An Evaluation of the Adoption of Cloud Accounting by SMEs in Zimbabwe

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ABSTRACT

This paper investigated the use of cloud accounting by SMEs in Zimbabwe. The research used a quantitative approach and simple stratified random sampling techniques, stratifying according to firm size. A total of 132 questionnaires were used to collect data, and SPSS version 22.0 was used for the analysis. The study findings revealed a very low adoption of cloud accounting among SMEs in Zimbabwe. The foremost reasons for the low adoption rate of cloud accounting are a lack of awareness of the usage of cloud accounting, concerns about data security, and cost implications. The study further revealed that lack of training, data migration challenges, technical difficulties, integration issues, and concerns about data accuracy are the challenges faced by SMEs in implementing cloud accounting. The study recommends that SMEs prioritise training and skill development for their staff to build technical expertise in the utilisation of cloud accounting software. Furthermore, as the main stakeholder, the government should launch public awareness campaigns to educate small businesses about the benefits and opportunities of adopting cloud accounting technology.

Keywords: Adoption, Utilisation, Cloud Accounting, Small and Medium-Sized Enterprises, Zimbabwe
JEL Classifications: M15, M42, M49

1. INTRODUCTION

Small and Medium-Sized Enterprises (SMEs) are acknowledged as the foundation of economies globally, making substantial contributions to employment, innovation, and economic expansion (Adam and Alarifi, 2021; European Commission, 2021). The SME sector constitutes a vital component of the Zimbabwean economy, contributing significantly to the generation of employment, economic growth, and innovation (Dlamini and Schutte, 2020; Chakravarty, 2023). Despite their importance, small businesses often face resource constraints, limited access to technology, and evolving regulatory landscapes, which can hinder their ability to adopt advanced accounting technologies (Achieng and Malatji, 2022). In recent years, the landscape of accounting practices has undergone a significant transformation, with the advent of cloud-based technologies reshaping the field of accounting and methods of financial management (Ma, Fisher & Nesbit, 2021; Kumar & Bhaskaran, 2016). Dimitriu and Matei (2015) posit that cloud

accounting involves using web-based software to manage financial transactions, replacing traditional on-premises accounting systems.

The literature asserts that there are numerous benefits to using cloud accounting among SMEs; these include cost-effectiveness, accessibility, and scalability, making it a potentially transformative tool for businesses facing resource constraints (Shetty and Panda, 2021; Ma et al., 2021; Ou & Pavur, 2015; Miller, 2008; Alsuwaidi et al., 2024). Sobhan (2019) also highlighted some benefits of cloud accounting, including reduced expenses, easy data access, ample storage and automated backups, increased security, and flexibility. In this context, cloud accounting emerges as a potential solution for SMEs in Zimbabwe, as it offers cost-effective, scalable, and accessible financial management tools that have the potential to improve efficiency and competitiveness among small businesses (Shoniwa, 2021; Nyathi et al., 2018). However, it appears that little information exists regarding cloud accounting use by SMEs in Zimbabwe, and the rate of its use is still unknown. This level

has not been thoroughly investigated or documented in Zimbabwe; hence, the adoption of cloud accounting within the Zimbabwean SME landscape remains relatively understudied.

The objective of this paper is to investigate the level of use of cloud accounting by SMEs in Zimbabwe. This research represents a critical step towards understanding the evolving landscape of financial management practices within the Zimbabwean SME sector and the role that cloud accounting technologies can play in driving innovation, efficiency, and growth in this vital segment of the economy. This study further adds to the body of knowledge in the academic literature by offering research-based information on SMEs' adoption of cloud accounting in emerging economies. The structure of this paper is as follows: The ensuing section reviews literature related to cloud accounting, particularly among SMEs. The third section presents the methodology that describes the research design, including data collection methods, sample selection criteria, and analytical techniques applied in this study. This paper's penultimate, final section presents and discusses the findings obtained from surveys. Finally, the article concludes the study with a conclusion section synthesising key findings and providing actionable recommendations for SMEs, policymakers, and other stakeholders.

