Factors Influencing the Implementation of Cloud Accounting:
Evidence from Small and medium Enterprises in Oman

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Abstract

Purpose: This study investigates the factors influencing the adoption of cloud accounting (CA) in Oman’s small and medium enterprises. The research model is developed based on relationships between technology, organisational, and environmental (TOE) contexts.

Methodology: The study used a questionnaire to collect data from a sample of small and medium enterprises in Oman’s information and communication sector. Three-hundred (300) Enterprises were selected, and the questionnaire was distributed to the executives. The questionnaires valid for analysis were 159. The collected data were analysed using Structural Equation Modelling (SEM) through AMOS software.

Findings: The study tested seven factors, namely support from Top Management (TM), Firm Size (FS), Infrastructure (Technology Readiness) (TR), Security and Privacy (SP), Compatibility (CO), Competitive Pressure (CP), and Relative Advantage (RA). The results revealed that compatibility has a significant impact on the adoption of cloud accounting.

Practical implications: The study suggests the mangers in small and medium enterprises should play a more decisive role in identification of technological, organizational and environmental factors that affect the success of implementing cloud accounting in a comprehensive model.

Originality/value: The study constitutes a management strategy that helps the enterprises in light of limited economic resources and concerns about the use of cloud services to make the appropriate decision in adopting cloud accounting.

Keywords: Cloud Accounting; Top Management; Firm Size; Technology Readiness; Security and Privacy; Compatibility; Competitive Pressure; Relative Advantage; Oman.

1. Introduction

The use of information and communications technology (ICT) can improve business competitiveness and provides competitive advantages to all organizations (Phutthong, 2022). Cloud computing is an important area for information technology innovation and investment (Armbrust et al., 2010; Tuncay, 2010). It represents a new way to use information technology resources more efficiently. Cloud computing is considered the most important technical development in recent years in IT. It is the second-largest boom in web technology, which is expected to lead the business world in the future. Cloud computing creates an appropriate environment for enterprises to compete under the current economic conditions. It is a kind of distributed system that consists of a group of interconnected computers that are provided dynamically, offered by one or more vendors based on service level agreements (Buyya et al., 2008).

Unlike traditional computing needs, cloud computing is based on the user not needing to store any of his data on his devices and not needing varied or complex programmes (Tuncay, 2010). This means that users have unlimited ability to process information, are able to access data any time and from anywhere connected to the Internet (Wyslokca and Jelonek, 2015). Cloud computing has become a shining star over the past years. This model is implemented through three different technologies, which constitute its infrastructure. These three technologies are web services, virtualisation and network computing (Armbrust et al., 2010). Cloud computing processing reduces automation and computing costs and restrictions on individuals and enterprises and reduces infrastructure maintenance costs, and provides effective management and user access (Lu et al., 2013).
IT providers focus on the cloud model because the sector is growing very fast. The number of users of cloud services around the world increased rapidly to 44.2 billion in 2013 (Özdemir & Elitaş, 2015). Although the number of customers using cloud accounts is increasing rapidly, developed countries are far ahead of developing countries with regard to the use of cloud services. One of the reasons for this is that the number of Internet users is higher in developed countries. The percentage of the population with access to the Internet in developing countries is 41.3%, compared to 81% in developed countries. Developing countries need to realise that this system is necessary for survival and growth in this competitive global village. The impressive growth of cloud service users indicates the importance of cloud services in today’s life. Besides, using cloud services is a new way to exploit IT resources more efficiently, thereby contributing to job creation and environmental protection (Armbrust et al., 2010).

In times of crisis, such as the COVID-19 pandemic, changes in the entrepreneurship environment are more inclusive resulting in a significant increase in the level of uncertainty that can be daunting for entrepreneurs (Packard et al. 2017). However, due to human aversion to uncertainty, they adopt a cognitive mechanism (Packard et al. 2017) and take a series of actions to reduce the uncertainty they must undergo through the entrepreneurial process (Wood 2017). The COVID-19 pandemic overturned business on an unprecedented scale. The pandemic contributed to the weakening of business by affecting its productivity as well as overall economic growth (Al-Maliki, et al, 2021). In contrast, other sectors were positively affected by the pandemic. The cloud computing sector is considered among the sectors that have benefitted most. The global impact of COVID-19 on the cloud market’s size is expected to grow from $ 233 billion in 2019 to $ 295 billion by 2021, with a compound annual growth rate (CAGR) of 12.5% over the forecast period 1.

Accounting has evolved over the past decades, with every new addition and innovation making it better able to face challenges while providing user satisfaction. Accounting reached its current stage of technological development after it had undergone gradual changes. There has been a consistent modification and development from manual methods to technological alternatives, making accounting easier and more user-friendly. The recent shift in accounting towards faster technologies has dramatically increased its ability to serve users. Mohanty & Mishra (2017) argue that the cloud accounting model allows all participants in accounting work (business owners, accountants, auditors and customers) to access recent financial statements at the same time via the Internet. If accountants allow technology to prove its value, the accounting profession can ultimately function as a world record entity and take companies to a higher proficiency level.

Cloud computing has become an important research topic as it enables enterprises to process data along the value chain activities (financing, sales, distribution and customer service) (Low et al., 2011; Lin & Chen, 2012). Much research has discussed cloud computing as a new technical development that can provide many strategic and operational advantages for those who adopt it. Interestingly, there is limited research on cloud accounting, most of which has attempted to explain the theoretical problems of cloud accounting, the advantages and disadvantages associated with its use (Păcurari and Nechita, 2013; Zhang and Gu, 2013; Dimitriu and Matei, 2014; Corkern et al., 2015; Weir et al., 2017). Moreover, the majority of studies of adopting cloud accounting and the factors that affect it were conducted outside the Omani context.

Many reasons led the researchers to choose Oman. Oman differentiates itself from developed countries based on size, efficiency of information infrastructure, and market structure (Dalwai, and Salehi, 2021). Oman, as a developing country, faces many challenges in the field of cloud services. There is a need to increase interest in cloud computing technologies, especially as Oman’s Digital Vision 2030 and 2040 aims to lead in digital transformation and innovation. In addition, the spread of the COVID-19 pandemic has been an important factor in the increased use of cloud computing applications. On the other hand, Reports and studies indicate that the use of cloud and accounting computing is still very low in the Arab region (Rababah et al., 2020; Al-Baluchi et al. 2020). In Oman, there is a lot of talk about cloud computing and accounting, but many are unaware of its practical applications and the extent of its quality. There is no study on cloud accounting in the context of the Sultanate of Oman. As such, the research problem focuses on the factors that affect the adoption of cloud accounting in the Sultanate of Oman. The primary objective of this paper is to explain the need for cloud accounting in a developing country like the Sultanate of Oman and understand the factors that affect its adoption. This study contributes to the literature by providing comprehensive evidence explaining cloud accounting and the factors affecting its adoption. This topic has not been addressed in Gulf Cooperation Council (GCC). Second, this study is consistent with the point of view that cloud computing offers many advantages and that the accounting information system supported by information technology is the cornerstone of the new knowledge economy. Third, the study is useful for policymakers planning to adopt cloud accounting who can then check whether their organisational environments and factors related to information systems are favourable for applying cloud accounting.

2. Literature Review
2.1. Cloud Computing
The concept of cloud is obtained from the idea that companies and users are able to gain access to applications anywhere around the world on demand (Low et al., 2011). Clouds are a large group of virtual resource in which the computing sources are provided as services upon request by the service users, thus allowing the users access to the cloud over the Internet, from any place and at any time, without having their infrastructure, knowledge or experience that supports these services. Such conditions enable the optimal use of resources.

