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# BARRIERS TO CLOUD COMPUTING ADOPTION AMONG SMEs IN THE MIDDLE EAST: A SYSTEMATIC REVIEW

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**ABSTRACT**

The advancement of technology is significant in shaping business development by providing different means of doing business. The geometric increase in intense market rivalry and a fast-evolving business environment have caused businesses across all industries and sectors to employ information and communication technologies (ICTs) to improve their business operations and increase their business value. This paper examines the barriers to adopting cloud computing by small and medium-sized enterprises in middle eastern countries. The study used the PRISMA protocol to document the method of analysis, inclusion, and exclusion criteria. The study also used three relevant databases (Emerald, Google scholar, and Sustainability) to identify relevant journal articles which used Qualitative, Quantitative, and/or mixed research methods. The included articles must have been published in English between 2016 and the first quarter of 2023. More importantly, studies that did not focus on SMEs in the middle east were excluded from the review. After thorough literature review, it was found among others that there needs to be more awareness of the importance of industry 4.0, financial constraints, and lack of infrastructure. Recommended panaceas to the identified barriers were also presented.

**Keywords:** *Cloud Computing, Smes, Middle East, Barriers, Adoption*

## 1. INTRODUCTION

The rapid advancement of technology has significantly influenced the development of businesses by providing various avenues for conducting business operations. In today's highly competitive market environment, businesses across industries and sectors have embraced information and communication technologies (ICTs) to enhance their operations and increase their overall business value [15]. Similarly, the growth of high-speed internet (4G/5G), smartphones, online payment facilitation, evolving consumer behavior, and deregulation of the services sector have contributed to the growth of cross-border e-commerce, resulting in increased levels of e-commerce transactions [18]

Small and medium scale enterprise (SMEs) play critical roles globally which are too numerous to sweep under the carpet. SMEs are seen by scholars as the powerhouse of economic development [35] a silent driver of the economy [26], and has been so helpful in making individuals self-reliant economically. small and medium-sized enterprises (SMES) are now widely acknowledged across the Middle East And North Africa (MENA) area as the region's economic backbone and as important contributors to the sustained gdp of all countries [14]. Accordingly, SMES make up 94.3 % of uaes commercial ventures while it contributes 96%, 59% and 25% of Algeria, Palestine And Saudi Arabia GDP [14].

However, SMEs have always been for means of reducing costs of running the business and ensuring sustainability. funding is a great obstacle to the successful operation of SMEs in the middle east, more so many financial institutions usually feel reluctant to give them loans [38]. According to [23], the adoption of cloud computing by SMEs, therefore, becomes an effective means of reducing costs and business sustainability. The cost reductions, flexibility, and scalability of IT resources that a cloud enables, are some reasons that can make SMEs have interest in cloud computing [9].

Cloud computing also promises prospects for consumers, because on-demand services may be created, enlarged, and accessed over the internet, cloud computing can generate significant economic benefits and presents potential for businesses [34].

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Furthermore, cloud computing is known for its significant role in driving innovation and improving organizational productivity. it allows organizations to adjust their it resources to meet current demands, contributing to business growth [10]. Consequently, cloud computing has gained growing attention and adoption among organizations and researchers. cloud computing, defined as the use of computing resources provided by a provider over the internet network, has become a compelling force and a central point for accessing, storing, securing, and managing reliable data for businesses [33]. By reducing operational inefficiencies, cloud computing has the potential to significantly contribute to the expansion and competitiveness of small and medium-sized businesses, which serve as the backbone of economic growth and job creation [26].

Despite the numerous benefits associated with the adoption of cloud computing by organizations and its popularity among researchers and practitioners [35], middle eastern countries still need to improve their adoption of this technology. The failure of SMEs to fully capitalize on cloud computing opportunities has been well-documented. a significant number of small businesses do not maintain their own websites, indicating a lack of adoption of cloud-based solutions [38]. Various factors, broadly categorized as technological, organizational, and environmental, present significant barriers to successful cloud computing adoption, particularly in the middle eastern countries.