2. LITERATURE REVIEW

Cloud accounting transformed the accounting landscape for businesses of all sizes. It revolutionised the way in which financial information is managed through the Internet. This phenomenon emerged in the early 2000s, offering an online data storage and processing approach (Islam et al., 2023). As internet connectivity became more reliable, businesses began exploring ways to leverage cloud technology for various functions, including accounting. According to Romney and Steinbart (2009), cloud accounting is a component of the transformation of an accounting information system (AIS), which is a system that collects, records, and archives. It converts data into knowledge that facilitates decision-making. Using cloud computing on the Internet to construct a virtual AIS is what Ping and Xuefeng (2011) characterised as cloud accounting; put another way, cloud computing plus accounting = cloud accounting. Christauskas and Miseviciene (2012) stated that a cloud-based accounting system manages business accounts entirely online. Considering the above definitions, cloud accounting uses an accounting system that operates on remote servers and is available over the Internet, in contrast to traditional accounting software installed on individual computers or networks.

Cloud accounting allows businesses to manage their financial transactions, records, and reporting in a virtual environment, offering accessibility, scalability, and collaboration (Ma et al., 2012; Dimitriu and Matei, 2015). Before the advent of cloud computing, accounting software was typically installed and operated on individual computers or local servers, and these accounting software packages required manual installation, updates, and maintenance by the user (Lafta, 2022; Dykstra and Miller, 2013; Deshmukh, 2006). Tawfik et al. (2023), in the same vein as Surbiryala and Rong (2019), posit that the historical development of cloud accounting reflects a gradual but transformative shift in the accounting landscape. It has evolved from early web-based solutions to sophisticated platforms that take advantage of cloud technology, artificial intelligence, and automation to offer businesses more efficient and collaborative financial management solutions (Kratzke, 2018). Cloud accounting provides numerous benefits to businesses of all sizes, including increased flexibility, accessibility, and efficiency in managing financial tasks (Ma et al., 2021; Eshun, 2016; Miller, 2008). Furthermore, cloud accounting permits customers to operate remotely by providing them access to financial information from any location with an internet connection, collaboration, and real-time monitoring of financial information (Wyslocka and Jelonek, 2015). Additionally, it eliminates the need for costly hardware installations and software updates and reduces IT maintenance expenses (Shetty and Panda, 2021). Cloud accounting is crucial in modernising financial management practices, improving efficiency, and empowering businesses to make informed decisions to achieve their strategic objectives (Sobhan, 2019). However, researchers have highlighted that cloud accounting is still relatively new for SMEs; therefore, they must be educated about its benefits to support their operations (Metya et al., 2023; Rawashdeh and Rawashdeh, 2023).

3. METHODOLOGY AND DATA

3.1. Theoretical Framework
Numerous theories can be applied while researching IT adoption (Baiod and Hussain, 2024). The unit of analysis for the current study is at the organisational level. Hence, the most relevant and commonly used theory for such studies is the Technology Acceptance Model (TAM) (Mortenson and Vidgen, 2016). TAM was designed to be a framework that adheres to a thrifty approach and can be used to analyse a wide range of technological user behaviours (Davis, 1989). TAM explains the acceptability of information systems by individuals. According to TAM, technology acceptance is predicted by individuals' behaviour choices, which vary depending on how useful and easy they think technology is for the task (Tırpan and Bakırtaş, 2020). TAM has the following structures: perceived usefulness (PU), perceived ease of use (PEOU), attitude, and behavioural intention to use, as shown in Figure 1.

PU and PEOU are critical in understanding user acceptance and adoption of technology, especially in contexts like SMEs where resources and time are often constrained (Tırpan and Bakırtaş, 2020; Abbasi et al., 2015). TAM asserts that a technology's perceived utility and usability have a significant impact on whether people adopt it (Mortenson and Vidgen, 2016). While the theory was not initially designed for accounting studies, its principles can be adapted and applied to understand the adoption of technology in the context of accounting practice. PU refers to the extent to which SME owners or managers believe cloud accounting will enhance the business's performance (Venkatesh and Bala, 2008). PEOU refers to the degree to which people think that utilising a particular technology or software is free of effort (Deng, 2016). Researchers can explore how the ease of use of cloud accounting influences professionals' decisions to adopt and integrate them into their workflow (Eldalabeeh et al., 2021).