Cloud computing is a new paradigm shift. It provides highly scalable information technology-related abilities as a service to users using Internet technologies. Cloud computing is defined as “technology that relies on the transfer of processing and storage space of a computer to the so-called cloud, and it is a server device that is accessed via the Internet, and thus the information technology turns from products to services” (Erdogmus, 2009). According to Buyya et al. (2008), Cloud computing is a parallel and distributed system that consists of a set of interconnected computers that are provided dynamically and presented as one or more unified computing resources based on service level agreements. Zalazar et al. (2017) and Sabi et al. (2016) defined it as a model that aims to provide a suitable endpoint access system with no purchase of software, platform, or network physical infrastructure required. Based on previous definitions, cloud computing is a system that can be accessed anywhere using any Internet-connected device.

With cloud computing, all types of organisations, small and medium enterprises to multinationals can use cloud computing to access information anywhere. Different types of files, data, and applications can be accessed, a set of services can be provided from storing data to functional programmes, and cooperation between a group of remote users can also be achieved in a single cloud environment. Thus, cloud computing provides benefits that
include, among others, flexibility, scalability, ease of implementation and the ability to adapt to the requirements of the modern business environment to improve operating efficiency and enhance competitive advantage.

2.2. Cloud Accounting

Accounting, as a business language, contributes directly to supporting the activity of any institution. As is the case in other professions, accounting develops continuously because of its dynamic nature. The increasing use of computers and the remarkable advances in information technology since the early eighties have positively affected the field of accounting with advanced accounting applications and programmes (Dimitriu & Matei, 2014; Abbaszadeh et al., 2019). Cloud accounting is using the Internet and business intelligence to create a virtual accounting information system. This development and progress have found the right climate for the emergence of a new accounting to meet large companies’ desires to take advantage of the benefits of cloud computing (Păcurari & Nechita, 2013). It constructs and manages accounting systems at low cost and with sophisticated technological facilities (Christiauskas & Miseviciene, 2012), taking into account that the accounting information system is considered the cornerstone of the new knowledge economy (Sacer & Oluic, 2013). Such developments indicate that traditional accounting procedures will end (such as paper, receipts, registration, and so on). These will be implemented through accounting systems based on the Internet (such as cloud computing system and block chain technology) (Tekbas, 2018). It makes the preparation of accounts more efficient and effective and opens access to more detailed and updated information (Gupta et al., 2017). This opens the way for many digital accounting applications such as extended business reports and database management systems.

Cloud accounting is a modern accounting concept that works to process data with a set of information distribution systems and applications within the cloud information framework without the need for users to know the actual system structure (Leventis, 2013). Cloud accounting was developed by offering Net Suite, which was the first accounting software system on the Internet. Some of the most popular cloud accounting software is QuickBooks, Fresh Books, Wave, Xero, Zoho and others. The software is provided on a subscription basis and the data are stored on a remote server (Ţugui & Gheorghe, 2014). This differs from the traditional accounting system including purchasing software or installing on a local workstation or server. Access to applications and cloud accounting data is controlled by the user logging in instead of the actual situation of files. This means that sharing data is easier than transferring data from one computer to another (Onyali, 2016). Cloud-based accounting solutions enable the response to numerous complex activities via an integrated system on the Internet and, in turn, reduces the accounting department’s workload (Dimitriu and Matei, 2014). The customisation provided by cloud accounting benefits a company by enabling every small, medium or large company to customise cloud software according to its requirements. Several studies have shown that cloud computing and information technology contribute to improving financial performance through:

1. Facilitating the completion of financial transactions (Dandago and Rufai, 2014).
2. Information technology affects the way the accounting information system works and contributes to improving the preparation and processing process.
3. Increasing the accuracy in the accounting process (Moghaddam et al., 2012).
4. Information technology can improve accounting departments’ efficiency and provide results in a timely and accurate manner.
5. Improving operational performance (Qatawneh, 2012).
6. A high improvement in the level of accounting operations (Zhygalova, 2013).
Maravi and Modi (2017) summarised cloud accounting characteristics in four advantages:
1. Value added by obtaining high profits.
2. Ensuring the accuracy and quality of data.
3. Reducing technological difficulties.
4. Reducing processing time and thus increasing the profitability of employees or merging accounting tasks through a centralised system.

2.3. Research on Cloud Accounting
There are many reasons for the increasing dependence on cloud accounting. According to a study prepared by Cloud Accounting Institute (CAI), in the first quarter of 2013, the rate of growth in operations using cloud accounting is increasing, registering a huge increase of more than 43% from 2012 to 2013 (CAI, 2013). According to Accounting Today, 58% of the major companies worldwide use cloud accounting. The number is expected to rise to 78% in 2021. A survey conducted by Xero, one of the leading cloud accounting software companies, revealed that companies using cloud accounting services add five times the number of customers than companies that do not use cloud accounting services. The study also found that companies using 100% cloud-based accounting services witnessed annual revenue growth of 15% (Sobhan, 2019). Dimitriu and Matei (2014) aimed to clarify the effect of the cloud computing model on the field of accounting. They highlighted various perspectives and definitions devoted to the concept of cloud accounting and the benefits and potential risks identified by the adoption of these services, especially with regard to accounting management.

The Tarmidia, et al. (2014) aimed to measure the level of cloud computing awareness and adoption in small and medium enterprises (SMEs) by accounting practitioners in Malaysia. The results revealed interesting insights. It appeared that two thirds of the respondents were not familiar with cloud computing, and the lack of knowledge about cloud computing has prevented them from adopting the advantages that this technology is likely to offer. Tugui and Gheorghe (2014) hypothesised a shift in the accounting model in the new context of the digital economy. The results of the study showed that 64 percent of the respondents fully agree with the redesign of the accounting information system in view of the continuous digitisation of accounting flows, with the possibility of automatic data integration from the microeconomic level to the macroeconomic level. Moreover, it was noted that 24% of the respondents disagree with this change / addition of the accounting model, while 10% of the respondents expressed a neutral response and 2% disagreed. Ebenezer et al. (2014) sought to determine whether cloud computing could be applied for accounting purposes, and the positive effects that the cloud could have on companies. The results showed that it is possible to successfully implement cloud computing for accounting purposes. Although cloud accounting may not be very different from desktop accounting in nature, cloud computing has, in practice, many ways in which it can improve accounting. Özdemir and Elitâş (2015) concluded that organisations providing accounting systems services using cloud computing facilities must provide the appropriate infrastructure and models for applying cloud accounting. Web-based applications will use cloud computing facilities to operate the system without failure, store digital financial data for the facilities, and establish legal regulations to protect data security and user privacy. Khanom (2017) provided an overview of cloud accounting by presenting its concept, benefits, risk and comparing it with the traditional aspects and some other important aspects that may constitute the accounting profession in the coming years. Information was gathered based on the latest studies and research conducted by accounting professionals.
Maravi and Modi (2017) aimed to clarify the changes involved in virtual simulations of some operations in financial accounting and the organisation as a whole. The advantage of the cloud is reducing the workload and the time allotted to obtain results. Moreover, it reduces the cost of installing IT equipment. Mohanty & Mishra (2017) examined the benefits and problems of cloud accounting and their impact on the company’s accounting and decision-making capabilities. The study concluded that the cloud accounting model allows all accounting work participants (business owners, accountants, auditors and customers) to access the recent financial statements at the same time, via the Internet. If accountants allow technology to prove its value, the accounting profession can ultimately function as a world record entity and take companies to the next level of proficiency.

