



**NEAR EAST UNIVERSITY**  
**INSTITUTE OF GRADUATE STUDIES**  
**DEPARTMENT OF BANKING AND ACCOUNTING**

**THE IMPACT OF THE USE OF CLOUD ACCOUNTING SYSTEMS ON  
THE QUALITY OF ACCOUNTING INFORMATION AT SME IN ERBIL**

**M.Sc. THESIS**

**Sangar Qader Hamed LASHKRI**

**Nicosia**

**January, 2022**

**Sangar Qader Hamed  
LASHKRI**

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**MASTER THESIS**

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**Sangar Qader Hamed LASHKRI**

**Supervisor**  
**Assoc. Prof. Dr. Aliya Işıksal**

**Nicosia**

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## Approval

We certify that we have read the thesis submitted by Sangar Qader Hamed LASHKRI titled “**THE IMPACT OF THE USE OF CLOUD ACCOUNTING SYSTEMS ON THE QUALITY OF ACCOUNTING INFORMATION AT SME IN ERBIL**” and that in our combined opinion it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Banking and Accounting.

Examining Committee	Name-Surname	Signature
Head of the Committee:	Assoc. Prof. Dr. Ahmet Ertugan	.....
Supervisor:	Assoc. Prof. Dr. Aliya Işıksal	.....
Committee Member:	Dr. Ala Fathi Assi	.....

Approved by the Head of the Department

...../...../2022

.....  
Assoc. Prof. Dr. Aliya Işıksal  
Head of Department

Approved by the Institute of Graduate Studies

...../...../2022

Prof. Dr. Kemal Hüsnü Can Başer  
Head of the Institute

## **Declaration**

I hereby declare that all information, documents, analysis and results in this thesis have been collected and presented according to the academic rules and ethical guidelines of Institute of Graduate Studies, Near East University. I also declare that as required by these rules and conduct, I have fully cited and referenced information and data that are not original to this study.

Sangar Qader Hamad LASHKRI

31/01/2022

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## **Abstract**

### **The Impact of the Use of Cloud Accounting Systems on The Quality of Accounting Information at Sme in Erbil**

**Sangar Qader Hamad LASHKRI**

**M.Sc. Department of Banking and Accounting,**

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In recent times, businesses have unified standards across international boundaries and accounting has, with this, technical competency is crucial in this regard. With its inbuilt facilities and flexibility, there is no limit to cloud computing-based accounting. Most of the previous researches has addressed a variety of issues including but not limited to cloud sourcing and implementation in business organizations. It lacks proper acknowledgment when it comes to the integrations of online cloud-based data systems on business process outsourcing (BPO). The purpose of this research is to find the association between the use of cloud accounting and improve accounting information management. In addition, to delve into the level of knowledge and adoption of cloud-based accounting between the chartered accountants. This study is concentrated on the use of the cloud accounting system in SMEs and what are the benefits of adopting it. For this, a structured questionnaire was designed and distributed accordingly. The results showed the impact of the cloud accounting system on the data control, managing users, limit access of authorities, advantages over the offline systems and the role of the cloud accounting system in providing accounting information according to the users.

**Keywords:** cloud accounting, data control, accounting information systems, information technology in accounting. cloud computing.

## Table of Contents

Approval.....	1
Declaration .....	2
Acknowledgements .....	3
Abstract .....	4
Table of Contents .....	5
List of Tables .....	8
List of Figures .....	9
List of Abbreviations .....	10

### CHAPTER I

Introduction.....	11
Research Problem.....	13
The Objective of the Study .....	13
The Scope of the Study .....	14
Limitation.....	14
Research Questions .....	15
Concepts and Theories .....	16
The Hypothesis of the Study .....	16
Structure of the Research .....	18

### CHAPTER II

Literature Review.....	19
Cloud Accounting System .....	19
Cloud Accounting System Advantages.....	20
Impact of Cloud Accounting in Business.....	22
Concerns and Dangers.....	23
Brought Down Costs .....	23

Expanded Usefulness .....	24
Cloud Accounting Pros and Cons .....	25
Theoretical framework of Cloud Computing Deploy Models .....	26
Cloud Accounting Framework .....	29
Accounting Information System (AIS) and Models .....	32
Accounting Information Technology .....	38
The Influence of Information Technology on Accounting .....	39
Environmental Examining .....	40
Improved Accuracy .....	40
Faster Processing.....	41
Business Process Management .....	41
Conclusion .....	41
<b>CHAPTER III</b>	
Methods and the Research design .....	43
Introduction .....	43
Research Design.....	43
Research Instrument.....	44
Data Collection.....	44
Population and Sampling Methods .....	45
Statistical Analysis .....	45
Ethical Considerations .....	46
Conclusion .....	46
<b>CHAPTER IV</b>	
Data Analysis and Presentation.....	47
Introduction .....	47
Sampling and Setting .....	47
Data Analysis .....	47
Demographic Overview .....	47



Cloud Accounting Systems on Collecting Accounting Data Overview .....	49
The Influence of Cloud Accounting Systems on Managing Users Overview ...	51
Benefits and Risks of Using Cloud Accounting Overview.....	52
Increase of Quality of Accounting Information Overview .....	55
P-Value Test and Discussion .....	56
Cronbach's Alpha.....	59
Analysis of Variance (ANOVA).....	60
Reliability Test .....	62
Regression Results .....	63
Conceptual Model .....	64
<b>CHAPTER V</b>	
Conclusions and Recommendations .....	66
Conclusions .....	66
Recommendations .....	67
Suggestion for Future Studies .....	68
REFERENCES.....	69
APPENDICES .....	81

## List of Tables

	Page
<b>Table 1.</b> Demographic analysis .....	48
<b>Table 2.</b> Results of average and standard deviation of the effect of cloud accounting systems on collecting, organizing, and analysing accounting data.....	49
<b>Table 3.</b> Results of average and standard deviation the influence of cloud accounting systems on managing users and their authority limitations .....	51
<b>Table 4.</b> Results of average and standard deviation the influence of cloud accounting systems on benefits and potential risks of cloud accounting .....	53
<b>Table 5.</b> Results of average and standard deviation showing the impact of increasing the quality of accounting information.....	55
<b>Table 6.</b> Results showing there is relationship between cloud accounting systems and collecting accounting data.....	57
<b>Table 7.</b> Results showing the Impact of cloud accounting systems on managing users and their authority limitations .....	57
<b>Table 8.</b> Results showing the benefits and risks of using cloud accounting against the influence of cloud accounting system .....	58
<b>Table 9.</b> Results showing the impact of increasing the quality of accounting information against cloud accounting systems. ....	59
<b>Table 10.</b> Cronbach's alpha .....	60
<b>Table 11.</b> Descriptive statistics .....	60
<b>Table 12.</b> Correlation coefficients .....	61
<b>Table 13.</b> Analysis of variance .....	61
<b>Table 14.</b> Analysis of variance (reliability) .....	62
<b>Table 15.</b> Analysis of variance (reliability) .....	63
<b>Table 16.</b> Regression results; usage as independent variable .....	63
<b>Table 17.</b> Summary of the hypotheses results .....	65

## List of Figures

	<b>Page</b>
<b>Figure 1.</b> Cloud accounting impact in business (Ace Cloud Hosting Editor, 2020).....	22
<b>Figure 2.</b> Figure Reference model of resource accounting system. ....	34
<b>Figure 3.</b> Accounting prospect in information technology (Pranjal Jain, 2021).....	39
<b>Figure 4.</b> The flowchart of the firm's questions.....	50
<b>Figure 5.</b> The flowchart of the total score of the above ten firm's questions .....	52
<b>Figure 6.</b> The flowchart of benefits and potential risks of cloud accounting.....	54
<b>Figure 7.</b> The flowchart showing the impact of increasing the quality of accounting information .....	56
<b>Figure 8.</b> Conceptual framework.....	64

## **List of Abbreviations**

<b>AIS:</b>	Accounting information System
<b>BPM:</b>	Business Process Management
<b>CRM:</b>	Customer Relationship Management
<b>ERP:</b>	Enterprise Resource Planning
<b>IFRS:</b>	International financial report standard
<b>IT:</b>	Information Technology
<b>PaaS:</b>	Platform as a Service
<b>SaaS:</b>	Software as a Service
<b>SD:</b>	Standard Deviation
<b>SME:</b>	Small and Medium Enterprise

## CHAPTER I

### Introduction

Accounting as an information system strives, to provide different people with different shapes of useful information to meet their different demands. Change to a cloud is a new and innovative solution that can help improve the quality of accounting data in medium-sized enterprise. The importance of cloud accounting system can be easily observed in all of the stages of accounting process from inputting data, processing and the output as well. Being one of most modern trends in the IT world, the Cloud-based technology enables to get more advantages using the newest technology. This topic is chosen as cloud accounting system is believed to fill the gaps and overcome many shortcomings that present in the whole accounting process. At the same time, it aims to make use of the surrounding circumstances to improve the quality and quantity of information and a proper delivery mechanism to the people dealing with it (Benbow, 2010). This relationship continuously has evolved and widened during the last century because of the emergent of networking and decision-support systems. It has taken a wider dimension with more flexibility, with this, it is defined as the computerization of accounting. Conclusively, many accounting programs emerged and gained popularity in business shops and it was easily accessed by interested individuals at a reasonable cost (Yau-yeung, 2017; Raguseo, 2018).

A Cloud accounting system is a modern concept processing accounting data of information distribution systems and applications in the framework of the concept cloud without needing for the users to have information physical position and system structuring (Mihalache, 2011). A cloud-based accounting solution enables the possibility to provide numerous and complex demands and activities using an integrated online system and, in turn, reduces the cost of labor that is necessary for accounting sections (Dimitriu and Matei, 2014; Salijeni, et al., 2019). The Rodney and Proville (2009) paper characterize Cloud accounting as "An enormous scope dispersed figuring worldview that is driven and capacity by economies of scale, in which a pool of preoccupied, virtualized, progressively versatile, oversaw information, stockpiling, stages, and administration is followed through on-request to the outer client over the Internet". The cloud accounting worldview affects the nature of information (Vogels,

2009). Admittance to the internet accounting projects and information are controlled through client login access, rather than the specific area of the information records.

Accounting of computing resources is a whole process that is required to calculate and update transactions and it is a resource to provide information for a well-defined period of time. The process of accounting computing includes collecting metering data and these systems have spread worldwide (Mihoob, 2015).

Cloud accounting system gives the most effective way in ascertaining pay rates and finance, wages and work, installment portions, the portion of social and assessment certifications, and credits and compensation advance to representatives in organizations. Additionally, capacity to record a wide range of costs depending on the standard grouping, observing stock and money with all exchanges both side outpouring and inflow, capacity to record and give livelihoods subtleties and fixed resources with yearly deterioration for each decent resources independently, and giving income proclamation, checking the equilibriums of record receivable and creditor liability, separating the month to month and last inspecting balances, the company's last adjusts, other help online media stages, overseeing projects, messaging, web improvement, stockpiling of information, accounting, document facilitating and taking notes. It additionally gives making deals solicitations in an extraordinary strategy and sending the reports through email to the client. The advantages of internet figuring incorporate creating economies of scale by forgoing the past cost for foundations procurement, in the long run, prompts cost-saving.

The contributions in area of accounting for the planned future researches on this topic, is to support generally the development of a theory in the field of accounting. Potential researchers could benefit from these results to build their researches and evolve the knowledge on holding decisions. Since this study is more giving attention to small and medium enterprise businesses in Erbil, Iraq, the time for the results to appear delay until the end of every output report. On the other hand, the losses and the profits could be known faster and easier. For the external and Internal individuals exposed to the system, data collection maybe more simple to reach the activity of the employees in reports, to evaluate the financial state of an enterprise, the balance sheet can describe the latest assets, liability, fixed assets, and capital for a limited and specified period of time, Cash flow statement quality gives all the inflow and outflow of the cash support financial administrations. From a safeguarding point of view, there

could be controlling of the transaction flow of data and reach limitations depending on to the needs of the enterprise. results are constantly taking different shapes such as charts, reports, images that help to understand the data easier and analyze easier as well. The use of accounting information systems at the firms may lead to enhancing decision-making by administrative individuals, the internal control and enhance the quality of information and participate in the process of the company's transactions. These huge developments and other positive impacts of the cloud accounting systems confirms the importance of decisions that have been made by small and medium enterprise in Erbil Iraq.

### **Research Problem**

Many SMEs are still not using this system in managing accounting process and to increase productivity (Maleki, 2014). Improving performance for the firms must be based an operation that called "performance cycle". The measurement and evaluating of accounting performance in any firm should be in the very beginning (Yau Yeung, 2017). In traditional ways of accounting systems, the duration for the data collection, processing an output is time consuming and has huge effect on the firm's productivity.

The non-cloud based systems are not capable of providing newly demanded information because they are fixed and already established systems, in case of new request, it has to be provided by service provider. The traditional systems cannot be updated on daily bases which is mostly needed in new business market. Accounting information are different in terms of user management, limitation, and access control for collecting, analyzing, organizing accounting data. In non-cloud based systems managing the accesses and responsibility are limited and cannot be handled practically. Firms and accountant see cloud accounting as threat to adopt as it is for sharing financial data throughout the firm or external users, which is sensitive in nature.

### **The Objective of the Study**

In this study, the main objective of the study is to investigate the effect of using cloud accounting on the quality of accounting information to achieve this goal, the research's main objectives are as follows:

- Studying the general framework for applying cloud accounting systems and its pros and cons, specifically on the accounting circle.

- Studying the impact of using cloud accounting systems on the quality of accounting information.
- Identify key benefits and risks when using cloud accounting systems compared to offline accounting systems.
- To determine the influence of cloud accounting on the financial performance of small and medium-sized enterprises.
- To come up with clear planning ideas for the firms to decide between an online or offline accounting system.

### **The Scope of the Study**

In terms of scope, this study aims primarily to study the practice and the use of cloud accounting to manage the internal accounting process by the accountant of SME. The cloud accounting management systems are internally focused on organizing data, which implies it doesn't associate straightforwardly with the customers, and that the accounting firm embraces the training system management as the last client thus we want to assess the effect of these practices in the SME in Erbil, Iraq. We will discuss the difference between this research with previous researches in the literature review chapter to find the gaps and recommend as necessary. They likewise require capacity limit, Internet transfer speed, and a particular IT staff to design it, introduce and refresh the accounting programming. Conventional applications for monetary accounting are at times complex and excessively costly, particularly for a little or new company. After the changes made by organizations to use computerized systems in accounting which has become a crucial component of the Enterprise Resources Planning system, it has then become impossible to acknowledge such systems and their performance.