Figure 1: Technology acceptance model
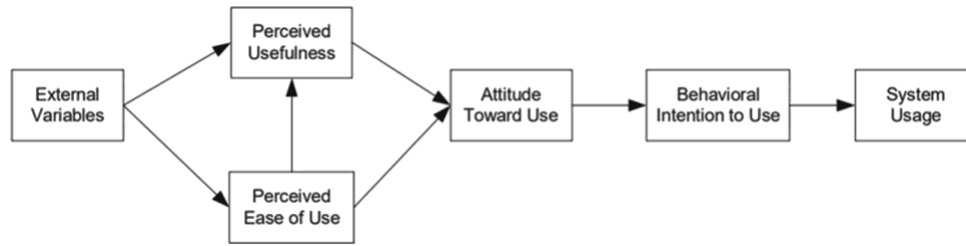
In this study, PEOU is the degree to which the SME owner or manager believes that using cloud accounting will be free of effort. In the context of Zimbabwean SMEs, TAM can be used to assess how these perceived attributes influence the adoption of cloud accounting systems. TAM can be extended and adapted to include additional variables relevant to specific contexts. For example, external variables such as internet accessibility, cost considerations, and technological literacy can be integrated into the model to provide a more comprehensive understanding. TAM has been extensively validated and used in various contexts to understand technology adoption and usage. Its robustness and reliability make it ideal for investigating new technologies like cloud accounting.

3.2. Research Method
The study used a quantitative approach to investigate Zimbabwean SMEs' utilisation of cloud accounting. A quantitative approach enabled the study to draw generalisable conclusions about SMEs' use of cloud accounting in Zimbabwe based on a representative sample (Creswell, 2014). Given the potentially vast number of SMEs in Zimbabwe, a quantitative approach allowed for gathering data from a significant portion of the intended audience, enhancing the study's representativeness and reliability. According to the Reserve Bank of Zimbabwe (RBZ) (2022), there are 1,954,202 Micro, Small, and Medium Enterprises in Zimbabwe, of which 74,260 are registered SMEs. There are 66,443 small and 7817 medium-sized firms. The study obtained the list of operating SMEs from RBZ and the SME Association of Zimbabwe.

3.3. Sample
The study adopted simple random sampling techniques, stratifying according to the firm's size. The sample size was calculated using the Yamane sample size calculation formula. This study distributed 220 questionnaires to entities in the (a) agriculture, (b) manufacturing, (c) hospitality, or (d) finance and business services sectors. Entities included in the study were those that employed between 6 and 75 permanent employees and had: (i) an annual turnover of between US$500 000 and US$3 million; (ii) an asset base of between US$250 000 and US$2 million. The study designed a structured questionnaire based on the research objectives and relevant literature. The questionnaire was sent with a cover letter.

3.4. Data Collection and Analysis
Data was collected from November 2023 to January 2024. SPSS version 22.0 was used to analyse data. The study used Cronbach's α to assess internal consistency. The study required permission from the SMEs to access the participants, and the organisation's approval was obtained to allow the management of the participants to partake in the study. The researcher conducted ethical training at North-West University (NWU) and had no conflict of interest in this study. This study protocol was approved by the Ethics Committee of NWU (NWU-01934-24-A4). Exploratory factor analysis (EFA) was performed, with principal axis factoring as the extraction method and Kaiser normalisation. Kaiser Meyer-Olkin's measure of sampling adequacy and Bartlett's test of sphericity are reported. Kaiser's criteria were used to determine the number of factors to extract. Cronbach's α was computed to assess internal consistency. Furthermore, mean factor scores were derived and subsequently summarised with their corresponding means and standard deviations.

4. RESULTS

The study performed an exploratory factor analysis to determine the critical relationships among the variables that are being measured. Exploratory factor analysis provides insight into the latent structure of a group of observable variables without exerting a present framework on the outcome (Pett et al., 2003). A factor analysis employing principal-component factoring techniques was conducted to evaluate the measure's construct validity. A factor analysis was performed for the five factors identified to explain the utilisation of cloud accounting, as depicted in Table 1 below. The findings showed that the cumulative variance equals $62.139 > 0.60$, which implies a degree of satisfactory construction, indicating that the conditions for the exploratory factor analysis were met. The correlation matrix was enough for the factor analysis, according to the Kaiser-Meyer-Olkin measure of sampling adequacy, which had a value of 0.621. The results from the communality values for all items were above 0.5. Table 2 shows that the Bartlett's test was 436.86, with a significance level of 0.001, which is < 0.05.