Al-Zoubi (2017) examined cloud computing’s effect on the elements of the accounting information system represented by accounting entity, financial operations, documents, accounting books, financial reports, users, procedures, programmers, and physical devices. The study concluded the cloud has become a place to complete operations and dialogue between employees or customers using the enterprise system. It allows individuals and companies to use programmers and physical devices without buying the software and installing it on their computers. Modi (2018) examined the benefits and issues of cloud accounting in accounting and decision-making in a company. The study concluded that cloud computing main benefit is that it helps reduce unnecessary costs such as purchasing and maintaining hardware and software and brings amenities and benefits to organisations such as business flexibility, cost reduction, automatic hardware and software upgrade, agility, and scalability.

Rao et al. (2017) conducted a comparative study of the services of five cloud accounting firms worldwide to understand the impact of cloud accounting in the current scenario with insights from accounting professionals. The study concluded that, in the near future, access to actionable business data on demand will be a daily necessity for the organisation. By using vital data for cloud accounting, business people can make more accurate and faster decisions. Soni et al. (2018) analysed the factors behind cloud software use by different sectors in Udaipur. The study sample consisted of employees in the banking sector, the insurance sector, and the retail sector of small and medium companies and chartered accountants. The study found that there is a big difference in adopting cloud programmes with the size of the organisation. The result of a one-way ANOVA indicated that there is no significant difference in the opinion of respondents working in different sectors regarding the different factors for adopting cloud accounting software.

Al-Sharafi, et al, (2017) aimed to identify the critical factors that affect the continuous use of cloud computing services in organizations. To achieve this objective, the study conducted a comprehensive review of the literature on the adoption of cloud computing services at the organizational level, in particular emphasizing the factors that determine the prolonged adoption of cloud computing services. 53 factors have been identified from previous studies on the adoption of cloud computing services. The results show that the most important factors that influence the continuous use of cloud computing services in organizations are as follows: Comparative advantage; Complexity: perceived security and privacy; Compatibility support senior managers; reduce costs; competitive pressure; IT readiness; firm size; Support vendors; regulations and government policy; Trialability Perceived reliability Perceived availability Uncertainty and perceived confidence.

Amron, et al, (2019) aimed to identify relevant factors that influence the acceptance of cloud computing implementation in an organization. After reviewing 55 articles, 21 factors that
have a high potential to influence users and organizations to use cloud computing were identified. These factors were arranged according to frequency based on the thematic analysis method as follows: compatibility, top management support, comparative advantage, security, complexity, external pressure, IT knowledge, cost, trust, testability, regulation and government support, innovation, external expertise, Engagement and Collaboration, User Experiences, Awareness, Company Size, Social Impact, Task, Vendor Support and Business Continuity.

Yau-Yeung et al. (2020) examined the application of transaction cost economics to explore the risks of cloud accounting systems and services in Australia and identified risk mitigation strategies. The study results indicate that cloud accounting introduces specific risks to the accounting process and that some of the known risks associated with other cloud-based applications are more apparent. While transactional factors such as vendor selection and contractual arrangements were considered important as risk mitigation strategies, internal measures, including policy development and employee training were deemed critical to cloud accounting.

The study of Phuthong, (2022) aimed to analyse the order of important factors influencing cloud computing adoption and examine the group of causal relationships among the factors influencing cloud adoption in Thailand’s public sector. The results indicate that factors related to assurance are the most important factor influencing the acceptance of G-Cloud in Thailand. This means that G-Cloud users, who work for various government agencies in Thailand, have accepted and used G-Cloud mainly because of trust in using the system. This is due to the ability of administrators to clearly explain the process of using the cloud system and build users' trust and reliability in the system.

On the other hand, the percentage of non-adopters appears to be stable and is likely to remain so in the near future. Technically, since the accounting cloud market offers a wide variety of solutions, those parties that adopted it must establish a system or tool in the future to choose the appropriate cloud accounting consistent with the company’s objectives, characteristics and control of cloud operations. They also need to construct the technical infrastructure and models necessary to operate the system free from defects and preserve the digital data of the enterprises’ facilities in a safe environment. The right cloud solution will improve the company’s ability to adapt to the market and enhance its competitiveness. Based on prior studies, we conclude that cloud accounting research focused on a theoretical part that deals with different perspectives and definitions about cloud accounting, its advantages, benefits of cloud computing in accounting, risks associated with it, and precautions to be taken against risks of cloud computing in the field of accounting. It also discussed the impact of cloud accounting on the elements of the accounting information system. However, there is no study on the factors that affect cloud accounting adoption, especially in the Arab region.

3. Research Hypotheses Development
Cloud computing and accounting are now transaction-based systems used as competitive weapons in organisations. According to previous studies presented in Table 1, this study examines the factors that affect the success of implementing a new technology (accounting and cloud computing). Factors are measured with an improved scale of seven factors. In this study, three basic variables were identified: organisational, technological, and environmental contexts as important factors for the adoption of cloud accounting. Study variables consist of seven sub-variables for the adoption of cloud accounting. The adoption of cloud accounting was considered the dependent variable.
3.1 Organisational Factors
3.1.1 Top management support:
Top management support is an important organisational factor that affects any organisation’s intention to adopt any new technology or system. It provides a long-term strategic vision and a commitment to creating a positive environment for innovation (Grover, 1993). Ngai et al. (2007) believe that top management support means that top management is keen to optimise the use of the organisation’s available resources. According to Rajendran (2013), the adoption of cloud computing is changing the business model. This requires changes to business processes, organisational structure, organisational culture, and the governance model. Thus, cloud computing affects many processes within an organisation. The adoption of cloud computing can lead to different outcomes depending on the strength and standing of the company’s stakeholders and their desire to embrace innovation (Tripathi, 2019). Lee and Kim (2007) argue that top management support means the need for leadership that prioritises the application of modern systems, in addition to providing the financial support required to implement the system, providing a competent manager who is able to implement the new system, and defining the appropriate method for application. Oliveira et al. (2014) believe that senior management’s knowledge of cloud computing benefits will motivate it to allocate the resources necessary for its adoption and influence the organisation’s members to implement the change. As indicated above, many prior studies have indicated that there is a positive relationship between top management support and adoption of new technology (Zhu et al., 2003; Pan and Jang, 2008; Ramamurthy et al., 2008; Low et al. ·2011; Rababah et al., 2017). The following hypothesis is proposed:

H1: Top management support has a positive effect to adoption of cloud accounting.

3.1.2 Firm size:
(Zahedi, et al, 2022) believes that the size of the firm and the response of partners and beneficiaries inside and outside the organization are among the main contributing factors at the level of the organization. Firm size is one of the main determinants of information technology innovation (Dholakia and Kshetri, 2004; Hong and Zhu, 2006). Frambach and Schliwart (2002) argued that SMEs are more flexible to make quick decisions about adopting new technologies such as cloud computing. Hus & Lin (2016) found that SMEs are adopting cloud computing due to the flexibility of expansion and cost structure, while large companies may hesitate to adopt cloud computing because it involves maintenance from IT infrastructure. Conversely, Oliveira et al. (2014) believe that companies major companies have the resources to cover the costs and risks of investing in cloud computing, while small firms mostly lack the resources to create, implement, and test cloud computing. According to Hsu et al. (2014), companies with more employees and a larger IT budget can implement cloud computing. These companies are generally companies that know the latest IT and dynamic IT trends. Thus, the size of the company is an important factor affecting the strategic importance of cloud Accounting. Given the above, the following hypothesis is proposed:

H2: Firm size has a positive effect on the adoption of cloud accounting.