### **Limitation**

There are many limitations to the study because this research is studying small and medium-size enterprise businesses in the sector of trading and wholesale firms. Which mean no data from large institutions included. On the other hand, the traditional approach from the business owner is not supportive in adopting any new system that may cause change in the flow of the routine transactions which in most cases is challenging. One of the other limitations is the absence of famous service providers in Iraq where the study conducted and very few of them support the client language and



majority of the firms are familiar with the use of the cloud accounting systems due to is freshness in the field. other limitations included subscription payment issues, unavailability of online transactions and unfamiliarity with the service providers. There are a lot of responsibilities for the accounting management. The study is limited to four broad categories. This lead to more broad and detailed generalizations and have limited the research, the study drew its focus on a small and intermediate enterprises which are based in Erbil, Iraq that lead to generalizations of the findings and more limitations.

### **Research Questions**

To register an answer concerning the main questions of the research, the research addresses these questions through a case study approach. Data is predominantly collected through a form questionnaire of employees of finance and accounting departments in SME, focusing on individual experiences as firms have transitioned from offline systems to cloud accounting systems (Benbow, 2010).

Numerous associations have embraced various sorts of cloud computing applications, for example, email and report sharing within their firms (Dimitriu, 2015). Cloud accounting systems are different in terms of user management, limitation, and access control for collecting, analyzing, organizing accounting data, it is directly affecting the accounting circle and it can be an obvious threat to firms and accountants to adopt cloud accounting as it is for sharing financial data throughout the firm or external users, which is sensitive in nature

The research intended questions that need to be answered is the following:

- 1- What is the effect of cloud accounting systems on collecting, organizing, and analyzing accounting data?
- 2- What is the influence of cloud accounting systems on managing users and their authority?
- 3- What are the benefits and risks when using cloud accounting system compared to offline system?
- 4- What is the impact of the cloud on providing and increasing the quality of accounting information in terms of time and zero error accounting reports?

## **Concepts and Theories**

A Cloud accounting system is a set of software that provides data analysis stored in a database. These tools help individuals analyze the different areas of multidimensional data including; sales purchases, transfer payments, paid and received, and other trading transactions. Online accounting is a model to establish on-demand access to mutually shared data and resource with less price, in a convenient manner, and with minimal interaction with the service provider. Within the last decade, cloud accounting has developed from a promising and appealing technology to an outstanding replacement for accomplishing IT needs.

Averina et al. (2016) argue that online Cloud accounting systems emerged as ways of filling the gap of inefficiencies and incompleteness of the previous accounting system. This has defined the need for developing handling and implementing new systems able of obtaining business data and enriching information provided to a huge number of individuals representing various stakeholder parties for improved performance from an organizational success perspective and sustained business competitiveness.

Previous studies have addressed different issues including online sourcing and implementation in organizations. There is a gap in understanding the implications of cloud-based information systems for business operations outsourcing. This practice of accounting has been enforced significantly by the rise of accounting software tools with the aid of cloud technologies, which are the greatest technological invention lately. Such as other parts of the business, accounting has accepted online computing solutions too. This approach gives easy and specific information and an overview of business for all equities. Even though cloud accounting is expanding every day, many business experts and professionals are worried about what it is, what are its benefits and how will it change the prospect of accounting.

## **The Hypothesis of the Study**

The study generates much importance as it is considered by researchers as the system that studies the effectiveness of the integrated accounting information system in the Enterprise Resources Planning accounting system. Testing the following proposed hypotheses below assist in validating this work;

- **Hypothesis 1:** Cloud accounting system has a positive impact on the quality controlled data flow in an accounting report in Erbil SMEs.
- **Hypothesis 2:** Cloud accounting system has a positive impact on the managing users and their authority limitations on the cloud accounting system report in Erbil SMEs.
- **Hypothesis 3:** Cloud accounting system has relationship with risks and benefits when compared to an offline system in Erbil SMEs.
- **Hypothesis 4:** Cloud accounting system has a positive impact on the quality of Accounting report and decreasing errors in Erbil SMEs.

Hypothesis 1 implies that cloud accounting system can increase the accuracy of data entry, storage and dissemination. Hypothesis 2 attempts to link the cloud accounting system and users' management. For example, a manager may have access to the Purchase price, while other employees at the lower rung may not. Hypothesis 3 tries to show that using cloud accounting system comes with risks such as cyber-attack and service failure from the provider and benefits like managing remotely, work from distance and availability 24/7. While the offline doesn't come with these risks nor benefits. Hypothesis 4 is about the relationship between cloud accounting system and quality of Accounting Information. It is expected that the cloud Accounting system is capable of reducing or eliminating the errors that common in Accounting report.

Based on the above-mentioned hypotheses, the variables below used for its analysis.

#### **I. Independent variable**

- Cloud accounting system.

#### **II. Dependent variable**

- Staff performance working of the output data.
- Managing user access (Usage)
- Speed of the Accounting Report.
- Quality of accounting report.

## **Structure of the Research**

The structure of the research is made compiling to achieve the objectives of the research and to verify its hypotheses, the study is organized into five chapters. The structure of the study is as follows;

- The first chapter of the research consists of the introduction, research problem, the objectives of the study, scope of the study, limitation, research questions, concepts and theories, hypotheses of the study and structure of the research.
- The second chapter of the research consists of the literature review, cloud accounting system, cloud accounting system advantages, impact of cloud accounting in business, concerns and dangers, brought down costs, expanded usefulness, cloud accounting pros and cons, theoretical framework of cloud computing deploy models, cloud accounting framework, accounting information system (AIS) and models, accounting information technology, the influence of information technology on accounting, environmental examining, improved accuracy, faster processing, business process management and conclusion.
- The third chapter of the research consists of the methods and the research design, introduction, research design, data collection, population and sampling methods, statistical analysis, ethical consideration and conclusion of the chapter.
- The fourth chapter of the research consists of the data analysis and presentation introduction of the chapter, sampling and setting, data analysis, demographic overview, results of standard division collection accounting data overview, cloud accounting systems on managing users overview, benefits and risks of using cloud accounting overview, increase of quality of accounting information overview, P-value among four sections and conceptual model.
- Chapter four: conclusions, recommendations and suggestions for future study.

## CHAPTER II

### Literature Review

This chapter will elaborately consider reviewing detailed insights about the underlying study, concepts, and theoretical underpinnings. The chapter also focuses on viewing different published papers and authors who are immense in the field of cloud accounting systems and allied aspects of the research questions. There are key areas concerning these studies about what outcome was explored and failed to address hence this chapter pursues to layout related theoretical and empirical framework necessary in understanding the roles of cloud accounting systems and how these systems help to improve performance of accounting circle.

#### Cloud Accounting System

Cloud accounting system has given numerous uses to the firms and is expected to give more, (Ali and Thakur, 2017) in previous researches does not focus on the impact of using cloud accounting on the quality of accounting data. Most of the responses were implying they are aware of the concept of cloud accounting software and have used them at least once in their lifetime as an online storage service, they show that define a cloud-based accounting system as a way to run business accounts entirely online and attained such as service, maintain a great level of professional performance of cloud accounting system but performed on servers and accessible by users via their web browsers (Hussain, & Dimililer, 2021).

(Ali and Thakur, 2017) has stated that in their study which consisted of 140 participants Accountants in the private sector have benefited from modern technologies to help them to manage their tasks with good accuracy. These rapid technological developments have contributed to the development of services provided to its users in the business and accounting world in particular. Cloud-based technology is one of the most modern trends in the IT world of accounting, and enable to get more advantages using the newest technology, most of the responses were implying they are aware of the concept of cloud accounting software and have used them at least once in their lifetime as an online storage service, and few of them have used the software more than once as an online accounting service (Khanom, 2017; Saabith, et al., 2016).

The service has provided them location independence which means access to the required data everywhere. The younger generation is more aware of the online cloud accounting system. And amazingly all of the participants were very welcoming to expand their knowledge concerning the modern era of accounting to reinforce their performance. The small group who hasn't started to use the cloud system were worried about the security and controlling accounting data (Widuri, et al., 2016; Najafabadi, et al., 2015).

Cloud accounting requires access to the accounting database and software through an internet browser. Software is responded based on subscription and data is stored in a remote server (Kolodner, et al., 2011). This is different from the previous traditional accounting system including buying offline software or setup installation in a workstation or local provider. Access to cloud accounting applications and data is controlled by access of the user to login access instead of the physical position of the files. This means that data sharing is easier for physically inter-data from a computer to the other (Onyali, 2016).

### **Cloud Accounting System Advantages**

Every new technology has its pros and cons, Cloud accounting systems comes with great benefits that subject to many types of research and academic articles where all aspects of deployment of such system were analyzed, organized, and evaluated, prior studies have identified many advantages that provide benefits or introduce concerns in using a modern web-based application. (Benbow, 2010).

(Christauskas and Miseviciene, 2012), identified key advantages of cloud accounting system bring able to be put, is shown as follows

- Access from everywhere: Users and managers can access, and update information wherever they are, in a state of having to run back the office Accounting data and business output results can be acquired from browsers or a mobile device. This is a daily request currently we cannot manage with desktop accounting systems.
- Better security: Cloud accounting software is managed from a data provider center presenting multiple security systems to protect accounting data always data service has a greater security characteristic more than small enterprises.

- Installation or updating is not a requirement: Server Providers of cloud accounting protect software and automatically will be updated.
- Automated backings: Cloud provider undertakes responsibility for offering real-time backup of data which results in low data loss. Recording data is generally stored in more than one data center, which geographically exists in multiple places.
- Platform freedom: No need to prefer Windows PC or Mac, there is no request for your preference, Adding new software is very simple ways, Internet Explorer or Firefox Chrome, all of these flexible the application of cloud accounting. The web browser is all needed to access accounting, all users will receive the same version of the software
- Reduces expenses and no initial cost for application or long-term commitments: The cost of cloud accounting is monthly payment without buying. For investing or servers on hardware and software, networking management, and overall IT.

One of the advantages for businesses to use cloud accounting SaaS is the ability to decrease expenses companies can expand IT resources without IT expenditures (Barrasso.R & Wallance.M, 2012) These reduced costs on hardware and software, overall the networking management and IT not only include financial costs, but also human costs which would otherwise arise when purchasing and installing financial software for the accounting function, These cost is saving particularly important for small and medium size of businesses. For larger size companies, the Cloud brings relatively few cost savings, as they own their own IT sector, international or local data centers, and service provider which allows them to design their Cloud according to their customized needs (Prichici and Ionescu, 2015). This means that the cost-saving benefits are particularly beneficial for small and medium businesses who do not have access to an in-house pool of IT resources. In addition, there also exist the following related to payments and costs:

- Free of charge: No charge is applied for the services.
- Periodical fees: Payment of time to time quantities for the use of a service.
- Discounts: Reduction in the usual price
- Pre-paid: The payment of the service is done in advance.
- Post-paid: The payment of the service is done after use.
- Online: The accounting is performed while the user makes use of a service.

- Offline: The accounting process is done after a service is used.
- Static pricing: The pricing function does not change.
- Dynamic pricing: The pricing function changes on the fly, being adapted to the usage of the users.

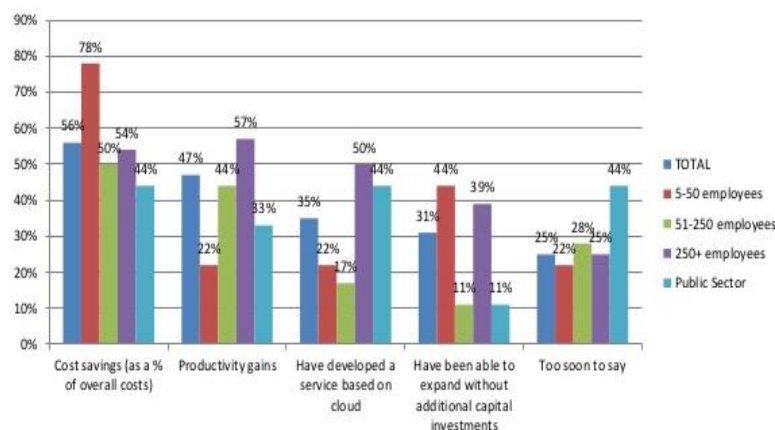
Soudani (2013) executed research in the United Arab Emirates concluding that the use of online cloud accounting system could be learned of as between firm systems as of its ability to electronically implement a set of rules through data integration at much specific time to provide delicate control over the information for making the decisions.

### Impact of Cloud Accounting in Business

As per professionals' viewpoint, any business can attain broad advantages from utilizing cloud-based arrangements. The instinctive plan with the likelihood to get constant data and a few other progressed highlights make accounting open for specialists like accountants and entrepreneurs (Lakew, et al., 2012). By adopting an orderly strategy to risk evaluation, including making powerful arrangements for cloud use and a reaction plan against risk, organizations can encounter the influence of this new innovation and increment their functional productivity (Rom & Rohde, 2007). Assuming we think about an organization that is embracing such arrangements, then, at that point, we ought to consider some fundamental perspectives that reshape the actual business, Figure 1 shows the impact diagram of cloud accounting in business. In the coming subsection, more emphasis will be made on applicable areas.

Figure 1.

*Cloud accounting impact in business (Ace Cloud Hosting Editor, 2020)*





### **Concerns and Dangers**

Considering how the present money-related framework is significantly forceful and testing each business is uncommonly mindful of respect to sharing their financial data. In all honesty, guaranteeing the ideal information at the ideal time is an astoundingly inconceivable resource in the business field. This is the chief tangle while pondering the development to the cloud (Gardfjäll, et al., 2008). Regardless of the way that a critical level of security has adequately been set up, business people are at this point stressed over the prosperity of their money-related information. Regardless, that stress has been pushed down the line as people recognize cloud systems can be incredibly secure, and in various ways are more secure than existing structures reliant upon office servers (Anandarajan, et al., 2004). Mike Chisholm, CEO of CCH Collaborative Solutions, is one of the unique guardians of cloud security, according to his decree in 2013: Five-or six years earlier, when cloud structures were first going onto the market, security was unquestionably the revoking concern (Cheng, et al., 2010; Elmroth, et al., 2006). In the present circumstance, the business' congruity or execution is depending upon a reliable association and the speed of the data. Another point that is concerning business visionaries is the risk of losing association with the web. Preceding taking on a cloud plan, associations are immovably urged to endeavor the new thing that they need to buy. This is a counterfeit issue since all cloud providers have very clear and express assist with evening out concurrences with their own association providers, so the cloud customer never experiences individual time (Varajão, et al., 2017). Since these applications are available on the web, most cloud accounting providers grant customers to test their organization at no charge. By including the application for an agreed time period, an association will know whether the plan is proper, preceding making a somewhat long obligation.

