statistics				
	N	Mean	Std. Deviation	Variance
• The management of the organization seeks to use cloud accounting to increase efficiency.	47	2.7447	.56982	.325
• Using applications and software without installing them on devices.	47	2.4894	.74811	.560

• Cloud computing ensures the confidentiality of transmitted information during its transfer.	47	2.5745	.68349	.467
• Cloud computing ensures that the information service is not used.	47	2.6170	.64448	.415
• They obtain information and data as a public commodity.	47	2.5106	.74811	.560
• Implementing cloud computing requires the establishment of standards.	47	2.6170	.64448	.415
• Automatic updates for versions of computer programs available on the cloud.	47	2.6170	.60982	.372
Providing high-security control against network attacks.	47	2.6383	.67326	.453
The overall average for the benefits dimension.	47	2.6011	.50043	.250
Valid N (listwise)	47			

- **Appendix No. (13): Related to the Challenges of Practicing Cloud Accounting in the Algerian Work Environment**

Descriptive Statistics				
	N	Mean	Std. Deviation	Variance

• When using cloud accounting, financial statements and reports become more prone to errors, which can tarnish their image.	47	2.0426	.85865	.737
• Fear of data theft from open databases is one of the most significant obstacles to adopting cloud accounting.	47	2.2340	.78610	.618
• Trust and reliance on cloud data are among the biggest challenges to its implementation.	47	2.3830	.79545	.633
• Difficulty relying on the results provided by the cloud accounting system due to the ambiguity of the involved parties.	47	2.1277	.82402	.679
• Cloud computing has negative effects on the risks associated with data entry.	47	2.0213	.87201	.760
• Fear of inability to protect the database from hacking, sabotage, and piracy.	47	2.4255	.77304	.598
• The common risk in developing countries related to slow internet leads to increased risks and difficulties in delaying accounting operations.	47	2.3191	.83683	.700
• The absence of laws to protect the privacy of accounting data and information and ensure that no one can access them.	47	2.5106	.74811	.560
• The total average for the challenges dimension.	47	2.2580	.61591	.379
Valid N (listwise)	47			

- **Appendix No. (14): Ranking of Study Dimensions**

Descriptive Statistics				
	N	Mean	Std. Deviation	Variance

The total average for the cloud accounting dimension	47	2.5816	.42734	.183
The total average for the advantages dimension	47	2.6011	.50043	.250
The total average for the challenges dimension	47	2.2580	.61591	.379
Valid N (listwise)	47			