The study used convergent and discriminant validity criteria to assess the validity of measurement instruments (Hair et al., 2021). Cronbach's α and composite reliability were applied to evaluate the reliability of the constructs (Henseler et al., 2014; Ab Hamid, Sami, & Sidek., 2017). The reliability values were more significant than the 0.70 threshold, as shown in Table 2. The values on the item loading and average variance extracted (AVE) exceeded the threshold of 0.50 (Fornell and Larcker, 1981). The convergent validity in this study, as indicated by an AVE above 0.6, strengthens the validity of the study findings and enhances confidence in the conclusions drawn from the data (Ab Hamid, Sami, & Sidek., 2017). This further indicates that the measurement instrument is effective in assessing the intended constructs related to cloud accounting usage among SMEs in Zimbabwe.

Table 1: Reliability and validity analysis

Latent variables	Number of items	Cronbach's α	Communalities	Composite reliability	Average variance extracted
Uca	11	0.792	0.625	0.712	0.608
RACa	5	0.873	0.617	0.829	0.712
CFDACa	6	0.701	0.703	0.743	0.623
CNACa	7	0.867	0.669	0.810	0.657
BCaA	8	0.813	0.589	0.774	0.616

UCa: Usage of cloud accounting, RACa: Reasons for adoption of cloud accounting, CFDACa: Challenges faced during the adoption of cloud accounting, CNACa: Causes for non-adoption of cloud accounting, BCaA: Benefits of cloud accounting adoption

Table 2: KMO and Bartlett's test

Kaiser-Meyer-Olkin measure		0.621
Bartlett's test	Approx. Chi-square	2536.76
	Sig.	<0.001

The profiles of the respondents reveal that males (60.6%) were more than females (39.4%). The majority of participants (44.7%) were between the ages of 41 and 50, with those between the ages of 21 and 30 (32.6%) and those within the range of 31-40 years (22.7%), and there were no participants below 21 years and above 51 years. The highest qualification of most of the respondents was a bachelor's degree (55.3%), 33.3% held diplomas, and 11.4% held a master's degree. The prevalence of bachelor's degrees among 55.3% of respondents and 11.4% for master's degrees indicates a strong foundation of academic knowledge and critical thinking skills. This cohort likely possesses a well-rounded understanding of business principles, essential for effectively integrating and managing cloud accounting solutions within SME operations.

Most of the respondents were bookkeepers (39.4%), managers (28.8%), accountants (18.9%), and owners (12.9%). Firms in the retail industry were 44.7%, followed by those in the service industry, 32.6%, and those in the beverage and construction industries, 11.4% each. Table 3 further reveals that most firms were small (67.4%) and medium-sized (32.6%). Table 4 shows a low usage of cloud accounting by SMEs in Zimbabwe, with 7.6% of the firms applying cloud accounting.

The study observed that only medium-sized firms were adopters of cloud accounting, and there was no adoption among small-sized firms. This signifies a considerable gap between the potential benefits of this technology and its actual adoption within the SME sector. Sobhan (2019) asserted that cloud accounting enhances lower costs, easy access to all information, ample storage and automatic backups, increased security, and flexibility. The findings on the low adoption of cloud accounting among SMEs in Zimbabwe concur with Sastararuji et al. (2022), who found a low adoption of cloud accounting among SMEs in Thailand. SMEs in Iraq are also low adopters of cloud accounting (Harash, 2017). This is consistent with the findings of Nyathi et al. (2018), who discovered that 81% of Zimbabwean SMEs maintain their records manually. Table 5 presents the attitude of participants towards the use of cloud accounting.