3.1.3 Infrastructure (Technology Readiness):
The technological infrastructure and human resources influence the adoption of cloud accounting and computing (Kuan and Chau, 2001; To and Ngai, 2006; Pan and Jang, 2008; Zhu et al., 2006). It is a key factor in adopting any new technology. Automobiles need roads, the Internet needs broadband, mobile phones need major networks, planes need airports, etc.
Cloud computing also needs infrastructure, and lack of infrastructure is definitely the main challenge for developing countries. Since cloud computing is heavily dependent on the Internet and networks, and since cloud computing services depend on access to networks, building good, high-speed and trusted networks are considered a key component towards adopting cloud services (Gangwar, et al. 2015). The more reliable the infrastructure, the more users will be able to rely on cloud services and use them to direct new opportunities and innovations (Molnar and Schechter, 2011). Thus, the following hypothesis is proposed:

\[ H_3: \text{Infrastructure (Technology Readiness) has a positive effect on the adoption of cloud accounting.} \]

3.2. Technological Factors
3.2.1 Security and privacy:
Cloud computing is a combination of computing and storage in a shared multi-user environment, which increases security concerns due to lack of knowledge and uncertainty regarding potential security risks (Schneiderman, 2011). Security is a prominent threat for cloud computing users. Thus, most companies are concerned about security when using cloud computing. Data security is a major concern for organizations when adopting cloud applications (Ye, Miao, Chen, Chen, 2018; Kaushik & Gandhi, 2020). Stealing company data, being attacked, and accessing confidential information in the hands of competitors, it is threats facing companies. These threats are a disaster for the company’s and its future (Sobhan, 2019). Customers think there is a gap between what service providers offer and what customers want. Justas the disappearance of a customer’s money in the bank is unacceptable, it is also unacceptable to lose data in the cloud because sometimes it is invaluable to the user (Rao & Sivani, 2018). Thus, cloud service providers must take the necessary measures and controls to protect customers and their data from any threats (Zhang et al., 2014). Prior studies agreed about the influence of the perceived security on the usage and acceptance of cloud computing, specifically in SMEs (Rababah et al., 2017; Asiaei & Ab. Rahim, 2019; Senarathna et al., 2018). Therefore, the following hypotheses proposed.

\[ H_4: \text{Security has a positive effect on cloud computing adoption} \]

3.2.2 Compatibility:
is one of the important factors that contributed to the adoption of cloud computing. It refers to the degree to which new technology is perceived as consistent with new adopters’ needs (Rogers, 2003). Previous literature considered compatibility as a key factor in adopting new information system innovations (Low et al., 2011; Oliveira, et al., 2014; Premkumar, 2003). Organisations are more likely to consider adopting cloud computing if the new technology is compatible with existing business application systems and the organisations’ values. In contrast, when technology is viewed as incompatible, major changes in processes are necessary, which require significant new learning and high costs. Several studies have indicated the positive impact of Compatibility on IT adoption in organizations (Low et al., 2011; Lee & Kim, 2007; Zhu et al., 2006; Wang, et al, 2010; Oliveira et al., 2014; Rababah et al., 2020). Therefore, the following hypothesis is proposed:

\[ H_5: \text{Compatibility has a positive effect on the adoption of cloud accounting.} \]

3.3. Environment Factors
3.3.1 Relative advantage
Relative advantage is defined as the degree to which a technological factor is perceived to provide more benefit to companies than an existing idea or status quo. The relative advantage of implementing cloud computing services can bring many benefits to users, such as improved speed of business communications, efficient inter-company coordination, and
customer communications, access to mobilization of market information, time savings, and reduced administrative costs (Gatignon & Robertson, 1989; Tornatzky & Klein, 1982; Armbrust et al., 2010). On the other hand, companies may not trust the cloud computing system because it is relatively new to it (Buyya et al., 2008). Users may take a long time to understand and get used to the new system. Thus, the complexity of innovation can be an obstacle to the implementation of new technology (Premkumar et al., 1994). In sum, companies that perceive higher relative advantages in new technology are more likely to adopt this technology. Accordingly, the following hypothesis has been proposed

\( H_1: \) Relative advantage has a positive effect on the adoption of cloud accounting.

3.3.2 Competitive pressure:
Competitive pressure is an important determinant of IT adoption. With increased competition in the market, companies may feel the need to search for a competitive advantage through innovations. Competitive pressure indicates the company’s level of pressure from competitors in the market (To and Ngai, 2006; Oliveira and Martins, 2010). Fierce competition beside efficient use of resources is an important factor in innovation adoption (Kuan and Chau, 2001; Zhu et al., 2003; Salehi, 2021). Because rapid changes often characterise the technology industry, companies face competitive pressures and become more aware of competitors and the new technologies they use. The adoption of cloud computing is important because it not only changes the way companies buy and sell their products and the way they deal with customers. Rather, it benefits companies significantly through greater operational efficiency, and data collection will be more accurate (Misra and Mondal, 2010). In addition, competitive pressure is an important determinant of IT adoption (Pan and Jang, 2008). Studies have suggested that competitor pressure is an influencing factor for adopting new technology (Chong and Ooi, 2008; Lai et al., 2007; Lin and Lin, 2008; Pan and Jang, 2008; Zhu et al., 2003). Thus, the following hypothesis is proposed:

\( H_2: \) Competitive pressure has a positive effect on the adoption of cloud accounting.

4. Research Methodology
4.1. The Omani Context:
Cloud computing started in the Sultanate of Oman in 2011 by the industry leader, Oman Data Park. The company is the leading cloud computing provider, digital hosting and IT security services in the Sultanate. In 2011, the Ministry of Technology and Communications issued the Intellectual Framework for Cloud Governance. The Cloud Governance Framework aims to enhance government services provision in line with Oman’s electronic message. The framework aims also to put in place controls to minimize risks and better introduce IT initiatives. As part of Oman’s mission, this framework presents guidelines for cloud adoption. This includes risk identification, assessment process, strategies to assist, secure cloud infrastructure, and mechanisms to ensure the strategies are implemented. The Omani government has started taking important measures such as providing a partnership for cloud services so that enterprises can use them at the lowest cost. Now there are many small and medium enterprises in Oman that are ready to deploy information technology (ALrawahi & Hussaina, 2017). The study showed 70% of SMEs have adopted or used some features of cloud services, but they need awareness, training, and qualified professional staff in this field.

The SME sector in the Sultanate of Oman has faced many developments and changes since 2013. During 2017, Oman ranked third in the Arab world and thirty-third globally, in the
Riyada Index. In 2020, the Ministry of Trade and Industry issued a ministerial decision to amend the classification of small and medium enterprises according to the number of their workers and annual revenues. According to this ministerial decision, SMEs are classified as the following:

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of Employees</th>
<th>Financial Revenues (OR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro corporation</td>
<td>1 until 10</td>
<td>Less than 150,000</td>
</tr>
<tr>
<td>Small corporation</td>
<td>11– until 50</td>
<td>150,000 – 1,250,000</td>
</tr>
<tr>
<td>Medium corporation</td>
<td>51 until 150</td>
<td>1,250,000 – 5,000,000</td>
</tr>
</tbody>
</table>

Data issued by the National Center for Statistics and Information indicated that all governorates witnessed an increase in the number of small and medium-sized enterprises registered in them during 2020. The ministry of Trade and Industry indicated that the number of small and medium enterprises registered in the "Riyada" database until 2020 is more than 44,000 small and medium enterprises (Shabiba.com).

