Hindawi
Human Behavior and Emerging Technologies
Volume 2023, Article ID 8571227, 15 pages
https://doi.org/10.1155/2023/8571227

Research Article

The Determinants of Cloud Computing Vision and Its Impact on Cloud Accounting Adoption in SMBs

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Received 5 October 2022; Revised 29 August 2023; Accepted 4 September 2023; Published 25 September 2023

Academic Editor: Stephen Gbenga Fashoto

This study challenges the conventional belief of autonomy among the technological, organizational, and environmental (TOE) framework constituents and probes into their effect on the adoption of cloud-based accounting within small- to medium-sized enterprises (SMEs). We postulate that a vision of cloud computing plays a mediating role between the TOE elements and the adoption of cloud accounting practices. The study delves deeper into exploring the mediating impact of this cloud computing vision in driving the adoption of cloud accounting. Applying a snowball sampling methodology, we successfully collated 293 relevant responses. The outcomes lend support to the interconnectedness prevailing among the TOE components. The cloud computing vision emerged as a crucial mediator, accentuating the influences of organizational readiness, senior management endorsement, relative advantage, compatibility, and competitive pressure on the transition to cloud-based accounting. Additionally, our findings illuminate the impact of cultivating a vision of cloud computing on the adoption of cloud accounting methodologies. These results contribute to the enrichment of the TOE model by calling into question the prevalent notion of independence among TOE components when employing a vision as an intention surrogate. Consequently, we encourage further research to embed the vision as a proxy for intention within the TOE model and to concurrently investigate potential correlations among the TOE elements.

1. Introduction

The rapid evolution of information technology (IT) has transformed the business landscape, with cloud computing emerging as a pivotal force in reshaping organizational operations. Cloud technology offers flexible and scalable solutions that transcend physical limitations, enabling businesses to streamline processes, enhance collaboration, and achieve greater agility in today's dynamic market [1, 2]. Within the realm of cloud computing, cloud accounting has gained significant attention due to its potential to revolutionize financial management practices. Cloud accounting refers to the delivery of accounting services over the Internet, which enables real-time access to financial data and collaboration [3]. By leveraging cloud-based platforms, businesses can optimize their financial processes; benefit from improved efficiency, scalability, and cost-effectiveness; and increase the accessibility of critical financial information. As a result, cloud accounting has become a focus of interest for researchers and practitioners. Moreover, advances in cloud technology have opened new opportunities to leverage artificial intelligence (AI) and machine learning (ML) algorithms in accounting processes; for example, Cloud AutoML can support the creation of powerful, personalized machine-learning models [4, 5]. These ML algorithms can process and review financial data, thereby identifying discrepancies and creating a list of outlier values for auditors to analyze [6]. The integration of AI and ML technologies with cloud accounting has the potential to increase accuracy, automate operations, and provide valuable insights for decision-making processes.

Although previous studies have mainly focused on examining the intentions and attitudes of individuals or organizations toward technology adoption, including cloud accounting [7–11], there is a notable research gap on the importance of a business-led cloud computing vision in shaping adoption decisions. A well-defined cloud computing vision serves as a roadmap for organizations, guiding their strategic decisions and investments in technology [12]. It provides a comprehensive and forward-thinking view of how cloud computing fits with a company's future goals, plans, and overall business strategy, but existing research has not adequately explored the determinants of cloud computing vision and its impact on cloud accounting adoption, especially in the case of small- and medium-sized businesses (SMBs). Understanding the factors that contribute to the development of a cloud computing vision among SMBs is essential for a variety of reasons. First, SMBs frequently face unique challenges, such as limited resources and expertise, that can significantly affect their technology adoption decisions [13, 14]. Second, despite the significant benefits that cloud accounting brings to SMBs, adoption rates in this sector remain relatively low compared to larger businesses [15]. Consequently, exploring the determinants of cloud computing perception among SMBs and its impact on cloud accounting adoption among SMBs can provide valuable insights into factors that facilitate or hinder the adoption process, helping SMBs make informed decisions. In light of these research gaps, the primary objective of this study is to investigate the determinants of cloud computing vision among SMBs and its impact on the adoption of cloud accounting. The primary objective of this research is to elucidate the crucial elements that shape the evolution of cloud computing vision in small- and medium-sized businesses (SMBs). This is accomplished by analyzing the interrelation between the concept of cloud computing vision and the adoption of cloud accounting practices. Additionally, this study explores the linkages between the incorporation of cloud accounting systems and various dimensions such as technological factors, environmental aspects, and organizational characteristics.