Despite increasing research evidence on the factors determining the adoption of cloud computing generally, there is still further need to unravel the core barriers to smooth adoption of it by the SMEs especially in the middle eastern countries. this paper therefore seeks to conduct a systematic review of the previous studies on the common identified challenges constituting barriers to the adoption of cloud computing by SMEs in the middle east. the importance of examining the factors that can constitute barriers to the adoption of this computing paradigm in small and medium-sized businesses SMEs operating in various industries and sectors in the Middle Eastern part of the world become essential. this will help in questing for the panacea to ameliorate the barriers if not eliminated. [16] has conducted similar study on barriers to the adoption of cloud computing focusing on Saudi Arabia. The present study is unique for expanding the scope of the study beyond a country in the middle east.

A few studies have earlier examined the factors that influence the adoption of cloud computing by SMEs in some of the countries that constitute the Middle East. [15] studied factors influencing SMEs adoption of cloud computing services in Lebanon.

The problem addressed in this systematic review is the lack of widespread adoption of cloud computing among SMEs in the middle east. Despite the potential benefits, such as reduced it costs, improved operational efficiency, and enhanced competitiveness, SMEs in the region face several barriers that hinder their adoption of cloud computing technologies. Identifying and understanding these barriers is essential to develop strategies and interventions that can facilitate the adoption of cloud computing among SMEs in the Middle East

The outcomes of this systematic review will contribute to the existing body of knowledge by consolidating and synthesizing the current understanding of the barriers to cloud computing adoption among SMEs in the middle east. by shedding light on these barriers, the study aims to facilitate informed decision-making, assisting policymakers, researchers, and industry professionals in promoting cloud adoption and enabling the digital transformation of SMEs in the middle east. It will also help in the development of effective strategies to promote cloud computing adoption, ultimately enabling SMEs in the middle east to leverage the benefits of this transformative technology.

## 1. LITERATURE REVIEW

The National Institute of Standard and Technology (NIST) conceptualized “cloud computing as a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g. networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction [20]. Technology is essential to the launch, operation, and expansion of modern organizations [28].

Cloud computing is known for providing three major services. These are software as a service, infrastructure as a service, and platform as service [33]. software as a service provides users with the ability to access simple desktop applications such as word processing and spreadsheets via the internet as a service [26].

On the other hand, [26] described Infrastructure as a service is to establish a resolvable environment in which users are granted permission to perform a variety of tasks on the server. These tasks include beginning and ending the server's operation, personalizing the server by installing software packages, connecting virtual disks to the server, and configuring access permissions and firewall rules.

Platform as service Cloud service providers make available to end users a higher level of abstraction for the purpose of deploying on cloud infrastructure applications that end users have created or acquired using programming languages, operating systems, web servers, libraries, services, and programming language tools. These applications can be created using consumer-created or acquired applications [26].

Among the beautiful features of cloud computing as mentioned by [9] are Quick elasticity, wide network access, measured service, on-demand self-service, and resource pooling.

i) Quick elasticity which is the applications that offer the ability to grow, and contract based on demand can be deployed almost instantly.
ii) Wide network access which comprises common devices or thin/thick user networks, like workstations, laptops, mobile phones, and PDAs, that could be used to access and manage cloud computing services over the internet or other networks.
iii) Measured Service that a user and provider distribution, the usage of facilities by users is enhanced, recorded, managed, and charged with some metering competences.
iv) On-demand self-service: Customers can use their computer abilities anyway they see fit without requiring human engagement with a cloud service provider.
v) Resource pooling: To assist recurring customers, a multi-tenant application dynamically assigns and reassigns actual and simulated attributes based on user demands.

Nevertheless, three challenges to the adoption of cloud computing are unfolding in the pages of research papers. These challenges are not limited to a particular country and continent, it is global. The primary challenge facing SMEs currently is the task of identifying technology adoption criteria and strategy [28] and [9] which will help them to decide on the cloud computing adoption appropriately. According to [20], most firms that have adopted cloud computing used it for email hosting, file storage and some other simple applications.

## 2. PURPOSE OF THE STUDY

The purpose of this review is to determine the barriers to the adoption of cloud computing among SMEs in the Middle East and identify the recommended panacea to break the identified barriers.

### 3.1 Research Questions

This study seeks to provide answers to the following research questions:

i) What are the common barriers to the adoption of cloud computing by SMEs in the middle east?
ii) What are the commonly recommended solutions to breaking the identified barriers to the adoption of cloud computing by SMEs in the middle east?