### **Brought Down Costs**

The costs included when using accounting programming fuse both the front venture and the upkeep costs. Especially for minimal estimated associations that unable take hold the expenses of the exorbitant establishment and the item execution process, these courses of action grant them to run their internal cycles and assignments using comparative IT systems used by their more advanced opponents (Rom and Rohde, 2006). An association's basic theory can be fundamentally diminished through cloud accounting commitments considering the way that, with this game plan, there

are no gear or programming licenses to purchase. Associations can truly pick the portion plot: per every usage or by paying a month-to-month participation cost, dependent upon use. They can get to use comparative top tech as colossal or worldwide associations do and they simply pay for what they use. The organization doesn't have to purchase an accounting application, but its usage. Since the item is given over the Internet, customers are constantly prepared to get to the revived transformation of the development. By accepting a cloud accounting game plan, there is no gear to stay aware of numerous associations that acknowledged the cloud model has had the choice to altogether decrease costs because their item is passed on over the web and it isn't presented on a close-by PC (Sekar and Maniatis, 2011). Beginning here, cloud-based accounting can be portrayed as an inventive proficient gadget, supportive for the beneficiary business. By consistently invigorating the "thing" during low traffic periods like early morning or late evenings, the customers do not have to drop work during their day. All of these are possible with a fundamental relationship with the web (Mihoob, et al., 2010; Sharma, et al., 2012). Without requiring the customer to do another movement, customized invigorates are performed so the client can use the latest variation of the thing right away.

### **Expanded Usefulness**

How the cloud is open all day, every day allows customers to work when they need to, not limiting them to accessible time so to speak. By getting to the application from any phone or PC, the customer can check his bank changes or progressing trades. This encourages the business convenience because the customers are not confined to accessible time, bound to a workspace, or limited by any kind of access contraption they might use. Cloud-based accounting ensures business movement through a couple of techniques. The dashboard ensures a steady point of view on the business at first and a predominant comprehension of the pay (Elmroth, et al., 2009). The cloud provider is ceaselessly using a consistent climate considering the way that in the end, guaranteeing financial data is essential for every business. The robotized backup of the financial data is continued as an arranged task e.g., consistently, without fail, or month to month, as the customer requires. Whether or not the customer's PC is taken or coming up short, there is no risk of losing data; comparative information can be gotten from another contraption. The information is mixed using the most raised security

standards and it is safely overseen considering the way that the application is arranged "in the cloud", not on a particular or unstable contraption. Before distributed computing, proficiency ends once the business person and their laborers close from the work environment. If there ought to emerge an event of abrupt events, there is reliably the shot at continuing with the main job (Grabski, et al., 2011). By using cloud accounting, the business can proceed, in this way giving business intelligence.

### **Cloud Accounting Pros and Cons**

Cloud accounting manages moving accounting data frameworks to a web-based climate and this data can be gotten to whenever required with an Internet association, without the need to introduce any product program on the gadgets (Tugui and Gheorghe, 2014). For web-based accounting, administrations suppliers utilize public cloud organization models and they likewise handle and deal with the foundations of web-based accounting (Dimitriu and Matei, 2014a; Dimitriu and Matei, 2014b). For conventional accounting frameworks, the PC frameworks, stockpiling frameworks, programs are genuinely positioned and introduced inside the association's premises. This is something very similar to other accounting applications, web-based accounting likewise has the elements of on-request administration, network access, sharing of information assets, adaptability, and estimated administration. programming application programs that are genuinely positioned at the premises of the suppliers and under their watch. Consequently, the interfaces will be overseen by the suppliers. The suppliers sell the cloud accounting administrations, essentially with a membership model to business experts or buyers allowing them to utilize the applications and cycle their monetary exchanges (Dimitriu and Matei, 2014b). The clients just require cell phones, PCs, PCs, or tablets with the Internet to get entrance into the cloud accounting framework which incorporates, information passage, handling, creating reports, and information stockpiling. From the clients' side, they don't need to introduce any product or applications on their own PC inside their association premises as the data information stockpiling and reinforcement frameworks are truly positioned at the suppliers' server farm and under their immediate management. Online cloud accounting gives explicit benefits to organizations, similar to adaptability in working areas, lower innovation support costs, and simple sharing of monetary information with customers (Prichici and Ionescu, 2015).

Arsenie-Samoil (2011) portrays a web-based cloud accounting framework as another idea of handling the accounting information data in the cloud, with the product, admittance to accounting data, and the information stockpiling is totally positioned at the suppliers' administration focuses. Existing web-based cloud accounting explores primarily utilize a hypothetical way to deal with contend the possible advantages and hindrances of the utilization of online cloud accounting frameworks. This is not quite the same as antiquated accounting applications, online cloud accounting frameworks don't request a lot of explicit conditions, for example, accounting programming licenses, servers, information accounting limit, or a particular group of specialists to introduce and arrange the accounting data frameworks (Dimitriu and Matei, 2014a). In reality, the clients may not recognize the exact actual spot of their accounting information.

### **Theoretical framework of Cloud Computing Deploy Models**

In principle, the notion of a cloud accounting system is embodied in the principle agent theory which recommends the necessity to surface with accounting methods as part of monitoring manager's activities. The stress of the latent business days' competition and the real worldwide financial context have tremendously shown the demand for organizations to be involved more actively in developing new and efficient ways of improving the profitability and the general performance of their business.

The online accounting framework is an arising program stage and expects to share administrations, data, estimations, and information examination among clients. They have characterized an online accounting framework as a model that helps with giving pertinent, on-request network access to share the accessibility of configurable registering assets that can be immediately provisioned and delivered with not many administration endeavors of specialist co-op communication. The ways of forming it with the deterrents like undertaking conveyance, UI, and coordination issues are delineated and assessed by (Mell and Grance, 2011).

The cloud service models are classified depending on the client requests, specifically:

- Platform as a service (Paas), where the clients could have command over the various applications however not over the complete cloud framework.
- Infrastructure as a service (Iaas), where clients could have command over the distinctive operating systems, network, storage, and application.
- Software as a service (Saas), where clients just access resources from the service providers and have zero power over the applications or framework. The various types of cloud arrangement are likewise isolated into either public cloud (open to everyone) or private cloud (restrictive).

The projects cover an assortment of regions comprehensive of handling words, (Ramazani and Moghaddam.,(2012) show that accounting in distributed computing increment exactness in the accounting system, is useful for saving time for accountants, and the expense of social occasion data additionally affects accountants, they need to gain new ability foundation for further developing accounting callings like applied programming's of accounting, access, and dominate. Likewise, it is given that the better the impact of distributed computing on components of accounting data framework and job making more reasonable bookkeepers in organizations.

The cloud is another worldview that was created from the field of appropriated processing and virtualization research bunch as it depends on standards, procedures, and advances that came here. In view of the past works, researchers actually have various meanings of Cloud accounting frameworks, for example, it is characterized as a way of processing where powerfully adaptable and regularly virtualized assets are given as a help. Likewise, Cloud accounting utilizes a level for empowering accessible, helpful, and on-request admittance to a common pool of configurable registering assets (e.g., administration, stockpiling, applications, organizations) that can be quickly provisioned and controlled with negligible administration exertion or specialist co-op collaboration. Clients have basic information on, mastery in, or command over the innovation framework in the "cloud framework" that upholds them (Cooper, et al., 2010). Notwithstanding, we accept the definition proposed to be generally exact, where cloud accounting framework is characterized as a model for empowering advantageous on controlling information and request network admittance to a common pool of configurable figuring assets (e.g., networks, servers, stockpiling, applications, and administrations) that be capable quickly provisioned and delivered with information the executive's exertion or specialist organization cooperation. Moreover,

This convention is intended to control the information from network components, and not cloud benefits explicitly (Asatiani, 2016). The Common Reliable Accounting for Network Element (CRANE) convention empowers proficient and dependable conveyance of information, and primarily accounting information from Network Elements to all frameworks, like Operations Support Systems (OSS) intercession frameworks and Business Support Systems (BSS). The investigation of Zhygalova (2013) shows that organizations that perform specific re-appropriating cloud clients existing higher improvement levels in their accounting processes than non-cloud clients. Consequently, EA is relied upon to be equipped for giving associations a superior upper hand, viable effortlessly of utilization. Authoritative (O). This stands to the end that reevaluating specialist co-ops might work on the apparent worth of their administrations by taking on cloud frameworks" It might take more time for clients to recognize and coordinate the innovation (Wang et al., 2010). Each bunch has a unique deal interaction and stock which the internet-based framework influences the EA reception. In this way, associations should know about the significant security dangers that could handle their EA and execute the connected security controls to disallow, recognize and reestablish such security breaks as it is pertinent with monetary information which is private and secret. On a regular schedule, reports are found in accounting and monetary diaries about PC-related information blunders, wrong monetary data, the misconception of inside controls, robberies, burglaries, flames, and harm (Abu-Musa, 2006). Likewise, SMEs are needed to have an adequate number of assets of mechanical and monetary, before embracing the EA. Natural (E).

Likewise, Ebenezer et al. (2020) revealed that "distributed computing can have the option to be applied effectively for recording information and business investigation. The objective of each Accounting Information System is to choose, gather, record, grouping and store information about exchanges and business exercises; process gathered information into a framework that is useful for simply deciding, and give satisfactory remote and controls to protect the organization's resources. However, cloud accounting might appear to be not a similar work area accounting in nature, practically speaking and use, distributed computing has numerous ways by which it can improve accounting. Bookkeepers on the cloud can do announcing accounting by supporting exchanges; entering monetary information; approving installments getting ready fiscal reports; without fundamentally being in an

office where the accounting programming bundle needs to have been introduced in the work area. With the value of distributed computing permitting each client the chance to be buried with all that the person does according to advancing and giving access, monetary framework data can no more be deferred (DeCandia, et al., 2007). Also, monetary information will be put away at a somewhat lower cost without the vital interest in the foundation and its upkeep cost. This versatility opportunity would curry bookkeepers the advantage of sharing convenient data which would improve the speed of direction.

### **Cloud Accounting Framework**

Cloud accounting framework provides Comfort and easy-to-understand is the greatest positive component before security and protection after that individual is concerned in regards to the expenses. (Gupta and Raj., (2013) have introduced in their review five elements influencing cloud utilization by little and normal size endeavors, whose requests and business needs are diverse contrasted with enormous undertakings. SMEs would rather not utilize internet accounting frameworks for participation and sharing however favor their exemplary strategies for collaboration and sharing their partners, SMEs don't consider web-based accounting frameworks as reliable, and finally, (Walterbusch et al., (2013) found in their review that decision-production in internet accounting frameworks is led loathe and come up short on a precise methodology. It began in the mid-nineties of the last century with the improvement of accounting innovation frameworks, trailed by ERP data sets frameworks, distributed computing stages, and enormous information. The talked-about approach raises the mindfulness level of cover-up and roundabout expenses in web-based figuring frameworks (Gilbert and Lynch, 2002). Presently, the new improvement is the utilization of cell phone applications in accounting. Their principal object was to outline an all-out cost of proprietorship strategy for internet accounting administrations. Then, at that point, the need emerged to investigate a lot of accounting information utilizing mining strategies.

The near examination with the best in class RDA conspires exhibited that the clarified plot was secure and exceptionally powerful as far as calculations and correspondence overhead on the reviewer and server. Sookhak, et al., (2014) have proposed the compelling method of far-off information reviewing methodology as per

mathematical mark properties for online capacity frameworks and furthermore outlined an advanced information structure fit for supporting unique information activities effectively like a supplement, adjust, attach, and erase. They have likewise examined the key places that should be centered around by any organization when settling on choices to pick the right accounting situation. Dimitriu and Matei (2014) examined different points of view and definitions doled out to the importance of a web-based accounting framework and the advantages and potential dangers characterized by the reception of these administrations, especially in the accounting office.

Cloud accounting is taking the idea of distributed computing and applying it to an accounting setting. The relativity between cloud accounting and distributed computing is that while first is the conveyance of specialized administrations like data, programming, and shared assets through gadgets over an organization (web typically), Cloud accounting comprises of the entrance of accounting information by means of the web. End clients get cloud-based programming through an application specifically internet browsers or portable applications in the event that the data of the product and information are put away on farther found waiters, commonly presented by an outsider. (Asatiani, 2016). Web-based accounting contains admittance to accounting projects and information through a web program. This is not quite the same as an example accounting framework that contains the acquisition of a program and establishment on either a nearby server or workstation. The applications are followed through on a membership premise and the information is kept on a somewhat found server. This alludes to that information sharing as the simple and actual development of the information starting with one spot site then onto the next.

(Benbow, 2010) states web-based accounting can be distinguished by a theoretical summation of administrations, conveyed through equal and virtualized PCs in a circulated framework that are interconnected, open from wherever discarding a gadget with the association with the web, they additionally can be provided powerfully and introduced as an asset processing, or an assortment of assets joined together, as acknowledged by the specialist co-op and the client. Armbrust (2010) explains that web-based processing innovation contains informatic programming conveyed through the web, additionally the equipment and applications hardware profited from in data habitats with respect to providing those administrations. Then again, the National



Institute of Standards and Technology (NIST) presents internet processing as a cutting edge structure that grants super durable, simple, on-need admittance to a joint organization upon configurable asset figuring, accessibility with least organization endeavors, or base cooperation with the conveying administration. Web-based registering qualities as depicted by (Aggarwal and McCabe, 2013) incorporate assistance impediment upon demand, extended admittance to the organization, asset alliance, fast, adaptability, privacy, deftness, and high versatility. also presented internet processing starting from the distinction with the email, ERP frameworks, office programming, and adding the pervasive assets divided between clients.