In prior research on the adoption of technology, including cloud computing, intention and attitude served as mediating or dependent variables, particularly when the TOE framework was employed [7, 9, 11, 16–21]. This study is unique in that it challenges previous research by employing the "vision" of cloud computing as a proxy for intent when examining corporate adoption. In addition, it challenged the imposition of independence between the components of the TOE framework. Therefore, the findings of this study are expected to contribute to the existing body of knowledge by providing insights into the determinants of cloud computing vision and its impact on the adoption of cloud accounting in SMBs. Moreover, this research aims to bridge the gap between intention-based models and the significance of a business-led cloud computing vision in technology adoption. The findings from this study will bear significant practical significance for managers of small- and medium-sized businesses (SMBs), policymakers, and providers of cloud accounting services. The insights derived could guide them in formulating strategies and launching initiatives that bolster the successful integration of cloud accounting technologies in their respective domains. The study suggests that a business-level cloud computing vision is more important than individual intentions when it comes to adopting cloud accounting. Individual intentions may vary within an organization, and it is the overall vision that reflects the business's intention toward technology adoption. The study argues that the influence of company-specific characteristics represented by the TOE framework (technology, organization, and environment) should be considered when examining cloud accounting adoption. Considering that vision is an organizational factor, the study also questions the assumption of independence among TOE factors and proposes that cloud computing vision mediates the effects of technical and organizational factors on cloud accounting adoption. By exploring the factors that impact cloud computing vision and analyzing its mediating effect, the study aims to provide a better understanding of the role of vision in technology adoption, particularly in the context of cloud accounting adoption among SMEs. The findings of the study are expected to benefit SME managers, policymakers, and cloud accounting service providers by providing insights into the role of cloud computing vision and its relationship with TOE factors in technology adoption.

2. Literature Review and Conceptual Framework

2.1. Cloud Computing, Cloud Accounting, and Vision. Cloud computing includes Internet-based applications, data center hardware, and system software [22]. Ping and Xuefeng [23] introduced "cloud accounting." Cloud accounting uses Internet-based cloud computing to establish a virtual accounting information system. A holistic vision is important for technology adoption [12]. Miller and Dess [24] define vision as broad, inclusive, and forward-thinking. This vision expresses an organization's deep desire to improve the future through technology. It steers the organization's technology adoption decisions [24]. The vision motivates and unites the organization. A strong vision examines technology adoption's long-term influence and sustainability, aligning with the organization's broader viewpoint. A deep and meaningful vision helps the organization overcome hurdles and flourish in technology adoption and integration. According to Rawashdeh and Bakhit [12], a well-crafted vision drives the organization toward successful technology adoption and maximizing technical potential. The organization's future standing motivates action [24]. The cloud computing vision, like Rawashdeh and Bakhit's, concentrates on the company's cloud computing goals and initiatives rather than the entire organization. For this study, a "cloud vision" is a brief, convincing explanation of the firm's cloud ambitions.

2.2. TOE Framework. Conceived by [25], the technology-organization-environment (TOE) framework offers a valuable understanding of how organizations embrace technology (Figure 1). This model, foregrounding technological, organizational, and environmental factors, is employed to

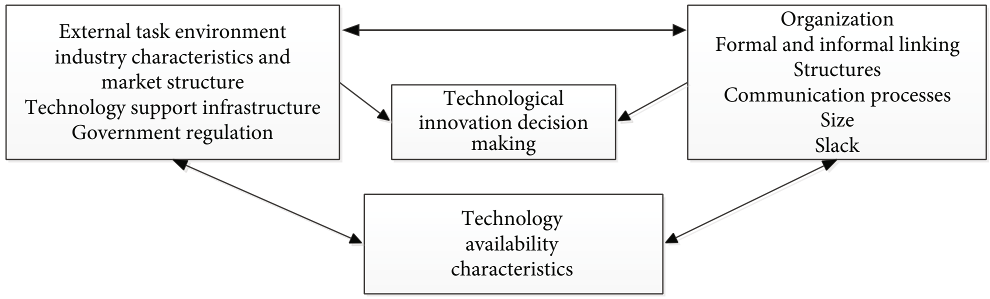

Figure 1: The TOE model according to Tornatzky, Fleischer, and Chakrabarti in 1990.