## 4. RESEARCH METHOD

The research questions are to be answered with the aid of systematic review of relevant literature. [42] submit that systematic literature review helps to conduct evidence-based study.

### 4.1 Search Strategy and Selection Criteria

In this systematic review, a comprehensively extensive search was conducted on databases for the identification of relevant and useful articles with the aid of search terms. The researcher used search terms like cloud computing, SME, Small and Medium Scale Enterprise, Middle East, barrier, challenges, problems, and adoption. The databases we made use of are Emerald, sustainability, and Google scholar to identify and to select articles that contain keywords and phrases. During the cause of achieving this, the disagreement that came up among the authors were resolved and laid to rest via the use of an established checklist. Table 1 below indicates inclusion and exclusion criteria that was used to select the reviewed articles.

*Table 1. Inclusion and Exclusion Criteria*

| *Inclusion* | *Exclusion* |
|---|---|
| Journal articles | Conference proceedings and dissertations |
| Focus on cloud computing on SMEs in Middle East | Cloud computing on SMEs outside the Middle East. |

| | |
|---|---|
| Available in full text | Full text not available |
| Available in English | Available in other languages |
| Focus on SME | Focus on enterprises in general |

### 4.2 Quality Assessment

In order to determine and assess the quality of the articles to be included in the systematic review, the study limits the search to the articles published between year 2016 and the first quarter of year 2023. This presupposes that all articles published prior to January 2016 are excluded. Also, articles that are not focusing on cloud computing in SMEs in the Middle East, and not published in English language are excluded. Similarly, the study must be addressing cloud computing by the SMEs in one or more countries in the middle east. Furthermore, after thorough database searching, we exported the titles, abstracts, keywords, authors' names, years of publication, journals names and publishers' details identified to an MS Excel spreadsheet. Afterwards, these exported data were meticulously checked based on the set criteria for cleansing, compliance, and sanity.

### 4.3 PRISMA for Quality Assessment

PRISMA, an acronym for Preferred Reporting Items for Systematic Reviews and Meta-Analyses, is a highly regarded guideline designed to improve the transparency and dependability of systematic reviews and meta-analyses [1] and [41]. Its primary objective is to establish a consistent and rigorous approach to conducting and reporting these types of studies. The PRISMA statement comprises two essential components: a checklist consisting of 27 items and a flow diagram. The checklist serves as a roadmap for authors, guiding them in reporting crucial information in their systematic reviews [40]. On the other hand, the flow diagram figure 1, visually depicts the process of study selection.

The first step is to clearly define the research question and establish specific inclusion and exclusion criteria. Then the researcher conducts an extensive literature search across multiple databases (Emerald, sustainability, and Google scholar), employing predetermined search terms and strategies. The search results were subsequently screened based on predetermined criteria as explained abinitio to identify relevant studies for inclusion in the review. Selected studies undergo a meticulous assessment of their quality and potential biases. Data extraction is performed to gather relevant information from each included study, such as study design, sample size, intervention details, outcomes, and results.