The central matters where accounting is performed through web-based processing contrasts from the exemplary accounting projects can be seen in the element of the helped application. This shows that IT is inventively utilized and is certifiably not a 'trinket'. Etro (2009), Christauskas and Miseviciene (2012) show that web-based stages are more ready to help various clients at a bigger scope, distinguished as Internet Scale, meanwhile, past applications are restricted to practically an insufficient number of clients, rely upon the Organizational size. EA reception plays a basic part to the associations to ensure all monetary data is overseen appropriately and could be utilized to settle on. EA reception presented as utilizing PCs (equipment and programming) for accounting exchanges and getting ready monetary reports at firms whether the accounting program is created by the organization or work by the seller. The sea, gas, oil, and seaward industry are consistently going through changes in innovation and arrangements. Thusly, business would be dealt with appropriately and further develop the organization execution, particularly SMEs. This industry should stay in the know regarding the most current data to stay on the lookout and remain cutthroat.

At present, the supplier side accounting (PSA) system is the main normal accounting approach that is generally utilized by distributed computing suppliers like Amazon S3, Quickbooks Nirvanix NSD, and google applications. The specialist cooperator is liable for doing the accounting system in this is called supplier side accounting. A genuine restriction of PSA is that it doesn't offer the customer an adequate method for performing sensibility checks to confirm that the supplier isn't inadvertently or perniciously cheating. In the PSA the asset utilization is singularly estimated by the supplier where the asset accounting administration is conveyed on the

supplier foundations. For example, with a limit on-request, it is vital to control whether the customer arrives at the greatest limit and works of asset utilization or not when the help ends. This system is adequate when the purchaser has valid justification to believe the supplier and the buyer accepts that the supplier will not inadvertently or malevolently cheat him. To close the above conversation, most cloud specialist organizations use supplier side accounting where the supplier singularly decides the buyer's asset utilization and furnishes the last option with a bill (Lakew, et al., 2012). Additionally, sought-after premise charging model, the buyer solicitation to check whether he paid for what has been burned-through or has been cheated with subtleties. Consequently, buyers require an accounting record that can deliver confidence in accounting results. This accounting system doesn't offer the buyer an adequate method for performing controls checks to confirm that the supplier isn't coincidentally or malevolently cheating.

On account of the Technological-Organizational-Environmental (TOE) system, accounting in distributed computing is a new discipline. The Diameter convention gives an Authentication, Authorization, and Accounting (AAA) system to work with. By the by, there are many endeavors to track down a model that adaptable to all the accounting requirements There is an expansion in this convention that additionally upholds charging choosing choices. It advances interfacing, approving, and representing all parts. (Sekar and Maniatis, 2011).

### **Accounting Information System (AIS) and Models**

An Accounting Information System (AIS) is a framework unequivocally planned and industrialized with set strategies and conventions to gather, store, process, and disseminate accounting information into representable data like monetary reports. Execution of AIS in business has three significant targets. It is a PC-based technique for following accounting exercises utilizing data innovation assets. The third target is to improve the unwavering quality of monetary detailing and decrease the chance of material misquoting on fiscal reports. (Yau-Yeung, 2017). The primary target is to help the business in consistence with appropriate laws, guidelines, and accounting norms the subsequent goal is to expand the adequacy and work on the proficiency of business tasks.

characterize three spaces of an exceptional setting that sway the activities by which it takes on and administrates a mechanical advancement. It is comprised of

strong hypothetical standards and the significance of the application to IS advancement areas. This setting as initially offered, and later adjusted in IT reception investigates, gives a valuable logical system that might be utilized in the space of concentrating on the reception and absorption of different sorts of IT development. Strap (1999) outlined a structure for little measured organizations in taking on IT/IS. The chief's element is a key reception predictor of the DTOE structure (Awa, and Inyang, 2011). He avoided proprietor supervisor from the authoritative structure as it plays an exceptionally urgent part to choose for association's methodology.

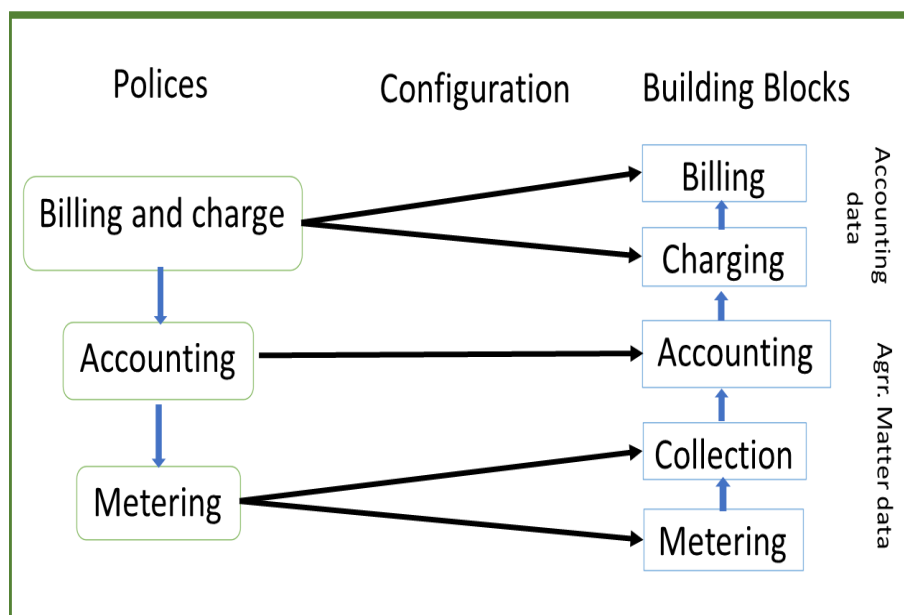
From that point Saabith, et al., (2016)., depicted the new structure in electronic accounting data framework (CAIS) work for Malaysian SMEs in different ventures. It is acknowledged that gatherings contemplate the utilization of embracing any development (Wang, et al., 2010). Along these lines, this examination will extend their model in different settings, particularly in the oceanic business. The convoluted advancements should think about since they might forbid effective execution . It additionally ought to have high similarity with the way of life of the business and procedure (Wang et al., 2010). exhibited the potential reasons for the declining fruitful reconciliation of ERP frameworks in Egypt. They inferred that the information or culture-put together contrarily had contact with respect to the utilization of ERP frameworks. They have completely considered (45) Egyptian organizations which use ERP frameworks in Egypt. The review was zeroing in on the foundations recorded in the First Market in Amman Stock Exchange comprised of (23) monetary organizations in various spaces of exchanging including banks and insurance agencies. Al-Qatawneh (2014) represented the impact of the utilization of IT on the possibility of accounting data frameworks. Means and frequencies were utilized to show the example of the examination. Subsequent to creating two surveys, they were conveyed to a few monetary and IT divisions all through these organizations. He found there is a positive Impact for IT on the viability of accounting data frameworks. To test the meaning of the speculations of the review t-test was utilized. He likewise suggested that there is an incredible interest to focus on preparing and more exploring on this Topic. Pasara, Makochekanwa, and Dunga, (2021). this paper revealed Analyzing Accounting information protection issues have been distinguishing one of a kind protection needs, gives a protection conservation model (PPM) for clients of all proprietors In request to give a moderately safe cloud accounting climate and shown an acceptable

arrangement that eliminates likely dangers to information security (Razaque and Rizvi, 2017). These examinations have shown that there is a need to have inner evaluating and scholarly cash flow to stay up with the improvement of the information economy and cloud accounting information (Abdul-Moneim, Abdelmoneim, & Farghaly, 2018.; Pasara, Makochekanwa, and Dunga, 2021).

Nicolaou and Bhattacherya (2006) attempted to investigate the drawn-out monetary exhibition as a result of changes in the ERP framework. Then again cloud accounting framework is estimated relying upon the technique for SWOT examination as shows up. The outcomes showed that parties that coordinate ERP frameworks uncovered early enhancements in monetary execution contrasted with others. The course of strategy SWOT examination, to decide qualities and shortcomings of any procedure, is likewise an essential method used to recognize the chances and came about because of the inner and outside factors. Figure 2 beneath shows the proposed reference model, five layers are showing the diverse structure blocks, on the right half of the figure.

Figure 2.

*Figure reference model of resource accounting system.*



Information accumulation will be done at any layer not just at the assortment level. The structure block is layered by the handling of the accounting information from the base metering level, up to the last point charging process. The squares on the various advances are arranged through the strategies displayed on the left side.

The design boundaries are separated from the past and strategy to the relating building block. Higher layer arrangements can convert into lower layer strategies.

Here is a description of each layer of the building blocks:

- **Collection:** Collection of the information can be started by the actual meter and gathered information additionally can be totaled one stage prior to being passed to the accounting level. The information created by the meter(s) must be gathered for additional handling. Metering approaches characterize how assortment and accumulation are finished.
- **Metering:** Meters are needed for choosing information size about asset utilization in the organization (for example bytes moved).
- **Charging:** Cost measurements might be applied to similar accounting records even inequality. Charging infers costs for accounting information introduce dependent on client and administration explicit duty boundaries. Charging arrangements (models) depicts the duties and boundary which is applied.
- **Accounting:** The accounting level portrays the information assortment about asset utilization. For resulting charging, the metered information should be coordinated with a client that is the initiator of a stream and client care (the endorser) that is overseeing and liable for installment. This level incorporates the control of information gathering (through metering), move, and capacity of accounting information. These three capacities should be performed by the AAA server. For the commencement of an accounting cycle, a client or specialist organization can be confirmed and approved. The accounting system is arranged through accounting strategies.
- **Billing:** Billing move costs are determined by the charging model into cash and create a structure seller and client's bill. This is Related to standard phrasing and definition utilized in the spot of asset accounting and as brought up in, organization and Internet people groups use term accounting to allude to various parts of the accounting system.

Charging strategies characterize the class and how the client can be charged (for an example installment strategy, receipt, charge card), and the ideal opportunity for the charging time frame (for example month to month, week after week, and so forth) Likewise, the creators present a scientific classification of charging models and a conversation about the metering boundaries (for example start and end period, volume burned-through, of a meeting) that each model requires. Also, a few creators utilize the term to allude to the method involved with metering, gathering, deciphering, and setting up the report, costing, and charging-related data of the utilization of help or asset, while others use it to allude to just one of the sub-processes. Thusly, the term metering administration alludes solely to the interaction that gathers metering information. The charging administration alludes to the interaction that applies the expense model on the accounting information to give the client's bill. The accounting administration to allude solely to the interaction that applies the accounting model on the metering information to process the asset utilization (accounting information).

There are many trust-related issues regardless of the charging model used by the service provider, in accounting that need attention:

- Who is answerable for social event information about the assets burned through?
- Who computes the charge?
- Who settles on the choice with regards to how much asset has been burned through?
- Would the accounting be able to yield be confirmed and trusted by the two players?
- How is the strategy utilized of charge determined?

Alzoubi, et al (2011) expected to assess the effect of involving automated accounting data frameworks in the Jordanian business banks. They considered mechanical advancement through analyzing the adaptability, secrecy, straightforwardness, and nature of these frameworks. Among the returned (42) surveys that were satiable for factual examination purposes, they found that the electronic accounting data frameworks in the banks have a superior grade, are adaptable straightforward, and solid. They think of a poll and circulated (45) surveys to the monetary divisions in business banks recorded on the Amman Stock Exchange.

Rodney and Proville (2009) clarified recognizing the variables influencing bookkeepers during the time spent carrying out an ERP framework in the post-execution time frame. T-test was utilized to test speculations and direct relapse investigation too. He found that there is a positive effect of the interest of bookkeepers, explicitly those with specialized gifts on the fruitful execution of ERP. A survey was created and shipped off (219) alumni of the Institute of Chartered Accountant Administrative Accounting of America.

Galani, Gravas, and Stavropoulos, (2010) clarified the effect of the ERP framework on internet accounting frameworks and the acts of authoritative accounting through an immediate report executed on an example of Greek organizations, according to the client's perspective of the framework. The concentrate likewise found that the ERP framework decidedly affects the advancement of the capacity of the executive accounting. Accordingly, the general execution of the board upholds the legitimate utilization of present-day accounting practice, works with their capacity to use sound judgment, helps in declining costs, fosters linkages with providers, and lessens reaction time to client requests. The outcomes uncovered that the ERP framework increment fulfillment with the administration and clients on the exhibition of their association and works on the nature of data.

Al-Dalaien and Dalayeen (2018) showed in their review that most Malaysian SMEs that comprise the sea business use UBS Accounting programs as the framework is pertinent to deal with and effortlessly applied to various types of organizations. For instance, an organization in Norway produces NetLedger Maritime Accounting that gives the online-based accounting framework record, finance, accounting administrations, and counsels to the sea business that is reasonable with countless sea fragments, lightering, beginning from big haulers, LNG, general mass, synthetic substances, gas, dope, liner, seaward stockpile, and weighty lift utilize broadly in Europe, Asia, and the US. Universally, the main sea states and domains like Greece, the U.S, Japan, Germany, China, Hong Kong, Norway, and Singapore have as of now embraced an exceptional oceanic figuring accounting framework. It helps journey accounting and examination, overseeing cost announcing, and exchange investigation including accumulations that suits overseeing transport, transport buying, holding transport gatherings, administrators, specialists, dugout merchant, and others.

Simultaneously, Marine Accounting Software created by Norcomms at Singapore is devoted to multi-organization, multi-bunch, and multi-cash organizations.

### **Accounting Information Technology**

There are many practices for accounting Information innovation, exchanging monetary instruments recording individual spending plans, to give the profit of a business and costs. Business executions day by day uses modernized innovation. The principal benefit of Information innovation is the quick computation of accounting information and showing the outcomes (Kareem, 2020).

Accounting is the system an association uses to measure its money-related execution by seeing and requesting each trade like arrangements, assets, and liabilities such that it sticks to explicit standard plans. The work presented in this paper is instituted from this idea that there is a huge course of action of new advances that can enhance or fuse current Accounting Information Service (AIS) and its present available workplaces. Routinely an AIS is made from three critical subsystems like General Ledger System and Financial Reporting System (GLS/FRS), Transaction Processing System (TPS) that maintains ordinary business assignments; and the Management Reporting System (MRS) (Choo, 2001; Amidu et. al., 2011). These trades can be collected in three trade cycles: the utilization cycle, the pay cycle, and the change cycle. TPS is responsible for supporting the step-by-step business exercises or trades. The inspiration driving the fundamental information systems was to mechanize business processes, which shows that the accounting space was one of irrefutably the first to use accounting information structures to help its activities (Al-Mashari, et. al., 2003).