examine technology adoption within organizations [26, 27]. Its credibility as an alternative to the concept of intention, however, has been questioned by some scholars [26]. To counter this, the 1996 definition of "vision" by Miller and Dess has been posited as a more compelling replacement, capturing the unifying and inspirational role of an organization's vision [28]. While other models like the theory of reasoned action, the theory of planned behavior, and the technology acceptance model provide insight into individual technology adoption, the TOE framework offers a holistic organizational viewpoint. Therefore, in our study, vision supplants intention, underlining the need to account for organizational dynamics. The TOE framework, though widely used, is noted by some researchers as requiring specificity and modification depending on the technology under study [29, 30]. Consequently, researchers have introduced crucial factors into the framework, tailoring them to their investigative needs [12, 30, 31]. In the case of cloud accounting adoption, a technological understanding of its advantages and compatibility is essential [32, 33]. Organizationally, it necessitates changes in culture, processes, relationships, managerial support, and requisite skills [34, 35]. Environmental aspects such as competitive pressure, vendor support, and security concerns are also significant [36, 37]. Thus, the adoption of cloud accounting is steered by technological, organizational, and environmental factors under the umbrella of a shared cloud computing vision. By coupling the TOE framework with vision and supplanting intention, we can better comprehend the drivers of cloud accounting adoption in organizations.

2.2.1. Technology Context

(1) Relative Advantage. According to Rogers [38], relative advantage refers to "the extent to which a technological component is judged to be more advantageous to businesses." The advantages of adopting technology greatly impact how businesses perceive its value. Cloud accounting offers a wide range of benefits that set it apart from traditional desktop-based accounting systems [12]. These advantages include resource sharing, scalability, cost savings, mobility, and flexibility, which collectively contribute to the appeal of cloud accounting for organizations [31, 39, 40]. One of the primary advantages of cloud accounting is its unrestricted accessibility and availability of financial data from anywhere at any time. This accessibility empowers employees to work remotely and collaborate efficiently, resulting in increased flexibility and productivity [12, 39]. Additionally, cloud accounting eliminates the need for businesses to invest in and maintain their own IT infrastructure, leading to cost savings and reduced administrative burdens [3, 12]. Scalability is another significant advantage offered by cloud accounting, allowing businesses to easily adjust their resource usage to match their current needs. This adaptability enables organizations to effectively manage fluctuations in demand, providing a cost-effective and flexible solution [41, 42]. Furthermore, cloud accounting enhances mobility by enabling employees to access and work on financial documents from any location with an Internet connection. This increased mobility promotes collaboration, facilitates remote work, and improves overall business efficiency [39]. Cloud accounting also promotes resource sharing within organizations by leveraging shared cloud-based resources. This allows employees to access necessary data and applications from different locations, streamlining workflows and reducing redundancy [3, 12]. Therefore, it is expected that the relative advantage will markedly sway the perspective on cloud computing by accentuating the merits and enhancements offered by cloud-based solutions in comparison to traditional methodologies, thereby fostering adoption [12]. The perception of amplified efficiency, cost-effectiveness, scalability, and accessibility intrinsic to cloud computing serves to mold the corporate vision, steering it toward an operational approach more anchored in cloud technologies.

(2) Compatibility. Cloud computing includes Internet-based applications, data center hardware, and system software [22]. Ping and Xuefeng [23] introduced "cloud accounting." Cloud accounting uses Internet-based cloud computing to establish a virtual accounting information system. A holistic vision is important for technology adoption [12]. Miller and Dess [24] define vision as broad, inclusive, and forward-thinking. This vision expresses an organization's deep desire to improve the future through technology. It steers the organization's technology adoption decisions [24]. The vision motivates and unites the organization. A strong vision examines technology adoption's long-term influence and sustainability, aligning with the organization's broader viewpoint. A deep and meaningful vision helps the organization overcome hurdles and flourish in technology adoption and

integration. According to Rawashdeh and Rawashdeh [43], a well-crafted vision drives the organization toward successful technology adoption and maximizing technical potential. The organization's future standing motivates action [24]. The cloud computing vision, like Miller's, concentrates on the company's cloud computing goals and initiatives rather than the entire organization. For this study, a "cloud vision" is a brief, convincing explanation of the firm's cloud ambitions. It is the company's cloud strategy.