4.2 Instrument
Data for the study were collected using a questionnaire designed on the Likert five-point scale. The questionnaire questions were developed based on previous studies, as shown in Table 1. The questionnaire consisted of two parts. First, demographic characteristics were used, as shown in Table 2, comprising the number of employees, age of the company, annual sales and when cloud computing accounting was used. Second, questions regarding study variables. Statisticians and cloud computing professionals carried out a final review of the questionnaire before it was distributed. The data was analysed by AMOS using Structural Equation Modeling (SEM) although the sample size is 159 which is less than 200. However, the study of (Wolf et al., 2013) recommends rather small sample sizes as enough.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Variable</th>
<th>Study (Sources)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational Factors</td>
<td>Top management support</td>
<td>(Alam et al., 2016; Al-Dmour &amp; Al-Surkhi, 2012; Amron et al., 2019; Al-Sharafi, et al., 2019; Low, et al., 2011; Lee and Kim, 2007; Wang et al., 2010)</td>
</tr>
<tr>
<td></td>
<td>Firm size</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Infrastructure</td>
<td></td>
</tr>
<tr>
<td>Technological Factors</td>
<td>Security and Privacy</td>
<td>(Alam et al., 2016; Amron et al., 2019; Al-Sharafi, et al., 2019; Lee and Kim, 2007)</td>
</tr>
<tr>
<td></td>
<td>Compatibility</td>
<td></td>
</tr>
<tr>
<td>Environment Factors</td>
<td>Competitive pressure</td>
<td>(Alam et al., 2016, Amron et al., 2019; Al-Sharafi, et al., 2019; Lee and Kim, 2007; Wang et al., 2010)</td>
</tr>
<tr>
<td></td>
<td>Relative advantage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cloud Accounting</td>
<td>(Soni et al., 2018; Rudansky-Kloppers and Van den Bergh, 2019; Yau-Yeung et al., 2020)</td>
</tr>
</tbody>
</table>

4.3 Participants
The study sample consisted of small and medium enterprises in the Sultanate of Oman. 300 small and medium enterprises in the information and communication sector were selected, the questionnaire was sent to executives who are IT professionals. According to Low et al. (2011), “They are in a better position to understand current IT operations and corporate future trends”. The reason for choosing medium institutions in the information and communication sector, this sector is considered one of the most important sectors in the Sultanate in the field of cloud computing application. A total of 159 valid questionnaires
were received for analysis for a response rate of 53%. The response rate was low because participation was through an electronic questionnaire distributed to the sample with a follow-up to answer any inquiries. Table 2 showed that 100% of the research sample enterprises apply cloud computing/accounting, but this use is still limited to meeting internal needs. It is using some applications such as Gmail, Google drive and the cloud marketing service, which increased significantly after the Corona pandemic. Accountants in Oman have Knowledge about cloud computing(such that the accounting principles and accounting procedures are the same and will remain the same, cloud accounting will be more useful and easy to use than manual and computerized system, access to data at any time and from anywhere, it is more cost-effective, increase performance through lightness Mobility and flexibility at work, unlimited data storage, the ability to manage accounts from anywhere), and they think it can be used for accounting purposes. However, they express the opinion that this should be done with extreme caution because the financial statements are considered confidential, the difference between the nature of cloud accounting and computerized accounting is not clear for accountants who have known about cloud computing.

### Table 2 Demographic characteristics (n = 159)

<table>
<thead>
<tr>
<th>Company age (Years)</th>
<th>Number of employees</th>
<th>Annual sales (OMR Thousands)</th>
<th>Date of cloud computing use</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 5</td>
<td>26</td>
<td>&lt;1000</td>
<td>&lt; 5</td>
</tr>
<tr>
<td>5-10</td>
<td>41</td>
<td>1000-2000</td>
<td>5-10</td>
</tr>
<tr>
<td>&gt; 10</td>
<td>92</td>
<td>&gt; 2000</td>
<td>&gt; 10</td>
</tr>
</tbody>
</table>

### 5. Data Analysis

A total of 20 items were developed to capture the eight factors under investigation. Each component was measured using a five-point Likert scale. In this study, the content and construction validity of the scales were tested. The reliability and validity of the measurement of the search variables were assessed using Cronbach’s alpha. Reliability analysis indicated that the metrics were internally consistent and reasonably free from measurement errors because all alpha coefficients were greater than 0.60 after deleting the related elements low to total, as shown in Table 3 (Hair et al., 2006).

### Table 3. Cronbach’s alpha and descriptive statistics

<table>
<thead>
<tr>
<th>Variables</th>
<th>Items No.</th>
<th>Reliability</th>
<th>Mean</th>
<th>St.D.</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM</td>
<td>3</td>
<td>.744</td>
<td>3.786</td>
<td>.777</td>
<td>-.737</td>
<td>.710</td>
</tr>
<tr>
<td>FS</td>
<td>2</td>
<td>.673</td>
<td>3.718</td>
<td>.629</td>
<td>.251</td>
<td>-.602</td>
</tr>
<tr>
<td>TR</td>
<td>3</td>
<td>.758</td>
<td>3.757</td>
<td>.783</td>
<td>-.445</td>
<td>-.283</td>
</tr>
<tr>
<td>SP</td>
<td>3</td>
<td>.683</td>
<td>3.527</td>
<td>.595</td>
<td>-.058</td>
<td>-.113</td>
</tr>
<tr>
<td>CO</td>
<td>2</td>
<td>.613</td>
<td>3.516</td>
<td>.818</td>
<td>-.563</td>
<td>.002</td>
</tr>
<tr>
<td>CP</td>
<td>3</td>
<td>.712</td>
<td>3.221</td>
<td>.751</td>
<td>.084</td>
<td>-.389</td>
</tr>
<tr>
<td>RA</td>
<td>2</td>
<td>.607</td>
<td>3.515</td>
<td>.687</td>
<td>-.087</td>
<td>-.104</td>
</tr>
<tr>
<td>CA</td>
<td>2</td>
<td>.614</td>
<td>3.803</td>
<td>.516</td>
<td>-.205</td>
<td>.019</td>
</tr>
</tbody>
</table>
A descriptive analysis of the research variables was conducted. The findings in Table 3 revealed that the means of the research variables were moderate, and their values ranged between 3.221 & 3.803, and the dispersion of the values of the Chan standard deviations was low. Assessment of normality has been performed by skewness and kurtosis statistics, where their values were within the acceptable limits between (-3 and +3) according to Ghasemi and Zahediasl (2012).

Exploratory factor analysis (EFA) was performed to determine the study variables. Factor analysis with principal-component factoring methods was conducted to evaluate the construct validity of the measures. In assessing the fit between elements and their constructs, commonly used decision rules for factor identification were followed. All prime factor loadings should be greater than 0.5 and not contain cross-loadings (Hair et al., 2006). The factor analysis was run again with eight factors identified that explain the phenomena under study, seven dimensions related to the challenges of the cloud accounting (Top management support (TM), Firm size (FS), Infrastructure (Technology readiness) (TR), Security and Privacy (SP), Compatibility (CO), Competitive Pressure (CP), and Relative advantage (RA), and one dimension related to the adoption of cloud accounting (CA), as shown in Table 4.