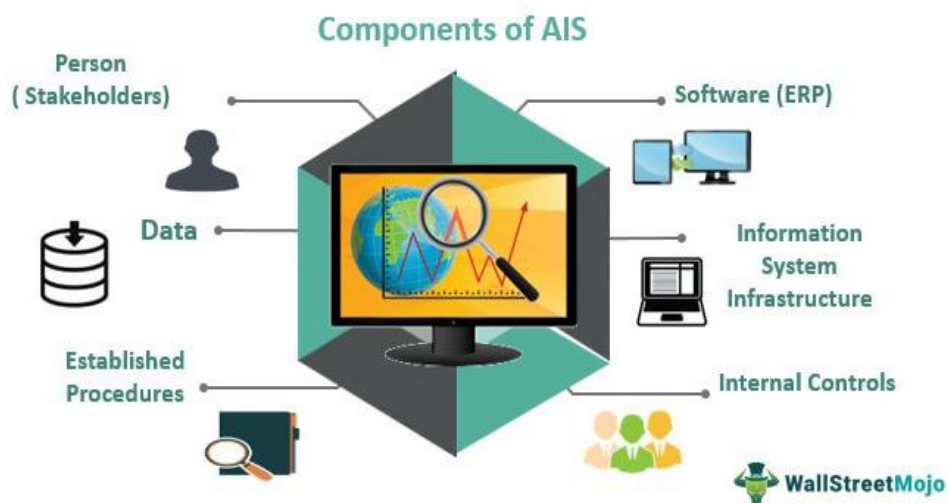
Moves in information advancement have changed many firms' incapable organizations' endeavors, yet perhaps none as much as those in the public accounting industry. Typically thought to be single consolidated help, the GLS/FRS are two immovably thrilled structures, with the first dedicated to the layout of trade cycle activity and the second one to the assessment and declaring of the circumstance with money related resources, generally, yielded as financial rundowns or appraisal structures to external components (Rimal, et. al., 2009). Since the appearance of cloud accounting, there has been a major presence of the key PCs, explicitly, with the IBM 702 which opened in the mood for accounting use in 1953 (Isiksal, et. al., 2019a). For



a torpid-paced and moderate industry, public accounting has gone through tremendous changes lately (Isiksal, et. al., 2019b). MRS, normally in the degree of Management Information Systems (MIS), offers inside the organization with specific explanation money-related reports and information needed for choice creation, for instance, monetary plans, change reports, and committee reports. Generally, specialists from the accounting space propose that the standard idea in regards to the information course of action of an association and particularly an AIS is embraced by the Enterprise Resource Planning (ERP), which encompasses all of the major abilities to help an association and is executed basically in tremendous organizations (Hussain, et. al., 2021a; Babar and Chauhan, 2011). Current composing is finding out about AIS spaces, they are presently viewing at it as a more isolated method for managing an AIS where new advances like Business Intelligence (BI) or Balanced Scorecard (BSC) structures expect an unyieldingly critical part (Hussain, et. al., 2021b; Tao, et. al., 2011). Figure3 shows the accounting prospect in information advancement.

Figure 3.

*Accounting prospect in information technology (Pranjal Jain, 2021)*



### **The Influence of Information Technology on Accounting**

Laptops, servers, the Internet, remote and individual mechanized contraptions have successfully changed the way where associations lead business (Zhang, et. al., 2010). Accounting has seen monstrous movements due to the advancement of information development. Cloud suppliers have also dealt with traditional exercises

and creation processes. These item packages may go with an arrangement of explicit components or a customary program that can be adjusted to current business exercises. Cloud accounting automates the traditional paper records and accounting books (QIN, 2014). Enormous associations may pick a structure with wide cloud accounting packs, for instance, to try a resource orchestrating framework. Associations normally pick accounting programs subject to the size of their exercises and the number of customers getting to the structure (Cheng, 2012; Foster, Raicu, and Lu., 2008). Additionally, it has abbreviated the time expected to present money-related information, yet it similarly has fostered the overall viability and precision of the information. Information advancement enjoys made gigantic benefits for accounting workplaces. IT associations and PC structures have condensed the lead time needed by bookkeepers to get and introduce money-related information to the load up and colleagues.

### **Environmental Examining**

This can be described as getting and the usage of information from events, examples, and patterns in a business outside climate, the data on which would help the board in orchestrating the organization's tentative arrangement (Hussain, et. al., 2021d). Consequently, it is basic to cultivate structures that can look for external information that can be used to help organizations. Organizations really ignore outside information. Be that as it may, it stays important to take imperative decisions. The point of convergence of thought of standard accounting on the stewardship limit of accounting is critical anyway should not be its principal focus (Gu, 2013; Fan and Cao, 2014). For instance, recorded costs, notwithstanding, are lacking for the evaluation of business decisions. It thinks about the worth that ought to be paid for an asset or its use at the date of the money-related record or the date of the use. Another cost perspective is the current cost. A couple of specialists are inclining to join valid and stream techniques.

### **Improved Accuracy**

Electronic systems will in like manner not license journal entries to be out of equilibrium when posting, ensuring that particular trades are fittingly recorded (Ta, 2017). Most modernized accounting structures have inside equilibrium and actually take a look at measures to ensure that all trades and records are suitably changed before

financial outlines are prepared (Soni and Hasan, 2017). Less access by accountants ensures that money-related information is changed only by qualified heads. Precision is furthermore improved by confining the number of accountants that approach financial information.

### **Faster Processing**

Quicker dealing with times for individual trades have moreover decreased how long is relied upon to polish off each accounting period (Ciger and Kinay, 2017). Modernized accounting structures grant bookkeepers to manage a great deal of financial information and perform cooperation quickly through the accounting system. Shortening this time frame helps associations in cost control, which works in everyday association usefulness. Month-or year-end shutting periods can be especially troubling in accounting workplaces, achieving extended periods of time and higher work costs.

### **Business Process Management**

Colossal effective drives, like Six Sigma, Customer Relationship Management (CRM), Business Process Management (BPM), and Enterprise Resource Planning (ERP), insinuate accounting process has a critical and central thought. The interaction is a commonplace component alongside all affiliations. Processes are the way wherein things finish ( Wicaksono, Salma et. al., 2020). Research about ERP essential components of progress and benefits, proof that, as indicated by a business perspective, the structure joins the significance of the documentation, assessment, improvement, control, and update/reengineering chances of the generally large number of most fundamental cycles and focus activities' (Ningrum, et. al., 2017; Hussain, et. al., 2021c). A couple of analysts center around the meaning of cycles calling them 'distinct advantages. For example, Kaplan and Norton insinuate a Procedure Map, with tricky assets which sway an association's show by updating the inside cycles commonly fundamental in making a motivating force for customers and financial backers (Wyslocka, and Jelonek, 2015).

### **Conclusion**

This chapter provides the literature review on cloud computing, cloud accounting, and accounting information systems. This study aims to explore the

reviews from cloud accounting previous studies and experienced modules of cloud accounting.

The concentrate additionally inspects the reason(s) for the reception of this new innovation. Because of the great case of the lethargic reception of distributed computing among SMEs, it is fundamental to pick the accounting experts' insight, as they are the most well-known wellspring of outside guidance and backing for SMEs with respect to accounting innovation. Albeit the past explores leave on unique drives to improve cloud reception among SMEs, Accounting data framework suppliers had made an immense measure of speculation for the advancement of systems to follow the need of accounting circle execution. The part gives definite models of functional investigations of sent cloud accounting frameworks since it is seen that absence of information on cloud accounting frameworks had limited them from accepting the benefits possibly presented by the innovation. Henceforth, more endeavors in instructing both the accounting professionals and little, the medium venture has been laid out by these investigates. Be that as it may, as the case set out by past investigates on the upsides of the innovation must be capable assuming the innovation is diffused and utilized. These backings the contentions of minimal expense. They affirmed that distributed computing offers lower securing and upkeep costs when contrasted with ordinary programming.

Finally, it is affirmed that creators see cloud accounting frameworks as a trendsetting innovation in moving the state of business processes. As this concentrate just spotlights on accounting specialists, a bigger scope study with respondents from different foundations and enterprises may likewise contribute both to the hypothetical and useful headways of this specific innovation. As those investigations are exploratory in nature, more examinations are needed to additionally review the reception reasons and the reception interaction of distributed computing for firm execution might be crucial for additional help the attestation of cost-saving coming about because of the execution of this new innovation.

## CHAPTER III

### Methods and the Research design

#### Introduction

This section targets offering a point-by-point impression of the logical part of this research. This is done through clarifying related examination theory, research plan, and systemic occupations used to accumulate information for addressing the explored question. Likewise, this section presents the pilot study and systems embraced to gather information. Accordingly, this part puts forth the defense that the techniques utilized are the most ideal with the end goal of this postulation, and are grounded in the insightful practice of picking vigorous approaches to create solid logical information. In equal, the techniques utilized here address the most ideal fit with the examination questions proposed in this thesis. Strategies applied in the postulation are quantitative in nature and will be introduced in the coming subsections as a legitimate decision technique based on the proposition of the hypothesis in this research. For getting the information accumulated for this study a questioner was designed for this. For this reason, this exploration advocate involving underlying strategies as a suitable measurable examination instrument like the SPSS. At last, this section gives proof supporting the moral grounds utilized in this thesis and was maintained all through this theory research.

#### Research Design

We have used a quantitative research approach for collecting data using a questionnaire. We have designed a questionnaire to investigate the impact of the use of cloud accounting systems on the quality of accounting information at SME in Erbil. We have developed an online link to kobo toolbox to be used by accountants, managers and auditors, and investors in the SMEs in Erbil. We have asked the questions from different sectorial businesses in Erbil and the majority of participants agreed to answer the questions with the provision of consent. The qualification of the participants was mostly in finance, audit, business administration, and bookkeeping.

The research design is appropriate because it answers our study aims and our research question as proposed. The participants were randomly selected in order to

obtain primary data through an online questionnaire. The reliability and validity of the data collection approach were supported by an expert (a statistician) to review the questions and include them in the online KOBO toolbox.

### **Research Instrument**

The questionnaire divided into five main parts. The first part was demographic questions which consist of age, material status, gender and etc. The second part was relating to collecting and analyzing data, third part was about the user access and limitations, the fourth part was about the risks and benefits of the online versus offline system. and the last part was questions related to cloud accounting and its impact on the quality of information. We have used the five Likert scale for the main part of the questionnaire. The fiver Likert scale had values that ranged from 1 to 5 and it is corresponded to 1 for “Strongly disagree”, 2 for “disagree”, 3 for “natural”, 4 for “agree” and 5 for “strongly agree”.

The research is pertinent for enhancing its validity and reliability in addressing the underlying research concerns. The study variables are measured using a 5-point Likert scale. The validity of the questionnaire is checked through a group of experts. The reliability of the study is checked using Cronbach’s Alpha instrument variable’s reliability coefficients.

### **Data Collection**

The data collection started by distributing 120 questionnaire form to the above-mentioned samples and setting it with a clear explanation for each of the questions included. It consists of their ability to use the cloud accounting system and its impacts and the possible outcomes that may be efficient in the case of using it. Hence, data was collected from different types of business and it was applied to advance statistical analysis. Future studies can also apply more complex statistical analysis such as regression methods since analytical methods used in this study limited by the variables that analyze the study hypotheses. More insight will be given in the demographic overview section. The data that is collected is quantitative concerning the output of used cloud accounting system. For the data collection we depended on structured questionnaire form directly, the research studies the Impact of the use of cloud accounting system on quality of accounting information. which used to collect the

required data. The number of questionnaires that distributed randomly over 60 trade wholesale companies consisting of 120 participants from Small and medium firms in Erbil- Iraq. The employees voluntarily participated in this study. The questionnaire form was filled by the applicants using information on knowledgeable views obtained through their experience. Such information was obtained from already available standard models that are developed based on concepts of the use of cloud accounting systems. The sample population mainly consisted of those who have close continues contact with the firms accounting data from both genders that included bookkeepers who enter the data directly to their system. Accountants who record and classify accounting data. Finance managers that analyze finance data, prepare the reports, planning the budget and managing the department. Business owners, and internal auditors. We received the personal information data and their background experience in the field of accounting, software usage, education, and their previous experience with cloud accounting systems, any other factors that may impact the use of the cloud accounting system. current scale was open and free to access which is important for evaluating the validity and reliability of the current study against those of related previous studies. The templates are widely available for use and are found in a lot of academic books.

### **Population and Sampling Methods**

The study is based on the investigation of the effect of the use of cloud accounting systems on the quality of accounting information at SME in Erbil. The sample size is based on a study population of SMEs. Based on ten percent of the 600 SMEs in Erbil-Iraq. For each firm two questionnaires sent that determined the sample size as 120. Thus, a total 120 questionnaires were distributed among employments of the SMEs in Erbil.

### **Statistical Analysis**

The collected data were coded and analyzed after data collection using the statistical package SPSS. Descriptive statistics and content analysis were obtained using frequencies, mean and standard deviation. We have also constructed tables and graphics such as a pie chart in order to explain the questions clearly. The study is quantitatively analyzing the data to demonstrate the objective of the study. The

relationship between dependent and other independent variables was investigated using a non-parametric statistical method which is known as Kruskal-Wallis test.

### **Ethical Considerations**

Written informed consent letters are sent together with the questionnaires to ensure that the employees understand the purpose of the study and their rights as respondents. Such forms state that the employees were free to decide to participate or not to participate in the study. Also, the consent forms clearly stated that no benefits will be obtained from participating in the study and that the study will not affect their work in any way possible.

### **Conclusion**

This part has offered the philosophical suppositions for carrying out this thesis. The experimental process and ethical considerations are discussed in this section. All things considered; this postulation is grounded by the logical practice of carrying out a positivist exploration. This was done through gathering essential information through conveying surveys to Accounting dep. working in Erbil-Iraq companies to get a delegate test of directors' perspectives on the utilization of cloud accounting in business working frameworks in these companies.



## CHAPTER IV

### Data Analysis and Presentation

#### Introduction

We have sent the questionnaire to 120 participants in different companies in Erbil, Iraq. 120 participants answered the questions. We have translated the questionnaire into the original language and a response rate of 100% was achieved. Thus, we have obtained reliable results in this study.

#### Sampling and Setting

Deciding to choose the correct samples, is a crucial decision. Our sample included accountants, finance managers, bookkeepers, and business owners in one hundred private company's medium-size in Erbil, Kurdistan Region of Iraq. The study conducted on medium size in Iraq; thus, this study was not generalized to other sectors because each sector has its own features.