The low mean values on PU and PEOU in Table 5 reveal that SMEs in Zimbabwe generally do not perceive cloud accounting as useful or easy to use. Statements 1 to 3 indicate that SME owners and managers do not see significant benefits from using

Table 3: Profile of respondents

Details	Frequency	Percent	Cumulative percent
Gender			
Male	80	60.6	60.6
Female	52	39.4	100.0
Total	132	100.0	
Age			
21-30 years	43	32.6	32.6
31-40 years	30	22.7	55.3
41-50 years	59	44.7	100.0
Total	132	100.0	
Qualifications			
Diploma	44	33.3	33.3
Bachelor's degree	73	55.3	88.6
Master's degree	15	11.4	100.0
Total	132	100.0	
Position			
Bookkeeper	52	39.4	39.4
Accountant	25	18.9	58.3
Manager	38	28.8	87.1
Owner	17	12.9	100.0
Total	132	100.0	
Type of business			
Beverages	15	11.4	11.4
Retail	59	44.7	56.1
Service	43	32.6	88.6
Construction	15	11.4	100.0
Total	132	100.0	
Firm size			
Small	89	67.4	67.4
Medium	43	32.6	100
Total	132	100	

Source: Fieldwork

Table 4: Application of cloud accounting

Details	Frequency	Percentage	Cumulative percentage
Use of cloud accounting			
Yes	10	7.6	7.6
No	122	92.4	100
Total	132	100	

Source: Fieldwork

cloud accounting, as shown by mean values of 1.37, 1.38 and 1.70, respectively. SMEs in Zimbabwe believe cloud accounting does not enhance productivity, efficiency, or overall business performance. The study observed that, generally, SMEs were not aware of the usefulness of cloud accounting; this was contrary to Khayer et al. (2020), who reported that SMEs are fully aware of cloud technologies and their benefits. This perception has led to a low adoption rate of 7.6%; SMEs seem unmotivated to invest time and resources into a system they do not see as beneficial. This finding is consistent with the results obtained by Baiod and Hussain (2024), who reported low adoption of emerging

technology among SMEs as they think there is no strategic need to adopt these technologies. The low mean values on the PEOU statements indicate that SME owners and managers find cloud accounting systems challenging to learn and use. Zimbabwean SMEs perceive that cloud accounting is complex and requires significant effort to operate. The low mean values for PU and PEOU demonstrate significant barriers to Zimbabwean SMEs adopting cloud accounting. The findings show that PU and PEOU positively affect the adoption of cloud accounting among SMEs. Table 6 shows the reasons for SMEs' non-adoption of cloud accounting in Zimbabwe.

The findings revealed that the primary reason for low adoption is a lack of awareness of the usage of cloud accounting, as indicated by a mean value of 4.57. The findings are consistent with those of Papadopoulos et al. (2020), who discovered that lack of awareness of cloud accounting was the main reason for its low usage. Respondents indicated that they were concerned about data security and cost implications, as shown by mean values of 3.52 and 3.34, respectively. Saad et al. (2022) also found that awareness and concerns about data security affected the usage of cloud accounting among Jordanian SMEs. Zimbabwean SMEs seem to prefer the usage of traditional accounting (mean value of 3.32). This was also found by Nyathi et al. (2018), who revealed that over 80% of SMEs in Harare rely on manual bookkeeping. The study further revealed that resistance to change and a lack of

trust in cloud accounting are the reasons for SMEs' low adoption of cloud accounting. Table 7 presents results on the challenges SMEs face while implementing cloud accounting.

The 10 SMEs (7.6%) that have adopted cloud accounting highlighted that a lack of training was the major challenge they faced when adopting cloud accounting (mean value of 4.310). Data migration challenges and technical difficulties were some of the major challenges faced by SMEs in implementing cloud accounting, as shown by mean values of 4.032 and 3.824, respectively. These findings are consistent with the results obtained by Sastararuji et al. (2022), who reported that lack of expertise and technical challenges were the most common challenges SMEs faced in using cloud accounting. Integration issues (mean value of 3.227) and concerns about data accuracy (mean value of 2.928) were among the least challenging challenges SMEs face in adopting cloud accounting. These findings concur with literature that asserts that SMEs are slow adopters of technology (Chouki et al., 2020; Zaied, 2012). These results support the arguments of Saad et al. (2022), Adam and Alarifi (2021), and Song et al. (2020), who advocated for a multi-faceted approach involving stakeholders from the public and private sectors, including policymakers and technology providers, to increase awareness of the usage of technology among small businesses.