(3) Complexity. Complexity is defined by Sonnenwald et al. [44] as the perceived difficulty associated with understanding and using a system. When it comes to cloud accounting, complexity manifests in ways that directly influence the vision of cloud computing and the adoption process. Complexity plays a crucial role in cloud computing and directly affects its overall vision. Several studies have highlighted the negative impact of complexity on the successful implementation and adoption of cloud solutions [29, 45]. In the context of cloud accounting adoption, the aspect of complexity surfaces in several dimensions including time for task execution, system integration issues, and interface design considerations. Initially, organizations may confront elongated timelines as they strive to match legacy systems with cloud platforms, thereby adding complexity and possibly hindering cloud adoption [1, 46]. Subsequently, the task of integrating applications with cloud infrastructure emerges as a complex process that demands interoperability and compatibility for the effective transfer of data and optimal system functionality. The inability to overcome these complexities can dissuade organizations from fully embracing cloud computing [47–49]. Lastly, the design of user interfaces in cloud accounting systems holds significant sway over user experience and ease of use. If the interface design is nonintuitive and marked by complexity, it could impede user adoption and negatively influence the overall vision of cloud computing. Several empirical studies support the idea that complexity and the degree of technology deployment are inversely related [1, 44]. As complexity increases, the level of technology adoption decreases, compromising the vision of cloud computing. This negative influence of complexity underscores the importance for organizations to address and mitigate complexity through appropriate strategies and solutions. Therefore, complexity acts as an independent variable that negatively impacts the vision of cloud computing. The challenges associated with integrating legacy systems, ensuring application integration, and addressing interface design complexities create barriers to the successful adoption and utilization of cloud solutions. Recognizing and effectively managing complexity is crucial to unlocking the full potential of cloud computing and aligning it with organizational goals and objectives.

2.2.2. Organization Context

(1) Organizational Readiness. Tan et al. [50] define organizational preparedness as the manner in which managers evaluate their firm's awareness, resources, commitment, and governance in the context of adopting IT. Numerous studies, such as those by Cho et al. [40], Awa and Ojiabo [29], Gangwar et al. [1], and Tan et al. [50], have predominantly classified organizational readiness into two central dimensions: financial preparedness and technological readiness. Financial preparedness pertains to having adequate financial resources for the deployment of cloud accounting and managing the continuous expenses associated with its use [50]. This enables businesses to invest in infrastructure development, staff training, and maintenance, ensuring seamless integration and utilization of cloud accounting systems. Technological readiness, on the other hand, revolves around having the right infrastructure and skilled human resources to effectively manage and utilize cloud accounting [50]. This includes having the appropriate hardware, software, and network infrastructure in place, as well as competent personnel who can confidently handle cloud accounting systems and address any technical challenges that may arise [12]. Rawashdeh and Bakhit [12] suggest that when organizations are well prepared, it creates a favorable environment for adopting technology, provides the required financial resources and technological capabilities, and fosters a proactive and ambitious mindset. This enables businesses to embrace cloud computing technologies, such as cloud accounting, and capitalize on the benefits they offer, including enhanced scalability, cost efficiency, and improved data accessibility.

(2) Top Management Support. In the context of IT adoption, top management support and engagement are pivotal for effective implementation, echoing findings across various management domains [1, 12]. Salwani et al. [51] define top management support as the crucial perspectives and activities of executive leadership in leveraging technology to enhance business performance. This encompasses a clear long-term vision, enforcement of organizational values, effective resource allocation and usage, cultivation of a positive organizational culture, empowerment of staff, and tackling resistance to change [1, 29, 30, 52]. During the adoption of novel technologies, top management is expected to foster a culture of information exchange, exhibit robust leadership, and actively engage in the adoption process [12, 29, 51]. Furthermore, top executives are likely to discern the strategic value of adopting cloud accounting and be prepared to encounter the associated risks. The study solidly proposes that top management support positively influences an organization's cloud computing vision [12].