The results indicated that the cumulative variance equals 63.529 > 0.60, which indicates a degree of satisfactory construction. The KMO test (which measures the sampling adequacy of each variable in the model and the complete model) showed that the value of 0.656 > 60 (Kaiser, 1974) is a good result which reveals that the correlation matrix was sufficient for the factor analysis. Bartlett’s test was 487.784, with a significance level of 0.000 < 0.05 (Almohammad et al., 2021). The communalities values of all items were more than 0.5 (Field, 2005). Consequently, exploratory factor analysis conditions were achieved.

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Items</th>
<th>Loadings</th>
<th>Variance Explained</th>
<th>Communalties</th>
<th>SFL &gt; .50</th>
<th>SMC &gt; .30</th>
<th>CR &gt; .70</th>
<th>AVE &gt; .50</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM</td>
<td>TM1</td>
<td>.762</td>
<td>.674</td>
<td>.570</td>
<td>.325</td>
<td>.748</td>
<td>.501</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TM2</td>
<td>.753</td>
<td>9.579</td>
<td>.625</td>
<td>.588</td>
<td>.346</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TM3</td>
<td>.597</td>
<td>.643</td>
<td>.681</td>
<td>.464</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FS</td>
<td>FS1</td>
<td>.849</td>
<td>8.226</td>
<td>.763</td>
<td>.558</td>
<td>.311</td>
<td>.764</td>
<td>.620</td>
</tr>
<tr>
<td></td>
<td>FS2</td>
<td>.721</td>
<td></td>
<td>.590</td>
<td>.719</td>
<td>.517</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TR</td>
<td>TR1</td>
<td>.775</td>
<td></td>
<td>.654</td>
<td>.730</td>
<td>.533</td>
<td>.772</td>
<td>.532</td>
</tr>
<tr>
<td></td>
<td>TR2</td>
<td>.763</td>
<td>9.419</td>
<td>.644</td>
<td>.559</td>
<td>.312</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TR3</td>
<td>.643</td>
<td></td>
<td>.649</td>
<td>.605</td>
<td>.366</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SP</td>
<td>SP1</td>
<td>.737</td>
<td></td>
<td>.589</td>
<td>.682</td>
<td>.466</td>
<td>.715</td>
<td>.557</td>
</tr>
<tr>
<td></td>
<td>SP2</td>
<td>.699</td>
<td>8.221</td>
<td>.561</td>
<td>.547</td>
<td>.347</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SP3</td>
<td>.585</td>
<td></td>
<td>.615</td>
<td>.522</td>
<td>.304</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO</td>
<td>CO1</td>
<td>.787</td>
<td>7.009</td>
<td>.716</td>
<td>.787</td>
<td>.619</td>
<td>.711</td>
<td>.550</td>
</tr>
<tr>
<td></td>
<td>CO2</td>
<td>.530</td>
<td></td>
<td>.560</td>
<td>.537</td>
<td>.356</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CP</td>
<td>CP1</td>
<td>.771</td>
<td></td>
<td>.668</td>
<td>.568</td>
<td>.335</td>
<td>.728</td>
<td>.502</td>
</tr>
<tr>
<td></td>
<td>CP2</td>
<td>.602</td>
<td>7.666</td>
<td>.624</td>
<td>.513</td>
<td>.363</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CP3</td>
<td>.563</td>
<td></td>
<td>.615</td>
<td>.657</td>
<td>.432</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RA</td>
<td>RA1</td>
<td>.857</td>
<td></td>
<td>.784</td>
<td>.586</td>
<td>.335</td>
<td>.704</td>
<td>.551</td>
</tr>
<tr>
<td></td>
<td>RA2</td>
<td>.511</td>
<td>6.678</td>
<td>.530</td>
<td>.947</td>
<td>.897</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Confirmatory factor analysis (CFA) was performed to identify the extent to which the number of measured variables represents the constructs. The results shown in Table 5 indicate that the values of standardised factor loadings (SFL) were greater than 0.50 (Durrah et al., 2021; Hair et al., 2010), and the values of square multiple correlation (SMC) exceeded the acceptable level of 0.30 (Durrah and Chaudhary, 2021). Composite reliability values (RC) exceeded .70 (Chan et al., 2015) and were less than .90 (Hair et al., 2017), i.e. TM = .748, FS = 764, TR = .772, SP = .715, CO = .711, CP = .728, RA = .704, and CA = .735. Moreover, the values of average variance explained test (AVE) were above .50 (Baggozzi and Yi, 1988), i.e. TM = .501, FS = .620, TR = .532, SP = .557, CO = .550, CP = .502, RA = .551, and CA = .504.

Collinearity statistics (tolerance and variance inflation factors tests) were conducted to determine the multi-collinearity state among independent variables. The findings in Table 5 indicated that all the tolerance values exceeded 0.05, and the inflation variance factor values (VIF) were under 10. Thus, the condition is achieved (Hair et al., 2006). Table 5 illustrates that the AVE square roots values in each row were more than the correlation values listed in that row. Consequently, these results emphasise that adequate discriminant validity has been achieved (Durrah, 2020). Furthermore, there are many significant relationships between independent variables, as shown in Table 5.

<table>
<thead>
<tr>
<th>Variable</th>
<th>T&gt;0.05</th>
<th>VIF&lt;10</th>
<th>TM</th>
<th>FS</th>
<th>TR</th>
<th>SP</th>
<th>CO</th>
<th>CP</th>
<th>RA</th>
<th>CA</th>
<th>(\sqrt{AVE})</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM</td>
<td>.794</td>
<td>1.260</td>
<td>1</td>
<td>-0.065</td>
<td>.396**</td>
<td>.070</td>
<td>.285**</td>
<td>.238**</td>
<td>.094</td>
<td>.017</td>
<td>.707</td>
</tr>
<tr>
<td>FS</td>
<td>.960</td>
<td>1.041</td>
<td>1</td>
<td>-0.073</td>
<td>.107</td>
<td>.006</td>
<td>-1.14</td>
<td>.021</td>
<td>-0.044</td>
<td>.787</td>
<td></td>
</tr>
<tr>
<td>TR</td>
<td>.780</td>
<td>1.282</td>
<td>1</td>
<td>.041</td>
<td>.274**</td>
<td>.287**</td>
<td>.029</td>
<td>.078</td>
<td>.729</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SP</td>
<td>.873</td>
<td>1.145</td>
<td>1</td>
<td>.070</td>
<td>.302**</td>
<td>.179*</td>
<td>-.020</td>
<td>.746</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO</td>
<td>.874</td>
<td>1.144</td>
<td>1</td>
<td>.203*</td>
<td>.022</td>
<td>.026</td>
<td>.741</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CP</td>
<td>.778</td>
<td>1.285</td>
<td>1</td>
<td>.197*</td>
<td>-.013</td>
<td>.708</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RA</td>
<td>.940</td>
<td>1.064</td>
<td>1</td>
<td>.004</td>
<td>.742</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>CA</td>
<td></td>
<td></td>
<td>1</td>
<td>.709</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Harman’s single factor test was performed with 20 items loaded into one common factor by analysis of principal components to identify the common method bias in the present research. The findings in Table 6 show that the cumulative variance was 16.004%, which is lower than the assumed threshold point (<50%), according to Podsakoff et al. (2012). The results indicate that common method bias did not significantly affect the data collected in this study.