#### Data Analysis

After the data is been collected and recorded, we have to use a specific data analysis tool such as excel or SPSS according to the questionnaires provided and collection of data (either qualitative or quantitative). For example, the experience of the staff's impacts on the quality report, the infrastructure's effect on the report quality ...etc. The collected data coded and analyzed using the statistical package SPSS 24 to test the mediating effects of cloud accounting systems on the effects of protecting and improving accounting data. In the coming sections, the result gotten will be discussed in detail.

#### Demographic Overview

The tables below indicate a fairly nice distributed respondent group regarding age, gender, education, experience, managerial experience whether they have experience of using cloud accounting.

A total of 120 participants responded to the study of which about 56% were male and 44% were female. The age of most of the participants was between 26 to 33 years which is about 48% and over 28% of them were aged less than 25 years. Most of the participants have a BSc or BA which accounts for more than 73% of total participants. This means most of the participants have an advance educational background in related fields which are mostly accounting, auditing, economics, and business.

Additionally, the majority of participants have 6 to 10 years of experience in the firms. (46% have 6 to 10 years, 30% have 1 to 5 years and 10 % have more than 16 years). Out of 120 participants, 59 (49.2%) of them have middle managerial level, 41(34.2%) of them were junior managers and 20 (16.6%) of them were senior managers.

The study investigated first whether the firms have an online cloud system or not. The result indicates that more than 86% of the SMEs have an online cloud system, and more than 89 of firms are using accounting software. The Demographic analysis is presented in Table 1.

Table1.

*Demographic analysis*

<b>Variables of interest</b>		<b>N</b>	<b>Percent</b>
<b>Gender</b>	Male	67	55.83
	Female	53	44.17
<b>Age</b>	18-25 years	34	28.33
	26-33 years	58	48.33
	34-41 years	16	13.33
	42 years and more	12	10
<b>Education</b>	Diploma	12	10
	BSc/BA	88	73
	MSc/MA	12	10
	PhD	8	7
<b>Years of experience</b>	1-5 years	37	30.83
	6-10 years	56	46.67
	11-15 years	15	12.5
	16 years and above	12	10

<b>managerial level</b>	Junior manager	41	34.17
	Middle manager	59	49.17
	Senior manager	20	16.67
<b>Is your firm's System cloud (online)</b>	Yes	104	86.67
	No	16	13.33
<b>Does your Firm use accounting software</b>	Yes	107	89.17
	No	13	10.83

### Cloud Accounting Systems on Collecting Accounting Data Overview

Firm information is very important to see whether the SMEs have knowledge and understanding about cloud accounting. The average of participants stated that their SMEs are collecting information such as a receipt, invoices, etc, is 3.19 which can be interpreted as natural. The results are presented in Table 2. On average, participants agreed with the statement that cloud accounting is a new opportunity to provide the accounting information right on time (mean = 4, sd= 0.8). It can be noted that the average answers for the above table are all-around 4. This means that participants agreed with the above statements. The table also shows that the standard deviations of all questions are relatively low which means that the obtained results are reliable.

Table 2.

*Results of average and standard deviation of the effect of cloud accounting systems on collecting, organizing, and analysing accounting data.*

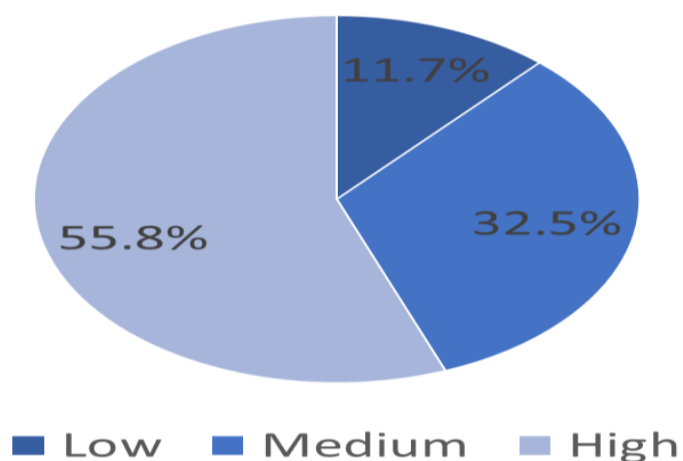
<b>Questions of cloud accounting systems on collecting, organizing, and analysing accounting data</b>	<b>N</b>	<b>Mean</b>	<b>Standard deviation</b>
Collecting documents (Sale/purchase invoices, Good's receipt notes, receipts, bank statements, etc.) for accounting processing.	120	3.19	1.20
It's a new opportunity to provide the accounting information right on time	120	4.08	0.85
Centralizing and transposing of data, Sort the data in chronological order besides on accounting standards.	120	4.25	0.71
Centralizing and transposing of data in social and tax statements	120	4.10	0.79

Accomplishes the analytical and synthetic information on accounting.	120	3.92	0.86
Cloud accounting is a successful tool in implementing strategic plans of the organization to achieve a new performance measurement system	120	3.94	0.87
Determines the rate of development of accounting information for the company	120	4.08	0.81
Using cloud accounting is the accurate entry of accounting data and numbers on the cloud to increase the correct and positive effect of the quality of the information	120	4.13	0.83
Determining the profit or loss, profit distribution or funding loss, setting out the final balance of accounts	120	3.91	0.85
Cloud accounting can improve the efficiency of work related to the enterprise accounting process	120	4.17	0.78

We have calculated the total score of the above ten questions to see the level of participants' knowledge about cloud accounting systems on collecting, organizing, and accounting data and analysis. It can be seen that the level of understanding of almost 56% of participants is high, over 32 of them considered as medium and only about 12% of participants had little knowledge about the cloud accounting system and collecting accounting data. The resulting flow chart is presented in Figure 4.

Figure 4.

*The flowchart of the firm's questions*



### The Influence of Cloud Accounting Systems on Managing Users Overview

The impact of a cloud accounting system can be varied from one firm to another. cloud accounting provides the ability for any user to access information in return ability to run, records of information on the cloud, and technical uses of cloud accounting is investigated. We have calculated the average and standard deviation for questions related to the impact of cloud accounting on managing users. The result is represented in Table3.

Table 3.

*Results of average and standard deviation the influence of cloud accounting systems on managing users and their authority limitations*

<b>Questions of the influence of cloud accounting systems on managing users and their authority limitations</b>	<b>N</b>	<b>Mean</b>	<b>Standard deviation</b>
Directly records transactions within the cloud in all Departments.	120	3.90	0.85
Provides verification access to the same results as the users are on the same programs and methods used.	120	3.92	0.85
By using cloud accounting, you can access your accounts and key financial figures at any time.	120	4.16	0.79
Using cloud accounting provides the ability for any user to access information In return.	120	3.97	0.83
The system of cloud accounting requires the development of binding standards to join the technical and accounting qualification and training programs for users and providers of computing services	120	3.55	0.79
Multiple entry points may lead to having issues with duplicated entries.	120	2.31	0.91

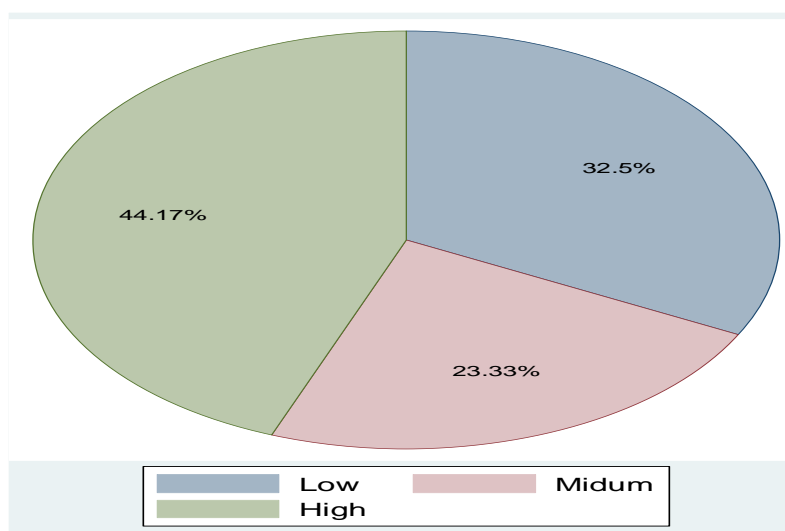
The average answer for the question of “Provides the verification access to the same results as the users are on the same programs and methods used” is 3.92, and for “With using cloud accounting, you can access your accounts and key financial figures at any time” is 4.16 and for the question of “Using cloud accounting provides the ability for any user to access information In return.” is 3.97. However, participants disagree about the statement that “Multiple entry points may lead to having issues with

“duplicated entries” as the average is 2.31. Additionally, the standard deviations of the all questions are relatively low which means that the obtained results are reliable.

We have also calculated the total score of the above ten questions to see the level of participants’ knowledge about the influence of cloud accounting systems on managing users and their authority limitations. The scores were categorized as low, medium, and high. High means that participants agreed in all the above questions, medium means that participants agreed in at least four questions out of six. The pie chart indicates that more than 44% of participants' score is high, over 32% of the score is medium and only over 23% of participants' score is low, the results are depicted in Figure 5. This means that most participants agreed on four questions or more.

Figure 5.

*The flowchart of the total score of the above ten firm’s questions*



### **Benefits and Risks of Using Cloud Accounting Overview**

Every system has its limitations and benefits. Thus, we have included some questions about identifying the benefits and potential risks of cloud accounting. Table 4 illustrates that using cloud accounting can reduce the time between data entry and receiver (on average is 4.24). Another benefit that participants agreed is that it provides the same functionality as desktop (average is 3.53), Cloud accounting ensures that accounting software and operating results are available to you from a browser or mobile device (average is 4.27). One of the benefits is that various types of platforms

can be used such as laptops, phones, PC and etc (average is 4.27). The benefits of saving data and transferring, and sharing data, reducing costs, and minimizing errors are also recognized by participants.

Additionally, there are some risks associated with cloud accounting such as facing the cloud accounting negatively affects the quality and credibility of accounting information, and also the need for advanced IT technicians are also identified. On average, participants agreed on the above limitations and benefits of using the cloud accounting system.

Table 4.

*Results of average and standard deviation the influence of cloud accounting systems on benefits and potential risks of cloud accounting*

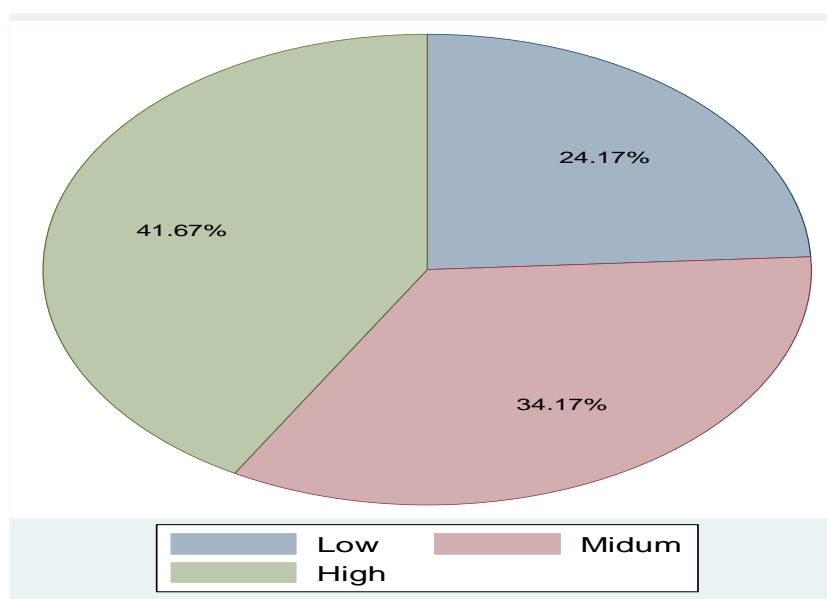
<b>Questions of identifying the benefits and risks when using cloud accounting systems compared to offline systems</b>	<b>N</b>	<b>Mean</b>	<b>Standard deviation</b>
Can also present daily transactions to companies and users of information. on the same day.	120	3.97	0.82
Using a Cloud accounting system reduces the time between Data entry and Data receiver.	120	4.24	0.62
The risks facing cloud accounting negatively affect the quality and credibility of accounting information	120	4.18	0.58
Provides much of the same functionality as desktop accounting software.	120	3.53	0.71
You can use a different kinds of platforms such as PCs, laptops, cellphones, and PDA	120	4.25	0.61
Cloud accounting ensures that accounting software and operating results are available to you from a browser or mobile device	120	4.27	0.62
IT Skills needed for users and providers of cloud accounting	120	3.37	1.35
Customer or suppliers Unfamiliarity with technologies and experience in cloud accounting causes issues with reading accounting output	120	3.63	1.05

Using cloud accounting reduces your IT costs and saves you time by keeping you constantly connected to the business.	120	4.27	0.62
Able to Move the data between computers, Sharing data with the business customers.	120	4.07	0.73
Within the cloud, your data and records are all saved and backed up with high levels of encryption.	120	4.21	0.66
The probability of the errors in transfer accounting data decrease because most of the accounting operations are done automatically within the cloud	120	3.63	1.04

The scores are categorized as low, medium, and high. High means that participants agreed on all the above of 13 questions. Low means participants agreed on less than 7 questions out of 13. medium means that participants agreed on at least 10 questions out of 10 questions The pie chart indicates that more than 41% of participants' scores are high, over 34% of the score are medium and only over 23% of participants' scores are low. This means that most participants agreed on the above statements on the benefits and risks of the cloud accounting system. The results are depicted in Figure 6.

Figure 6.

*The flowchart of benefits and potential risks of cloud accounting*





### Increase of Quality of Accounting Information Overview

Cloud accounting systems can also increase the quality of accounting information and it has an impact on having zero errors in accounting reports. The impact can be identified in terms of reducing errors, quality of information, data protection, and cost reduction.

There are eight questions related to using cloud accounting to increase the quality of accounting information. Participants agreed that cloud accounting brings zero errors to SMEs, quality of information will be up to standard, information can be easily protected, amendments can be easily made, no installation is required and expenses and costs can be reduced. The average answers of participants of all questions are almost 4 which means they agreed. The standard deviations of all questions are relatively low which means that reliable results were obtained. The results are depicted in Table 5.

Table 5.