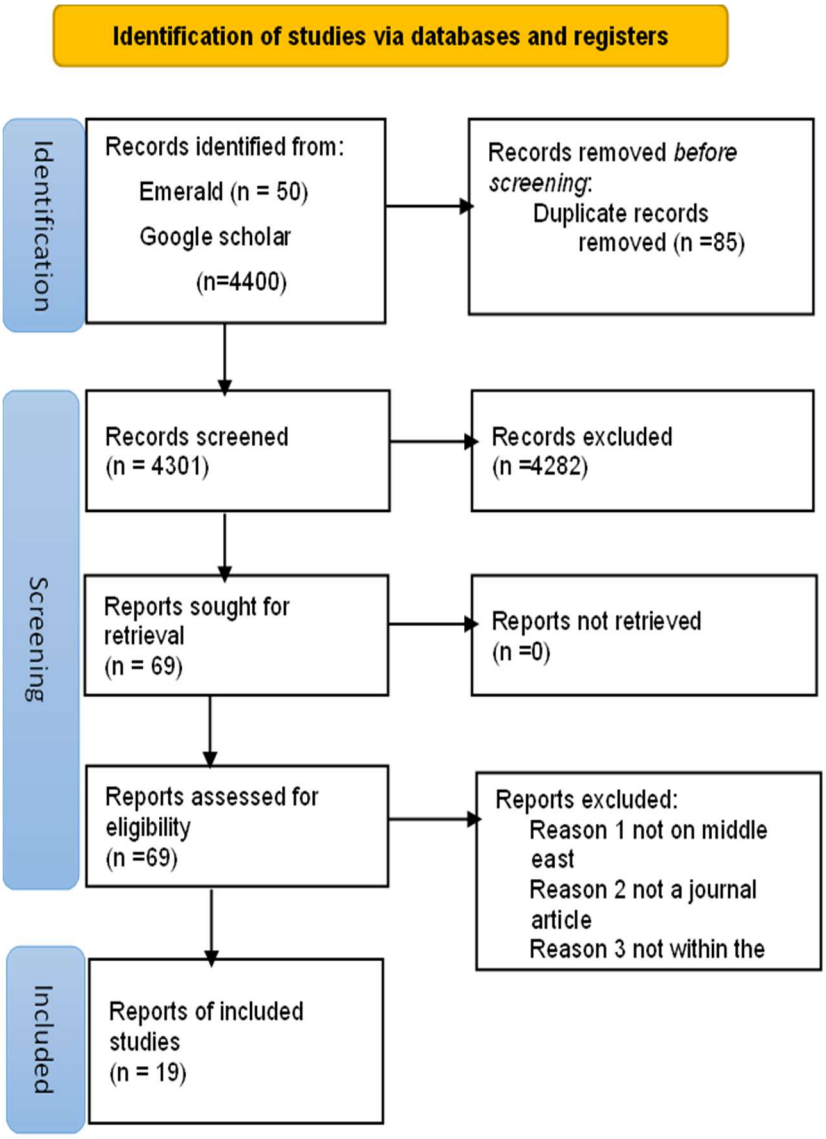


*Figure 1: PRISMA Flow Diagram*

## 6. ETHICAL CONSIDERATIONS

The study upheld the principle of trustworthiness, credibility, and transferability. All articles are freely accessible on the internet and especially in the various databases used to search for the articles. All the databases are trustworthy and credible, and therefore, efforts were made to avoid predatory publications. Credibility of the study was also ensured by reporting the realities found in the reviewed literature [19].

Transparency and reproducibility are paramount throughout the systematic review process, as emphasized by PRISMA. It stresses the importance of documenting each step taken during the review, including any deviations from the initial protocol. Additionally, the checklist prompts the researcher to provide clear and concise explanations for any studies that were excluded. By adhering to the PRISMA guidelines, researchers aim to minimize bias, enhance the reliability of their findings, and uphold the integrity of systematic reviews.

## 3. RESULTS AND DISCUSSION

A thorough and exhaustive search of databases produced 4474 results. 85 papers were eliminated after duplicates were removed using

document filtering. The researcher screened 4301, while 4282 articles were excluded using the articles and abstracts screening method for not meeting the inclusion criteria. From 69 papers underwent full-text evaluation, only 19 papers met the criteria to be included in this systematic review.

PRISMA protocol gives details on this procedure. Table 2 shows the finding and the methodology for each of the 19 papers that met the criteria.

Figure 2 indicates the distribution of included studies in the systematic review based on research method used. 13 studies utilized quantitative method; 5 studies used Qualitative method while only one study used systematic review approach. This implies that quantitative research design is commonly used in studies related to cloud computing in the middle east.

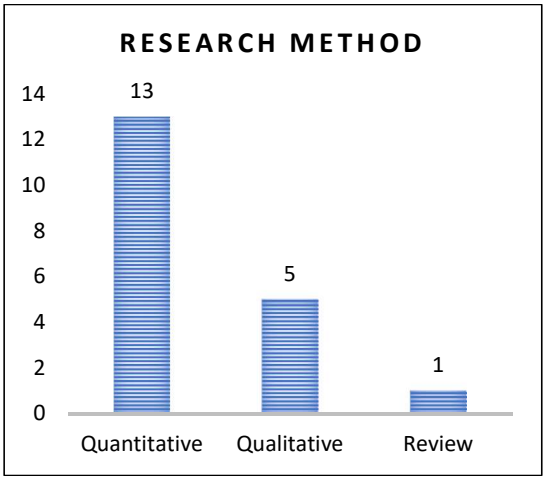


*Figure 2: Distribution of Included Studies*

## 7. KEY FINDINGS FROM THE REVIEWED LITERATURE

i. Barriers to The Adoption of Cloud Computing by SMEs in the Middle East
ii. Awareness of industry 4.0 and Knowledge of cloud computing.