<table>
<thead>
<tr>
<th>Components</th>
<th>Total</th>
<th>Variance</th>
<th>Cumulative</th>
<th>Total</th>
<th>Variance</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.201</td>
<td>16.004</td>
<td>16.004</td>
<td>3.201</td>
<td>16.004</td>
<td>16.004</td>
</tr>
<tr>
<td>2</td>
<td>1.919</td>
<td>9.594</td>
<td>25.598</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>.391</td>
<td>1.957</td>
<td>98.211</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>.358</td>
<td>1.789</td>
<td>100.000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Structural equation modelling (SEM) was done to test the present research model using AMOS program. Figure 1 shows the direct effect of (top management support (TM), firm size (FS), infrastructure (technology readiness) (TR), security and privacy (SP), compatibility (CO), competitive pressure (CP), and Relative advantage (RA) on cloud accounting (CA).

Table 7. Fit indices of the model

<table>
<thead>
<tr>
<th>Fit Indices</th>
<th>Measured</th>
<th>Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMIN/DF</td>
<td>1.14</td>
<td>&lt;5</td>
</tr>
<tr>
<td>P</td>
<td>.117</td>
<td>&gt;.05</td>
</tr>
<tr>
<td>RMR</td>
<td>.054</td>
<td>&lt;.08</td>
</tr>
<tr>
<td>RMSEA</td>
<td>.030</td>
<td>&lt;.08</td>
</tr>
<tr>
<td>GFI</td>
<td>.911</td>
<td>&gt;.90</td>
</tr>
<tr>
<td>CFI</td>
<td>.937</td>
<td>&gt;.90</td>
</tr>
<tr>
<td>TLI</td>
<td>.916</td>
<td>&gt;.90</td>
</tr>
<tr>
<td>IFI</td>
<td>.945</td>
<td>&gt;.90</td>
</tr>
<tr>
<td>PGFI</td>
<td>.616</td>
<td>&gt;.50</td>
</tr>
<tr>
<td>PNFI</td>
<td>.511</td>
<td>&gt;.50</td>
</tr>
</tbody>
</table>

Table 7 displays the fit indices of the research model, where the value of CMIN/DF=1.14 was less than 5; P-value =.117 was greater than .05 (insignificance); the indices of RMR= .054 and RMSEA= .030 were less than .08; the indices of GFI= .911, CFI= .937, TLI= .916, and IFI= .945 were higher than .90; and the indices of PGFI= .616 and PNFI= .511 were more than .50. All of these indices are suitable according to (Kline, 1999; Schermelleh-Engel et al., 2003).
Studies accountants. The direct path analysis in Table 8 shows that all challenges of accounting and cloud computing (top management support (TM), firm size (FS), infrastructure (technology readiness) (TR), security and privacy (SP), competitive pressure (CP), and relative advantage (RA)) have no significant effect on cloud accounting (CA) except compatibility (CO). Consequently, (H₁, H₂, H₃, H₄, H₅, and H₆) are not supported, while (H₇) is supported by the results.

6. Discussion

Accounting and cloud computing is a relatively recent area of research in the field of information systems, and only a few empirical studies have addressed the use of cloud computing in Oman. As for cloud computing, there is no research on it in the Omani context. At present, the vast majority of the companies in the Omani market possess adequate knowledge regarding cloud computing. Most companies have a fragmented understanding and lack of information about cloud services in general. This limited its transfer to the cloud. In addition, they have a strong wait-and-see attitude towards adopting accounting and cloud computing.

Company characteristics (Top management support, company size, and infrastructure) play an important role in the decision-making for adopting cloud accounting. Cho (2006) and Low & Chen (2011) indicated that support from top management and company size were defining factors in distinguishing between cloud computing users and non-users. Senior management support is important in adopting new technological systems, because top management support provide facilities for better adoption, facilitates of resource allocation, and re-engineering of the process. Therefore, senior management support plays an important role in the adoption of cloud computing technology (Kumar et al, 2017; Tarhini et al., 2018). Alam et al. (2016) and Sophonthummapharn (2009) concluded that the existence of information technology knowledge among chief executives reduces the degree of uncertainty in adopting new information systems. The results of the statistical analysis showed that there is not significant relationship between Top management support and cloud accounting adoption in Oman. This result is consistent with (Low, et al, 2011; Hassan et al., 2017) they found no significant relationship between Top management support and cloud accounting adoption. The reason for this, according to the opinion of many executives, until now, they do not prefer the cloud option, because they have had some difficulty finding the right service provider that has good experience in the cloud accounting field. On other hand, the using of cloud accounting requires a redesign of the accounting information system, the difference between the cloud accounting and computerized accounting is not clear to many accountants.

Studies indicate that larger enterprises have a higher probability of being positively correlated with the adoption of cloud computing. The results of statistical analysis showed

<table>
<thead>
<tr>
<th>Hypo.</th>
<th>Path</th>
<th>SRW</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P.</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H₁</td>
<td>TM</td>
<td>CA</td>
<td>-.50</td>
<td>.153</td>
<td>-.705</td>
<td>.481</td>
</tr>
<tr>
<td>H₂</td>
<td>FS</td>
<td>CA</td>
<td>.07</td>
<td>.149</td>
<td>.126</td>
<td>.900</td>
</tr>
<tr>
<td>H₃</td>
<td>TR</td>
<td>CA</td>
<td>.06</td>
<td>.129</td>
<td>.095</td>
<td>.925</td>
</tr>
<tr>
<td>H₄</td>
<td>SP</td>
<td>CA</td>
<td>-.35</td>
<td>.435</td>
<td>-.437</td>
<td>.662</td>
</tr>
<tr>
<td>H₅</td>
<td>CO</td>
<td>CA</td>
<td>.87</td>
<td>.474</td>
<td>1.98</td>
<td>.027</td>
</tr>
<tr>
<td>H₆</td>
<td>CP</td>
<td>CA</td>
<td>.68</td>
<td>.179</td>
<td>.643</td>
<td>.520</td>
</tr>
<tr>
<td>H₇</td>
<td>RA</td>
<td>CA</td>
<td>-.10</td>
<td>.054</td>
<td>-.287</td>
<td>.774</td>
</tr>
</tbody>
</table>

Table 8. Hypotheses testing
that the relationship between company size and cloud accounting is negative and insignificant. This finding is not in agreement with other studies (Wang et al., 2010, Chong & Chan, 2012), but is in agreement with Low, et al, (2011) and Borgman et al. (2013). Small and medium-sized businesses are among the keenest to adopt cloud computing services because its technical needs are often less complex, and it has fewer information technology specialists compared to large enterprises.

The infrastructure did not significantly affect the adoption of cloud accounting. There are several reasons why companies are shying away from the cloud option. The first is the deficiencies and weaknesses in the provider’s infrastructure (computers and physical facilities), which forces companies to distance themselves from the cloud option (Özdemir and Elitas, 2015). The second reason is that cloud accounting relies heavily on the Internet and networks, and it needs good, high-speed and efficient networks throughout the day. This is often not available in the study environment. The third reason is that companies have the devices and equipment that meet their needs, and they are not motivated to use the cloud. The fourth reason is that companies have not yet realised the importance of cloud technology and the advantages and benefits it provides to the business sector.

The importance of information systems security is negatively related to cloud accounting. This is because security and privacy are among the most important determinants of adopting cloud services. Many organisations have concerns about the security and privacy of enterprise data and concerns about customer data security. Due to the high speed and automated nature of transaction processing, the executives stated that they were concerned about the risks related to privacy and security, they perceive that data security and monitoring are the most important risks associated with cloud accounting. Cloud data becomes a target for attacks. In detail, they have concerns that their data or the data of their customers will be stolen while it is passing over the Internet. thus, this concerns increase system vulnerabilities, and decreases the number of users. These results agree with past studies (Abdul fattah, 2019; Asiaei & Rahim, 2019; Rababah et al., 2017; Senarathna et al., 2018). For instance, Rababah et al., 2017, revealed the institutions has many concerns about adoptions cloud computing. it has concerns about the enterprise data security, and concerns with the customer’s data security.