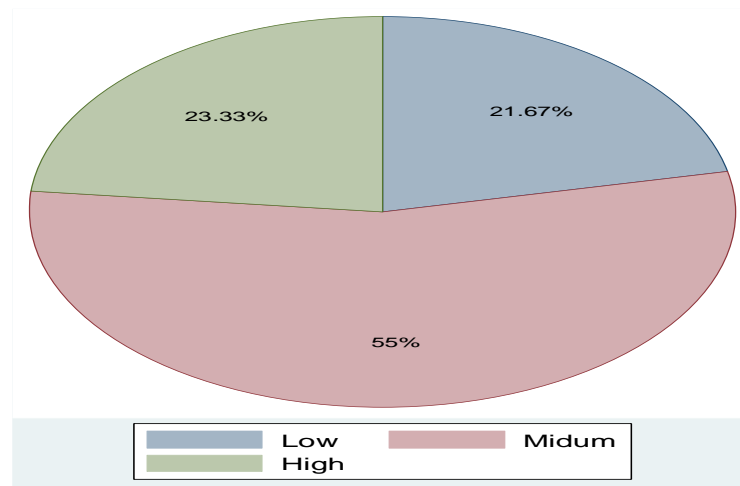
*Results of average and standard deviation showing the impact of increasing the quality of accounting information*

<b>Questions of the impact of cloud on providing and increasing the quality of accounting information in terms of time and zero error accounting reports</b>	<b>N</b>	<b>Mean</b>	<b>Standard deviation</b>
Cloud accounting technology among firms brings zero error on collected data	120	4.18	0.66
Cloud accounting system achieves the quality of convenience in accounting information.	120	4.25	0.65
Availability of feedback feature in Cloud accounting makes it easier to identify any malfunction and to correct it	120	4.23	0.66
Ensure Protect your information and data from being lost or hacked	120	4.23	0.66
Cloud accounting requires the development of the standard, commitment to a technological accounting	120	3.35	1.02f
Installation or updating is not a requirement – server Providers of cloud accounting protects software and automatically will be updates	120	4.23	0.66
Server providers of cloud accounting should continue to strengthen the training of existing accounting and information talents.	120	3.58	0.98
Reduces expenses and no initial cost for application or long term commitments the cost of cloud accounting is monthly payment without buying	120	4.23	0.66

The scores are categorized as low, medium, and high. High means that participants agreed in all of the above out of 8 questions. Low means participants agreed on less than 4 questions out of 8. medium means that participants agreed on at least 6 questions out of 8 questions and high means that participants agreed on more than 6 questions as depicted in Figure 7. The pie chart indicates that more than 23% of participants' scores are high, 55% of the score are medium and only over 21% of participants scored are low. This means that most participants agreed on the above statements on the increase of quality of accounting information and reports.

Figure 7.

*The flowchart showing the impact of increasing the quality of accounting information*



### **P-Value Test and Discussion**

We have investigated whether there is a relationship between the discussed variables and have tested each of the hypothesis separately and statistically tested. This means that we can explore how the participants have answered a specific question regarding a specific variable. The impacts and the results also identified the relation between each variable and hypothesis. All tables in this section are showing relationships and correlations where Table 6 is showing the influence of cloud accounting systems against on collecting accounting data, Table 7 is showing the managing users and their authority limitations against cloud accounting systems, Table 8 is showing the benefits and risks off using cloud accounting against the influence of cloud accounting system, Table 9 is showing the impact of Increasing of quality of accounting information against cloud accounting systems.

Table 6.

*Results showing there is relationship between cloud accounting systems and collecting accounting data*

Chi-square test 1	The influence of cloud accounting systems				
		Low	Medium	High	Total
Cloud accounting systems on collecting accounting data	Low	6	0	8	14
	Medium	13	9	17	39
	High	20	19	28	67
	Total	39	28	53	120
Chi-square test	Pearson chi-square =4.7432 P-value=0.0271				

Since the p-value is less than 0.05, there is a relationship between the use of cloud accounting and collecting account data.

(Claudiu Brandasa, Ovidiu Megana, Otniel Didragaa, 2015) discovered that the use of online technologies within firms has a significant impact on the firm's administration as well. These apparatuses change the way in which firms make business. For most of the big enterprises, the use of cloud or hybrid cloud-based systems involves managing business based on the mutual services architecture. Analyzing and collecting data in accounting information are critical for the firms (Such as general ledger, payroll and sales transactions). They form the very basis for report and analysis. In this part we identified the data collected as a very start at the accounting process and our result (P value) shows that cloud accounting system can increase the accuracy of data entry, storage and organization.

Table 7.

*Results showing the Impact of cloud accounting systems on managing users and their authority limitations*

Chi-square test - 2	The influence of cloud accounting systems				
		Low	Medium	High	Total
Managing users and their authority limitations	Low	4	4	6	14
	Medium	9	13	17	39
	High	16	24	27	67
	Total	29	41	50	120
Chi-square test	Pearson chi-square =4.429 P-value= 0.0387				

Since the p-value is less than 0.05, there is a relationship between managing users and the of using cloud accounting system.

The reduction for the cost have been achieved by using cloud systems (by paying only for what is needed and thereby avoiding upfront costs for various resources) and this has a positive impact on the SMEs usage of cloud computing. (Gupta, S, Raj, 2013), And our results for the tested hypothesis provided that there is statistically significant impact between the cloud accounting system and users' management. For example, a manager may have access to the Purchase price, while other employees at the lower rank may not.

Table 8.

*Results showing the benefits and risks of using cloud accounting against the influence of cloud accounting system*

		<b>The influence of cloud accounting systems</b>			
<b>Chi-square test – 3</b>		<b>Low</b>	<b>Medium</b>	<b>High</b>	<b>Total</b>
Benefits and risks of using cloud accounting	Low	2	10	2	14
	Medium	10	20	9	39
	High	14	36	17	67
	Total	26	66	28	120
Chi-square test	Pearson chi-square =4.555, P-value= 0.0336				

Majority of the previous researches have focused on the criticality issues of risk and security of online technologies. Hence some scholars regard that changing to cloud implies a security enhancement, a lot of risks and security issues still stay. Majority of the online service providers often apply strong security solutions that for most of the firms changing to cloud services causes an increase in security (MARKŪNAITĒ, 2015).

Here it can be seen that there is a statistically significant relationship between the benefits and risks with the using cloud accounting since the p-value is less than 0.05. This means that, those who agreed on the benefits and risks of cloud accounting also agreed on the using cloud accounting. using cloud accounting system comes with risks such as cyber-attack and service failure from the provider and benefits like managing remotely, work from distance and availability 24/7. While the offline doesn't come with these risks nor benefits

Table 9.

*Results showing the impact of increasing the quality of accounting information against cloud accounting systems.*

<b>The influence of cloud accounting systems</b>					
<b>Chi-square test 4</b>		<b>Low</b>	<b>Medium</b>	<b>High</b>	<b>Total</b>
Increase of quality of accounting information	Low	13	11	15	39
	Medium	7	12	9	28
	High	9	18	26	53
	Total	29	41	50	120
Chi-square test	Pearson chi-square =4.45, P-value= 0.037				

Since the p-value is less than 0.05, there is a relationship between the increase of quality in accounting information and using cloud accounting.

The result provided by (MARKŪNAITĒ, 2015) through testing the hypothesis (p value) showed that the firms select the cloud-based accounting systems due to the raise of the functionality, increase of the quality, acceptance of the business requirements. And systems lead to a dramatic increase in the productivity, enhance integrated accounting transaction processes. All of the findings concluded that these systems have great advantage in terms of raised quality of accounting report. In our study, the results (p value) demonstrated that there is significant relationship between cloud accounting system and quality of Accounting Information. We have tested the hypotheses and reached to a result that the use of cloud accounting system has relationship with the performance, data quality, and address the issues related accounting systems used by small and medium enterprises in Erbil. It has been mentioned above, we focus on the performance, quality of the accounting data, managing the users' access, risks and benefits and the other aspects of an online system. Another difference of this research is the settings in which the data is collected. Until the date of this research no research has ever been done in Erbil on Small and medium sized enterprises in regard of using cloud systems. Its worth mentioning also a lot of former scholars have given many attentions on the benefits of cloud accounting for calculations and post transactions.

### **Cronbach's Alpha**

Chronbach's Alpha provides an avenue for measuring the internal consistency of the questionnaire employed in this study. Its value lies between 0 and 1, and the

higher the value, the more reliable the questionnaire. In calculating the Cronbach's Alpha, the variables with missing values are not considered. Table 10 shows that the value of Cronbach's Alpha is 0.796, implying that the internal consistency of the questionnaire used in this study is acceptable.

Table 10.

*Cronbach's Alpha*

Items	Sample units	Alpha
46	120	0.796

### Analysis of Variance (ANOVA)

This sections starts with providing the descriptive statistics for the dependent and independent variables in Table 11

Table 11.

*Descriptive statistics*

Variables	N	Mean	Sd	Median	Trimmed	Mad	Min	Max
Usage (Q21)	120	3.9	0.85	4	3.94	1.48	2	5
Quality (Q18)	120	3.94	0.87	4	4.01	1.48	2	5
Performance (Q16)	120	4.16	0.78	4	4.24	1.48	2	5
Speed (Q28)	120	4.24	0.62	4	4.3	0	3	5

Table 12.

*Correlation coefficients*

<b>Correlation</b>	<b>Performance</b>	<b>Quality</b>	<b>Speed</b>	<b>Usage</b>
<b>Performance</b>	1.000000			
<b>Quality</b>	0.645241	1.000000		
<b>Speed</b>	0.062419	0.026208	1.000000	
<b>Usage</b>	0.127768	0.131942	0.033237	1.000000

Analysis of Variance (ANOVA) is used to estimate how a quantitative dependent variable changes according to the levels of cloud accounting system. The aim of the ANOVA test is to examine whether there is a difference in means of the groups at each level of the cloud accounting system.

The null hypothesis (H0) of the ANOVA is no difference in means, and it is tested against the alternative hypothesis (H1) that the means are different from one another.

Since our study employs only cloud accounting system as independent variable, one-way ANOVA (one independent variable) is the most appropriate test.

Table 13.

*Analysis of variance*

	<b>Df</b>	<b>Sum Sq</b>	<b>Mean Sq</b>	<b>F value</b>	<b>Prob (&gt;F)</b>
<b>Quality</b>	1	2.94	2.94	4.09	0.01
<b>Residuals</b>	118	85.29	0.72		
<b>Speed</b>	1	2.85	2.85	3.96	0.01

<b>Residuals</b>	118	85.38	0.72		
<b>Performance</b>	1	3.13	3.13	4.35	0.01
<b>Residuals</b>	118	86.70	0.72		
*** indicates statistical significance at 1%					

Table 13 shows the summary of the ANOVA results. The table lists the dependent variables being tested in the model and the model residuals for each model. All of the variation that is not explained by the independent variables is called residual variance.

The Df column represents the degrees of freedom for the independent variable, the Sum Sq column shows the sum of squares, the Mean Sq column stands for the sum of squares. The F-value column is the test statistic from the F test. The Pr(>F) column is the p-value of the F-statistic. The p-value of the usage of cloud accounting system variable is low ( $p < 0.001$ ) in each model. Therefore, the type of cloud accounting system has a real impact on the quality, speed and performance of the accounting information reporting.

The results from the foregoing analysis conform to the outcomes of studies. However, the results obtained by Ghaffar et'al (2019) have stronger correlation coefficients.

### Reliability Test

To check the reliability of the measure, the sample is divided into halves or the so called split-half reliability. Table 14 reports the ANOVA results for the first half, while Table 15 contains the ANOVA for the second half.

Table 14.

#### *Analysis of variance (reliability)*

	<b>Df</b>	<b>Sum Sq</b>	<b>Mean Sq</b>	<b>F value</b>	<b>Prob (&gt;F)</b>
<b>Quality</b>	1	0.90	0.90	2.09	0.01
<b>Residuals</b>	58	43.29	0.43		



<b>Speed</b>	1	0.85	0.85	1.96	0.04
<b>Residuals</b>	58	43.38	0.41		
<b>Performance</b>	1	0.87	0.87	2.55	0.03
<b>Residuals</b>	58	42.70	0.34		

\*\*\* indicates statistical significance at 1%

Table 15.

*Analysis of Variance (reliability)*

	<b>Df</b>	<b>Sum Sq</b>	<b>Mean Sq</b>	<b>F value</b>	<b>Prob (&gt;F)</b>
<b>Quality</b>	1	0.88	0.88	2.19	0.03
<b>Residuals</b>	58	43.39	0.40		
<b>Speed</b>	1	0.91	0.91	1.99	0.03
<b>Residuals</b>	58	43.38	0.46		
<b>Performance</b>	1	0.78	0.78	2.52	0.03
<b>Residuals</b>	58	42.70	0.31		

\*\*\* indicates statistical significance at 1%

### Regression Results

The Table 16 below presents the results of the regression. The independent variable is usage, while the dependent variables are performance, speed and quality for models 1, 2 and 3 respectively

Table 16.

*Regression results; usage as independent variable*

<b>Models</b>	<b>Dependent variable</b>	<b>Coefficient</b>	<b>Prob.</b>	<b>Adj. R-squared</b>
Model 1	Performance	0.116***	0.06	0.23
Model 2	Quality	0.135**	0.04	0.21
Model 3	speed	0.024**	0.03	0.26

\*\* and \*\*\* signify significance at 5% and 10% percent respectively

The regression results show at usage of cloud accounting system is statistically significant for all the three models. The adjusted R-squared indicate that, after adjusting for degree of freedom, the variation in performance, quality and speed is explained by the level of usage of cloud accounting system by 23%, 21% and 26% respectively. In addition to that, the coefficient of usage of cloud account system is

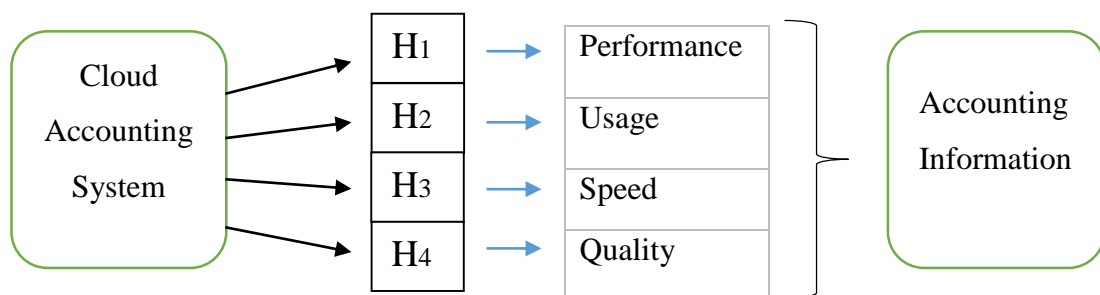
positive for all the three models, implying positive impact of the cloud accounting on performance, quality and speed. The results from the foregoing analysis conform to the outcomes of studies. However, the results obtained by Ghaffar et'al (2019) have stronger correlation coefficients. Furthermore, the values Cronbach's Alpha in Ghaffar et'al (2019) larger. However, this study, as in previous studies, indicates positive impact of technology in managing the SMEs.