Several implicational studies conducted in the middle eastern countries have shown that the bedrock of barriers that makes cloud computing unattractive to SMEs is lack of awareness of industry 4.0, [32] its components among which is cloud computing [16], [3], and [5]. Despite the fact that Many Middle Eastern nations are now aware of how crucial IT is to the developing and sustaining their economies [5] many SMES are still not aware that cloud computing is part of the fourth industrial revolution. In the study conducted by [5] and [16] in Jordan and Saudi Arabia respectively, it was found that The SMES' lack of expertise and knowledge of Cloud Computing functionalities makes transitioning to and adopting the cloud extremely difficult.

### 7.1 Security Concern

Security and privacy issues are another important factor impeding the adoption cloud computing by SMES in middle east [16], [3], and [5]. Commonly identified security challenges are Data breaches, shared technology and shared danger, Dos attacks, cloud services abuse, inadequate diligence, permanent data loss, the APT parasite, malicious insiders, account hijacking, data breaches, hacked interfaces and APIs, exploited system vulnerabilities, and compromised credentials and broken authentication [33]. Security and privacy are seen by researchers as the major inhibitors to cloud computing adoption by SMES [11].

### 7.2 Compatibility to Business

The compatibility of cloud computing to the various businesses of SMES has also been identified by research as a great barrier to the successful and willingness to adopt it. Compatibility is the extent to which the new technology matches what is done in the organization [31]. Therefore, an incompatible innovation to the values of the SMEs is jettisoned [12].

### 7.3 Lack of Competition

Another hindrance to the adoption of cloud computing by the SMEs is that most of the business owners and top management have strong belief that most of their competitors do not use cloud computing services. The moment feels a fierce competition; company begin to use fire brigade approach [6].

### 7.4 Government policies and Laws

[7] noted that the government policy and laws have roles to play in adopting cloud computing services, some have restrictive operating policy. Some countries in the world, including those in the middle east do not have regulatory frameworks for addressing technology usage. This makes SMEs to be skeptical in adopting cloud computing for their businesses. Government indifferent towards providing platforms for educating cloud computing

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users has been a great obstacle to the adoption by SMEs in the middle east, especially the developing countries [17].

### 7.5 Infrastructural Barrier

The fear of losing huge investment in the computing infrastructure by organizations [36] has been identified a challenges that makes them to think twice before adopting cloud computing. Cloud computing facilities and equipment are expensive, and therefore, constituting a great barrier to the acceptance of cloud computing [4]. This applies not just to internet access but also to connection speed, price, and dependability so that start-up businesses in the early stages of operation and potential clients wishing to employ the cutting-edge solutions provided by these new ventures can both use the internet [7]. Similarly, adoption of cloud computing requires acquisition of communication infrastructure [36], and this requires more financial expenses. As such it becomes a barrier that draws SMEs back from cloud computing adoption.

### 7.6 Provider or Vendor Lock-in

Empirical studies have also revealed that the fear of locking the data of SMEs to a particular provider can also serve as a barrier to the use of cloud computing services. Vendor lock-in is described as a potential impediment to Cloud Computing adoption since businesses are confined and linked to the same supplier even if they do not use that technology [16]. Evidence shows that inability of the user of cloud computing to have full control over their information is a challenge [29]. They depend on the external body or vendor who provide the service to control and manage data [17].

### 7.7 Financial Resources Barrier

Funding is indispensable for successful adoption of cloud computing by SMES. [16] submit in the study conducted in Saudi Arabia, it was found that the cost of cloud computing services is relatively high. The challenge of getting fund [14]. To acquire cloud computing infrastructure is an inhibitor that makes SMEs seem not to give in freely to the adoption of cloud computing services.

### 7.8 Top Management Decisions

Top management support is critical to successful adoption of cloud computing by SMEs [16] and [6]. They are goal setters and resource managers. Willingness of the top management to approve enough fund or resources for the adoption is always challenging [25] and [13]. The management must be fully informed of the importance of cloud computing services to the organization, especially in the areas of cost reduction, data management and allowing the consumers or customers to serve themselves.