The results showed that there is a significant relationship between compatibility and adoption of cloud accounting. This result indicates that compatibility effectively affects the application of cloud accounting. Results are consistent with previous studies (Hashim & Bin Hassan, 2015; Rababah et al., 2020; Adam et al., 2019; Mohammadi et al., 2017; Lee & Kim, 2007). This means that companies believe that adopting cloud computing is compatible with their current business landscape and culture. One of the possible explanations is the maturity of cloud accounting technology in companies. Existing hardware and software in companies are compatible with cloud accounting. Past experiences of companies have shown that the information systems currently used are compatible and compatible with the infrastructure, and there is a need to move to the cloud option. This finding is inconsistent with earlier studies (Oliveira et al., 2014; Low et al., 2011; Oliveira and Martins, 2010; Wang et al., 2010).

It was noted that the comparative advantage has a negative effect on the adoption of cloud computing, but it is not significant. This result contradicts previous studies (Tan et al., 2008; To and Ngai, 2006; Wang et al., 2010; Oliveira et al., 2014). However, it agrees with Low et al. (2011). This result indicates that companies are aware of the comparative advantage that cloud computing provides. These include reducing costs, improving the quality of business
processes, performing tasks more quickly, increasing productivity, and creating new business opportunities. But they may have a limited level of knowledge about cloud accounting, or companies are not aware of cloud accounting’s comparative advantage. One of the possible reasons for this is that cloud accounting is a new technology that requires different working mechanisms and procedures, some of which are complex. Another reason is that the business’s size does not currently require the use of the cloud and can be accomplished using desktop computers. In this sense, direct commercial benefits are not clear to companies. However, the results indicate that levering the cloud can be realised when the number of users or the volume of operations and data increases.

The results showed that competitive pressure does not significantly impact the adoption of cloud accounting. This result is in agreement with Lin and Lin (2008). This means that companies know that their competitors are also not interested in using the cloud option. The results imply that when firms face tough competition, they tend to implement more aggressive changes. This means that companies adopt cloud accounting if they encounter strong support or motivation, such as some competitors having already started using cloud accounting, or the use of cloud accounting helps the company compete better or a law or authority that compels companies to adopt cloud accounting. Finally, this result contradicts several studies (Rababah et al., 2020; Adam et al., 2019; Mohammadi et al., 2017; Oliveira et al., 2014: Low et al., 2011).

7. Implications
This study’s results could have significant impacts on the users of information systems in the Sultanate of Oman because the identification of technological, organisational and environmental factors that affect the success of implementing cloud accounting in a comprehensive model that achieves different dimensions is very beneficial. Additionally, shedding light on these factors provides a better understanding of the conditions under which cloud accounting can be successfully implemented. In light of this study’s results, companies planning to adopt cloud accounting can examine whether their organisational environments are suitable for applying cloud accounting. They can also check if their characteristics of technological innovation, organisational factors, and factors related to information systems are conducive to the application of cloud accounting. Considering the various sub-factors of cloud accounting helps managers better understand, evaluate, discover different technology sources, and consider their potential for their use in enhancing organisational performance. One of the concerns about adopting cloud services in general is the weakness of the Internet, as the service requires permanent Internet connection while using that service. Another concern is that implementing cloud accounting may not be consistent with the company’s infrastructure. Suppose the infrastructure is not suitable for applying cloud accounting. In that case, this requires considering a change in management strategies, for example educating employees and upper management about the comparative advantages resulting from using accounting or cloud computing, and obtaining strong support from them in this aspect. Without balance between technological potential and top management support, the comparative advantage of cloud computing may fail to realise the organisation’s economic value. At present, the vast majority of managers do not have sufficient knowledge regarding cloud computing and accounting and are willing to put more effort into evaluating the cloud aspects through which the advantages of intangible resources can be accurately demonstrated (Assante et al., 2016).

The different perspectives on cloud computing covered in this study constitute a management strategy that helps the companies in light of limited economic resources and concerns about the use of cloud services to make the appropriate decision in adopting cloud
accounting. This strategy also helps managers to choose the most appropriate dimension of cloud accounting services and invest in it to significantly improve their performance (Gutierrez et al., 2015; Schneider and Sunyaev, 2016). Hence, a comprehensive and multi-faceted visualisation of the adoption of cloud computing can help managers familiarise themselves with the options at hand (Buyya et al., 2009; Sultan, 2010; Wilkin et al., 2016; Islam et al., 2017). Strategies for measuring the success of cloud accounting implementation require a comprehensive scheme through which an organisation’s cloud accounting initiative can be evaluated. For example, the companies’ size can be divided by the proportion of total customers associated with cloud accounting and the total number of external transactions transferred to cloud accounting. The effects of organisational contexts on these dimensions could be examined.

Despite all the contributions mentioned above, the study has several limitations. These limitations can be addressed in future studies that might investigate the relation between the elements highlighted in this research as well as other relevant fields. First, the search tool was a survey questionnaire based on the opinions of CEOs of mid-sized companies that participated as key respondents. In this regard, there could be some bias in their opinions even if the tool of the research has already been tested for validity or reliability. This bias can be mitigated if the opinions of external parties such as allied partners, customers, competitors and suppliers are taken into account. Moreover, it would be useful to evaluate annual reports to validate the information provided by the respondents.

Second, all the main elements were collected and measured only once during one period, so the data presented in this study can be considered cross-sectional as it depends on a fixed period without considering the value of time. It is extremely important to pay attention to long-term impacts, especially those that may affect the development and creation of cloud accounting services along with the presence of senior management support and competitive pressure.

Third, the data have been collected was from one country (Oman), so potential cultural differences have to be taken into account, particularly differences between developed and developing societies that affect information system management practices and perceptions of technology adoption. To generalise ideas and review concepts, the research framework needs further research and needs to be attached to samples from different countries. In addition, existing cultural differences could influence individuals’ views of some key activities in adopting new technologies such as cloud accounting. Further research could also test more conclusive hypotheses.

8. Conclusion
Cloud computing is an important development of information systems technology. It has attractive features such as flexibility, scalability, pay-as-you-go and cost-efficiency. For cloud computing adoption, it is imperative to clarify the factors that explain this adoption and undertake a careful analysis to understand whether different industries have the same motivations for adopting cloud computing. Along with the potential benefits, the study deals with an important issue within the cloud computing framework, which is cloud accounting, while explaining the main role of the regulatory, environmental and technological context in adopting cloud accounting in the Sultanate of Oman. Cloud accounting is an important technology that can provide strategic and operational advantages, but the implementation rates in the Omani context did not reach high levels. A questionnaire was developed and distributed to a sample of 250 companies in Oman, and 159 questionnaires were retrieved valid for statistical analysis. The results indicated that compliance has a direct impact on the
company’s adoption of cloud computing. Our study results indicate that compatibility is the most influential factor in the adoption of cloud computing. The comparative advantage, complexity, technological readiness, support of top management, and the size of the company did not show an impact on the company’s adoption of cloud computing. For the organisation’s decision-makers studying cloud-based initiatives, the results provide a sound basis for measuring the direct and indirect impacts of cloud accounting characteristics and the literature on its adoption in various industries. Companies wishing to adopt cloud accounting can start gradually, with the number of operations slowly increasing by developing more Internet infrastructure or electronic equipment.

Reference


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