### Conceptual Model

The use of ideas that have been explained in examinations, the below conceptual model can be designed to test the impact of cloud accounting system on the accounting information. Some of the researches focusing on the cloud accounting approaching the topic conceptually, highlighting the benefits of cloud accounting for the firms. Handful number of them concentrating the possible threat on the organization (Yau-Yeung, 2017). This way of separating the variables helps to specify the advantages for each of the provided hypothesis. This segregation is based on the impact of the variables on the accounting information. The concept developed evaluates the influence of performance, speed, usage, and quality on the accounting information and how to improve the model. Many studies used conceptual and descriptive analyses like ours to assess the use of cloud accounting system in SMEs in order to show the relation between the questioners and the variables to establish the provided model.

Figure 8.

#### *Conceptual framework*



Using concepts that involving a constant ( $\alpha$ ), parameters represented by  $\beta$  and an error term ( $\mu$ ). Since the conceptual model was linked to Accounting Information(AI) in four different ways, the model was derived from four dependent variables collecting Performance (P), Usage (U), Speed (S), Quality (Q). This resulted in the development of the following regression model;

$$AI = \alpha + \beta_1P + \beta_2U + \beta_3S + \beta_4Q + \mu \dots\dots\dots(1)$$

Independent t-tests were used to test the proposed hypothesis and determine if the provided regression results. Using the established regression model structure, the following regress hypotheses were established as follows:

The study has managed to identify and test ways through which, Cloud accounting system affects accounting informations using data collected from SMEs. Four related connections were established and observed to be influencing SMEs through performance, usage, speed and quality.

All of the hypothesis tested and were accepted leading to suggestions that using cloud accounting system positively and significantly related to variables. Table 17 provides a summary of the established hypotheses results.

Table 17.

*Summary of the hypotheses results*

<b>Null hypotheses</b>	<b>Relationship results</b>	<b>Hypothesis decision</b>
Cloud accounting system has a positive impact on the quality controlled data flow in an accounting report in Erbil SMEs	Significantly Positive	Accept
Cloud accounting system has a positive impact on the managing users and their authority limitations on the cloud accounting system report in Erbil SMEs.	Significantly Positive	Accept
Cloud accounting system has relationship with risks and benefits when compared to an offline system in Erbil SMEs.	Significantly positive	Accept
Cloud accounting system has a positive impact on the quality of Accounting report and decreasing errors at Erbil SMEs.	Significantly positive	Accept

## CHAPTER V

### Conclusions and Recommendations

#### Conclusions

The current theory was intended to decide the effect of accounting practices utilizing cloud computing. As expressed in the starting statement the cloud accounting is viewed by some as the most recent illustration of providing an accounting system as a metered service to organizations. This work proposes a resolution and accepts that this assertion in all actuality yields efficiency and that the whole business accounting process can be upheld. This research closed the apparent argument between the more youthful ages of Digital Natives contrasted with the existing labor force. The work removes the idea that organizations don't really work within their own limits.

This thesis utilized a quantitative research approach for collecting data using a questionnaire. The collected data were coded and analyzed after data collection using a statistical package (SPSS). The experiment was tested using various hypotheses and variables. Several correlations and similarities were discussed in regards to the results. The impact of increasing the quality of accounting information against the benefits and risks of using cloud accounting was analyzed. The result can be seen that there is a statistically significant relationship between the increase in quality of accounting information and benefits and risks of using cloud accounting since the p-value is less than 0.05. This means that those who agreed on the benefits and risks of cloud accounting also agreed on the increase of quality of accounting information using cloud accounting. This is a strong validation that cloud accounting impacts company businesses.

The review gave particular impacts in regards to the relationships between cloud accounting and accounting information in companies. The two factors were emphatically and fundamentally associated with one another. Consequently, it tends to be induced at this stage that an expansion in organization system calls for cloud accounting viable measures for assistance to further develop accounting execution. This comes with the advantage cloud accounting has, it offers numerous accounting resources that can be accessed from anywhere. Notwithstanding, the outcomes were

in logical inconsistency with past examinations as they featured that cloud accounting execution will improve as the companies' accounting system develops.

The overall research presented is the impacts of the relocation to a cloud accounting system of some of the operations in the processing accounting circle on specific period of times. The researcher focused on quality of the data and performance through the use of the online systems. The responses received from all of the participants on different positions and responsibilities that were practicing in the field of finance and accounting at the time of the study. All of the collected data several statistical tests. The outcomes reached in this research is implies that a lot of transactions and managerial could easily be shifted into the cloud with better quality and practical performance level. This research opens many doors for potential researchers with the final objective in mind to come up with new approach for an online accounting cloud concept. In this regards, the major study directions for the current action so as to support the notion of using an online cloud accounting could be more focus on the practicality, quality of the out and user friendly of the cloud systems.

Generally, with the presence of huge data in this century, as soon as the firms want to stay invincible in the dramatically raising of the fierce competition in the business market, it must be more open to accept the changes of the environment and their approach for the new world. And this achieved by committing to enhance the firm's products and administrative capacity. An online system for accounting information not only enhances the efficiency of transactions related to firm's accounting, however takes control over the firms' efforts in the accounting work, improves the sensitivity for the business ups and downs as soon as possible, and comes up with continuous development plans for the firm. That's why, the firms should improve and work on enhancing the quality and administrative capacity of accounting systems and the employees based on the real environment of the recent business market. This will defiantly imply that cloud accounting system are going to play much bigger role in the firms accounting information in a foreseeable future.

### **Recommendations**

In addition, future exploration could investigate a more philosophical bearing of involving the Cloud for accounting practices. This would be efficient to research examination for the explanation that a more granulated comprehension of the cloud

accounting peculiarity and business as a whole can be achieved. It is additionally a cultural inquiry found by institutional hypothesis; future exploration can involve flagging hypothesis for example. The aim is to see how the Cloud hampers accounting practice, further examination could analyze why cloud accounting peculiarity occurs. Most importantly, this proposal ought to be viewed as a boost to feature the issues which are underlying in regards to the cloud accounting peculiarity.

- Having set up reverberating discoveries of the intervening impacts of cloud accounting on accounting information in different small and medium enterprises in Erbil- Iraq, the accompanying proposals for recommendation are described below;
- SMEs can make use of cloud accounting as a risk free system in sharing information with internal and external users,
- Since the cloud accounting system has a positive impact on the quality-controlled data flow in an accounting report, the use of cloud accounting will help SMEs in providing high quality of accounting output.
- based on this research Cloud accounting system able to manage users and limit their access, to sensitive data, location access, periodic report and specific activity
- SMEs should know that there are powerful accounting and executive cloud accounting executions that doesn't obstruct business exercises. which enables them to shift from an offline to an online accounting system.

### **Suggestion for Future Studies**

Future studies should tackle deference firms and try to assess the use of the cloud accounting system on a higher scales such as the national and international non profit organizations to identify the gaps and come up with possible solution faced during the management of the accounting performance. Studies that will consider specific cloud accounting software will be a good idea. Future studies can also focus on specific industry or specific set of industries instead various industries.

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## APPENDICES

### Appendix A: Questionnaire form

#### The Impact of the use of cloud accounting systems on the quality of accounting information at SME in Erbil

##### SECTION ONE: DEMOGRAPHY SECTION

1. Gender	
<input type="checkbox"/> Male	<input type="checkbox"/> Female
2.. Age	
<input type="checkbox"/> Less than 25 years	<input type="checkbox"/> 26-37 years
<input type="checkbox"/> 38-49 years	<input type="checkbox"/> 50 years and above
3. Education	
<input type="checkbox"/> High School	<input type="checkbox"/> Bachelor's Degree
<input type="checkbox"/> Diploma	<input type="checkbox"/> Master's Degree
4. How long have you been working in accounting positions?	
<input type="checkbox"/> 1-3 years	<input type="checkbox"/> 4-6 years
<input type="checkbox"/> 7-9 years	<input type="checkbox"/> 10 years and above
5. What is your role in this organization?	
<input type="checkbox"/> Bookkeeper	<input type="checkbox"/> Accounts manager
<input type="checkbox"/> Accountant	<input type="checkbox"/> Auditors

6. How big is your firm in terms of employees?	
<input type="checkbox"/> Small size (1-10 employees)	<input type="checkbox"/> Medium Size (10-50)
<input type="checkbox"/> Medium Size (51-150)	<input type="checkbox"/> Large Size (over 150)
7. Does your Firm use accounting software?	
<input type="checkbox"/> Yes	<input type="checkbox"/> No
8. Is your firm's System cloud (online)?	
<input type="checkbox"/> Yes	<input type="checkbox"/> No
9. IF USING CLOUD; When did you make the switch to cloud accounting practice systems?	
__Years      __months	<input type="checkbox"/> they used it already when I joined the firm
10. If not using the cloud : Do you have any intention to shift to the cloud?	
<input type="checkbox"/> Yes	<input type="checkbox"/> No

## SECTION TWO: INFORMATIVE SECTION

This section contains statements that measure the use of the cloud accounting effects on the collecting,organizing and analyzing accounting data. Please tick your response according to the following scale:

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

		1	2	3	4	5
	Questionnaire on Cloud accounting systems on collecting, organizing and accounting data and analysis					
	Collecting documents (Sale/purchase invoices, Good's receipt notes, receipts, bank statements, etc.) for accounting processing.					
	Directly records transactions within the cloud in all Departments.					
	Probability of the errors in transfer accounting data decrease because most of the accounting operations are done automatically within the cloud.					
	Using cloud accounting technology among firms brings zero error on collected data					
	it's a new opportunity to provide the accounting information right on time.					
	can also present daily transactions to companies and users of information. at the same day.					
	Using Cloud accounting system reduces the time between Data entry and Data receiver.					
	Centralizing and transposing of data, Sort the data in chronological order beside on accounting standards.					
	Centralizing and transposing of data in social and tax statements					
	The risks facing the cloud accounting negatively affect On the quality and credibility of accounting information					
	provides the verifies access to the same results as the users are on the same programs and methods used.					
	Accomplishes the analytical and synthetic information on Accounting.					

	cloud accounting system achieves the quality of convenience in accounting information.					
	provides much of the same functionality as desktop accounting software.					
	You can use difference kind of platforms such as PCs, laptops, cellphones and PDA					
	Cloud accounting ensures that accounting software and operating results are available to you from a browser or mobile device					
	cloud accounting is a successful tool in implementing strategic plans of organization to achieve a new performance measurement system					

28	With using cloud accounting, you can access your accounts and key financial figures at anytime					
29	Using cloud accounting reduces your IT costs and saves you time by keeping you constantly connected to the business					
30	Within cloud your data and records are all saved and backed up with high levels of encryption.					
31	Availability of feedback feature in Cloud accounting makes it easier to identify any malfunction and to correct it					
32	using cloud accounting provides the ability for any user to access information In return					
33	ensure Protect your information and data from being loss or hacked					

34	Determines the rate of development of accounting information for the company					
35	Cloud accounting requires the development of standard, commitment to a technological accounting					
36	IT Skills needed for users and providers of cloud accounting					
37	Using cloud accounting is accurate entry of accounting data and numbers On the cloud to increase the correct and positive affect the quality the information					
38	The system of cloud accounting requires the development of binding standards to join the technical and accounting qualification and training programs for users and providers of computing services					
39	Customer or suppliers Unfamiliarity with technologies and experience in cloud accounting causes issues with reading accounting output					
40	Multiple entry points may lead to having issues with duplicated entries.					
41	Able to Move the data between computers, Sharing data within the business customers.					
42	Determining the profit or loss, profit distribution or funding loss, setting out the final balance of accounts					
43	Cloud accounting can improve the efficiency of work related to enterprise accounting process					

44	Installation or updating is not requirement – server Providers of cloud accounting protects software and automatically will be updates					
45	Reduces expenses and no initial cost for application or long term commitments the cost of cloud accounting is monthly payment without buying					
46	Server provider of cloud accounting should continue to strengthen the training of existing accounting and information talents.					

Thank you for your participation



**Appendix B: Permissions Regarding the Use of Scales****BİLİMSEL ARAŞTIRMALAR ETİK KURULU**

27.11.2021

Dear Sangar Qadr Hamed

Your application titled **“The Impact of the use of cloud accounting systems on the quality of accounting information at SME in Erbil”** with the application number NEU/SS/2021/1158 has been evaluated by the Scientific Research Ethics Committee and granted approval. You can start your research on the condition that you will abide by the information provided in your application form.

Assoc. Prof. Dr. Direnç Kanol

Rapporteur of the Scientific Research Ethics Committee

**Note:** If you need to provide an official letter to an institution with the signature of the Head of NEU Scientific Research Ethics Committee, please apply to the secretariat of the ethics committee by showing this document.

## Appendix C: Turnitin Similarity Report

### THE IMPACT OF THE USE OF CLOUD ACCOUNTING SYSTEMS ON THE QUALITY OF ACCOUNTING INFORMATION AT SME IN ERBIL

#### ORIGINALITY REPORT

<b>11</b> %	<b>9</b> %	<b>3</b> %	<b>3</b> %
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

#### PRIMARY SOURCES

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<b>2</b>	Submitted to King's Own Institute Student Paper	<b>1</b> %
<b>3</b>	<a href="http://eprints.qut.edu.au">eprints.qut.edu.au</a> Internet Source	<b>1</b> %
<b>4</b>	<a href="http://cyberleninka.org">cyberleninka.org</a> Internet Source	<b>1</b> %
<b>5</b>	<a href="http://docs.neu.edu.tr">docs.neu.edu.tr</a> Internet Source	<b>1</b> %
<b>6</b>	<a href="http://pdfs.semanticscholar.org">pdfs.semanticscholar.org</a> Internet Source	<b>1</b> %
<b>7</b>	<a href="http://www.researchgate.net">www.researchgate.net</a> Internet Source	<b>1</b> %
<b>8</b>	<a href="http://journal.mufad.org.tr">journal.mufad.org.tr</a> Internet Source	<b>1</b> %

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