## 8. THE RECOMMENDED STRATEGIES TO BREAKING THE BARRIERS TO CLOUD COMPUTING ADOPTION

Knowledge is important to the success of everything. Successful and hitch free adoption of cloud computing begins with the acquisition of relevant knowledge [37]. There is need to act more by the concerned individuals in the IT department of every SMEs in the middle east. [23] suggested that operational or technical staff of SMEs must acquire knowledge of cloud computing, in order to function as it ought to. Deficiency in the ICT skills is a challenge to adoption of cloud computing. Government can help to organize educational programmes that will ameliorate technical barriers to the adoption of cloud computing [24].

The impact of perceived complexity on trust may be lessened with adequate experience, familiarity, and frequent use of the technology [2]. This can only be achieved when the top management is convinced and ready to give support to the adoption of cloud computing, and train the employees, especially the IT personnel.

[2] suggested that cloud computing companies can use the identified barriers to create strategic strategies to improve service support, accessibility, and security and privacy methods. For cloud computing to be implemented successfully, [15] a solid cloud strategy should be created, covering topics such infrastructure, legal and regulatory concerns, the supply side of the cloud economy ecosystem, human resources, government cloud use, and financial ramifications.

Policies should take into account the variety of cloud business models and services, the variety of cloud users, and the complexity of the cloud economic system [15]. It has also been suggested by [6] that management can change this situation, provided the employees can be trained, and educate them on the need to adopt the new technology, its relative advantage and giving practical examples.

Government should initiate intervention policy to support the SMEs like the *Riyaadah* policy in Oman [8]. *Riyaadah* is regarded as an advising organisation since it offers non-financial support to

business owners and assists those individuals by way of training, consultancy, feasibility studies, and the promotion of small and medium-sized enterprise (SME) items in local and worldwide exhibits.

Government of the developing nations in the middle east to put in place regulations that support enterprise to adopt cloud computing for their businesses [24].

Moreover, it is possible that the comparative advantage of cloud computing will not be able to realize the organization's economic value if there is not, a balance between the technological potential and the support from top management [6]. As such, the top management must be adequately informed by the computer supply company the relative advantage of adopting cloud computing. The provider as a way of endearing the usage to organisation should convince SMEs that Cloud computing helps businesses cut operational costs and increase work efficiency [13].

To get rid of or allay the fear created by the need to secure cloud computing, there is need for the provider to guarantee that data are secure. In the study conducted in Saudi Arabia, [23] found that evidence of data privacy and strong security protocol will encourage more SMEs to embrace cloud computing services. In addition, [2] recommended that to addressing strategic plan should be put in place in order to enhance security, trust and service accessibility.

## 9. CONCLUSION

This study has been able to establish and capture the numerous challenges that constitute barriers to adopting cloud computing by SMES in the middle east. It is clear from the reviewed literature that unless these (awareness/ knowledge, infrastructure, security, financial, government policies/laws, top management decision barriers) are broken, the benefits of using cloud computing services by SMEs may not be fully harnessed in the middle eastern countries in this fourth industrial revolution era. Therefore, the small and medium size enterprises in the middle east should strike a balance between the technological potential and the support from top management.

## 10. SUGGESTIONS FOR FUTURE RESEARCH

Based on the limitations expressed in this review, subsequent reviews can expand the scope of the review, in terms of the year covered, databases and the number of articles reviewed. Similarly, a comparative study of barriers to the adoption of cloud computing can be conducted between middle east and other continent.

## 11. LIMITATIONS

This systematic review of studies on the barriers to the adoption of cloud computing by small and medium scale enterprises has some limitations. Firstly, the review concentrated on articles published between the year 2019 and the first quarter of year 2023. So, the findings are limited to these specified years only. Also, the only four databases were searched with key search terms that concentrated to the barriers or challenges of cloud computing adoption by SMEs only in the middle east. Similarly, only the articles published in English language were considered. This becomes a limitation to the study, knowing fully that countries that constitute Middle east speak Arabic language too.