Table 5: Attitude towards using cloud accounting

No.	Statement	Mean	Standard deviation	Skewness	Kurtosis
1	Learning to operate cloud accounting software is easy for me	1.37	0.906	3.094	2.568
2	I find cloud accounting systems to be flexible to interact with	1.38	0.890	2.760	1.229
3	It is easy for me to become skilful at using cloud accounting	1.70	1.005	1.182	0.267
4	Using cloud accounting improves my job performance	2.35	1.243	1.124	−0.371
5	Cloud accounting enhances the effectiveness of my financial management	2.34	1.202	2.835	−1.596
6	Cloud accounting makes it easier to handle financial tasks	1.81	0.814	0.973	0.726
7	I intend to use cloud accounting in the future	1.95	1.115	1.375	1.118
8	I will recommend cloud accounting to other SMEs	1.95	1.101	1.389	1.239
9	I predict that I will use cloud accounting regularly	2.04	1.160	1.187	−0.535

Table 6: Reasons for non-adoption of cloud accounting

Details	N	Mean	Standard deviation	Skewness	Kurtosis
Lack of awareness	122	4.57	0.498	−0.268	−1.961
Concerns about data security	122	3.52	1.490	−0.650	−0.925
Cost implications	122	3.34	1.53	−0.357	−1.291
Lack of technical skills	122	3.15	1.395	−0.119	−1.115
Resistance to change	122	2.62	1.555	0.142	−1.6
Preference for traditional accounting	122	3.32	1.368	−0.598	−0.767
Lack of trust in cloud accounting	122	2.18	1.554	0.931	−0.733
Valid N (listwise)	122				

Source: Own fieldwork

Table 7: Challenges encountered during the adoption of cloud accounting

Details	n	Mean	Standard deviation	Skewness	Kurtosis
Technical difficulties	10	3.824	1.317	−0.643	−1.449
Lack of training	10	4.310	0.683	−1.035	−1.224
Data migration challenges	10	4.032	0.966	−1.035	−1.224
Integration Issues	110	3.227	1.549	0.484	−2.277
Concerns about data accuracy	10	2.928	1.853	0.312	−2.139
Valid N (listwise)	10				

Source: Fieldwork

5. CONCLUSION

The study examined the extent of SMEs' use of cloud accounting in Zimbabwe. The survey results revealed that SMEs in Zimbabwe use cloud accounting less. The paper further revealed the reasons for the non-adoption of cloud accounting among Zimbabwean SMEs. The results showed that lack of awareness about the usage of cloud accounting, concern about data security, and cost implications were the primary reasons for the non-adoption of cloud accounting. Additionally, the results also indicated that SMEs prefer the use of traditional accounting systems to cloud accounting systems. The study further revealed that resistance to change and a lack of trust in cloud accounting are the reasons for SMEs' low adoption of cloud accounting. The study also found that lack of training, data migration challenges, technical difficulties, integration issues, and concerns about data accuracy are the challenges faced by SMEs in implementing cloud accounting.

The study recommends that SMEs should invest in educating themselves about the benefits and functionalities of cloud accounting. This could involve attending workshops and webinars or seeking guidance from industry experts to understand cloud accounting can streamline their financial management processes and improve business efficiency. Furthermore, SMEs should prioritise training and skill development for their staff to build technical expertise using cloud accounting software. As the major stakeholder, the government should launch public awareness campaigns to educate SMEs about the benefits and opportunities of adopting cloud accounting technology. The government should invest in improving digital infrastructure and connectivity, particularly in rural or underserved areas, to ensure reliable internet access for SMEs and facilitate the adoption of cloud accounting technology. Furthermore, the government can strengthen data security and privacy regulations to protect SMEs' financial information stored in the cloud, which will boost SME owners' confidence in using cloud accounting. Moreover, the government can introduce financial incentives, such as grants or tax breaks, to reduce the economic barriers to cloud accounting adoption for SMEs, and these incentives can help offset the costs associated with purchasing software licences, training staff, and upgrading hardware infrastructure.

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