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*Table 2. General Characteristics of the Studies on Cloud Computing included in the Review*

| *s/n* | *Authors* | *Title* | *Methods* | *Findings* |
|---|---|---|---|---|
| **1** | [2] | Intention, trust, and risks as core determinants of cloud computing usage behaviour | Quantitative | • Perceived accessibility<br>• Threat of security breach |
| **2** | [5] | Factors influencing SMES' adoption of cloud computing services in Lebanon: an empirical analysis using TOE and contextual theory | Quantitative | • Poor IT infrastructure<br>• Lack of government initiatives<br>• Security and privacy concerns<br>• Political instability |
| **3** | [16] | Investigation of cloud computing barriers: a case study of Saudi Arabian SMES | Qualitative | • Security concern<br>• Lack of top management support<br>• Data control<br>• Privacy<br>• Insufficient bandwidth<br>• Lack of knowledge of cloud computing<br>• Lack of government support<br>• Provider lock-in |
| **4** | [27] | Cloud computing utilization and mitigation if informational and marketing barriers of the SMES from the emerging markets: evidence from Iran and Turkey | Quantitative | • informational barriers |
| **5** | [3] | Understanding the intention to adopt cloud-based accounting information system on Jordanian SMES | Quantitative | • Insufficient technology<br>• Inadequate skilled human resources<br>• Insufficient financial resources<br>• The fair of data loss and unavailability of the service in future<br>• Security concern is a barrier to the adoption of cloud computing |
| **6** | [4] | Factors influencing the adoption of big data analytics in the digital transformation era: case study of Jordanian SMES | Quantitative | • Lack of IT infrastructure<br>• Skilled personnel<br>• Financial constraint<br>• Lack of multinational business rivals |
| **7** | [6] | Factors influencing the implementation of cloud accounting: evidence from small and medium enterprises in Oman | Quantitative | • compatibility to the business<br>• lack of competition from other companies<br>• weakness of the internet<br>• Infrastructural challenge<br>• Lack of top management supports due to their lack of |

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| | | | | the knowledge of cloud computing |
| **8** | [5] | Evaluating the status of SMES in Jordan with respect to industry 4.0: a pilot study | Qualitative | • Lack of knowledge<br>• Lack of data protection<br>• Lack of Qualified workforce<br>• Lack of awareness of the importance of industry 4.0<br>• Lack of governmental supports<br>• Lack of financial resources |
| **9** | [12] | The adoption of cloud computing in small and medium enterprises: a developing country perspective | Quantitative | • Technological readiness and lack of technological infrastructure<br>• Lack of requisite knowledge for cloud computing implementation<br>• Unpleasant government policies and laws. |
| **10** | [8] | A systematic literature review on cloud computing security: Threat s and mitigation strategies. | Review | • Data leakage<br>• Data intrusion |
| **11** | [25] | Factors influencing the implementation of cloud accounting: evidence from small and medium enterprises in Oman | Quantitative | • Factors influencing the implementation of cloud accounting: evidence from small and medium enterprises in Oman |
| **12** | [36] | Factors affecting cloud computing adoption: perspectives of IT professionals | Quantitative | • Legal issues on data storage<br>• Security of data stored in public cloud.<br>• The fear of losing the investment in computing infrastructure<br>• Lack of communication infrastructure |
| **13** | [29] | Factors influencing cloud computing adoption in Saudi Arabia's private and public organisations: A Qualitativeitative evaluation | Qualitative | • Security and privacy challenge<br>• Government policy<br>• Lack of knowledge<br>• Loss of control |
| **14** | [39] | The Determinants of Cloud Computing Adopting in Saudi Arabia | Quantitative | • Security concern<br>• Organizational support<br>• Compatibility |

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|---|---|---|---|---|
| **15** | [30] | An empirical study of factors influencing cloud adoption among private sector organisation | Quantitative | • Quality of service<br>• Security and trust |
| **16** | [21] | Determinants of cloud ERP adoption in Jordan: an exploratory study | Qualitative | • Security uncertainty<br>• Lack of Top management support<br>• Sensitivity of the information in the firm |
| **17** | 24 | Towards better understanding of determinants logistical factors in SMES for cloud ERP adoption in developing economies. | Quantitative | • Technical barrier<br>• Lack of top management support |
| **18** | [17] | Implementation of cloud ERP in the SME: evidence from UAE | Qualitative | • Lower organizational independency |
| **19** | [22] | Factors affecting cloud ERP adoption in Saudi Arabia: an empirical study | Quantitative | • Top management support<br>• Organisational culture<br>• Lack of competition |