2.2.3. Environmental Context

(1) Competitive Pressure. In the realm of adoption research technology, it is evident that competitive pressures have a crucial role, functioning as a potent driving force as articulated by numerous scholars such as Ganguly [45], Stjepić et al. [53], and Gangwar et al. [1]. In their in-depth study, Zhu and Kraemer [54] provide an exhaustive definition of competitive pressures, indicating the magnitude of stress that a business endures from its competitors within the industry. This crucial variable is frequently regarded as beneficial for IT adoption, especially when the technology in question significantly impacts competition and evolves into

a fundamental strategic necessity for maintaining competitiveness in the market [29]. Further, Vives [55] posits that firms can effectively mitigate these competitive pressures by resorting to innovation, astute strategizing around competition norms, and outshining their competitors. Rawashdeh and Bakhit [12] suggest that competitive pressures exert a positive and influential impact on a business's cloud computing vision. In this light, competitive pressures serve as a stimulating factor in molding the cloud computing vision of firms, propelling them to adopt advanced, economically efficient, and scalable cloud solutions to preserve their industry leadership and gain an upper hand over competitors.

(2) Vendor Support. The role of cloud service providers is pivotal in the realm of cloud accounting as they ensure consistent data accessibility for businesses [12]. The competency of these providers is a critical concern, and elements such as a robust availability design and thorough platform testing contribute to unbroken data availability [29]. However, concerns arise regarding server effectiveness, potential failure points, and the provider's aptitude to manage applications and deliver accurate results [1]. Vendor accessibility also holds importance in this context, with customer support being key to resolving issues [12, 29]. Security, another critical factor, extends beyond authentication and includes data protection, disaster recovery, and business continuity [3, 56]. Vendor support, encompassing technical assistance and user education, can shape the cloud computing vision, influencing the adoption of cloud technologies. The study suggests that vendor support might exert a favorable influence on the perception of cloud computing. Vendor support, which includes both technical aid and user education, is instrumental in shaping the cloud computing vision, as it reassures businesses of the dependability and efficient handling of their cloud-based systems, thereby affecting their selection and implementation of cloud technologies.

(3) Training. Training is defined as the extent to which a business trains its employees on the proper and efficient use of technology. Due to the complexity of cloud accounting as an information system, a business must train and educate its personnel prior to adopting it [57]. It alleviates employees' worries and stress associated with the use of cloud accounting while also providing motivation and a better understanding of the benefits of cloud accounting for their tasks. It eliminates ambiguity and assists staff in accumulating knowledge for future use. Additionally, it increases its ease of use [31, 58]. According to Rawashdeh [58], training is a critical component of every sector's development and progress. According to Gangwar et al. [1], training is critical for innovation adoption and application, as well as the training that contributes to reducing uncertainties in adoption. Their findings established the importance of anticipated outcomes of technology use, showing that training programs may be used to increase ease of use and cloud computing vision. According to this study, training will have a positive effect on cloud computing vision.

2.3. Cloud Computing Vision and Cloud Accounting Adoption. This study, as has been alluded to earlier, employs the concept of cloud computing vision as a substitute for intention. Within the purview of this research, a "cloud vision" is seen as a strategically crafted manifesto by an organization that delineates its aims to incorporate cloud computing throughout its entire operations [12]. The ultimate goal is to alter operational frameworks and remain current with the continuous advancements in cloud technology [12]. An organization's cloud computing vision can be viewed as a more accurate predictor of its future state and activities than just an intention. Therefore, when surveying the respondent, it becomes more pertinent to ask about the company's vision than to query about their personal intentions. This approach garners responses that are more reflective of the organization's direction than of the respondent's personal intentions [12]. The vision essentially outlines the architectural design, identifying the pivotal elements of the organization's future stance. It provides an overarching perspective, guiding the organization in strategic decision-making pertaining to resources, priorities, abilities, budgetary considerations, and the breadth of activities [59]. The vision encapsulates the goals that decision-makers are committed to accomplishing in the future, informed by their prospective achievements. Schwertner [60] emphasizes that it is incumbent upon leaders to rigorously scrutinize their organization's existing cloud status. This is to identify potential integration points for cloud accounting technologies and pinpoint reasons for revamping the current IT methodologies. According to Reijnen et al. [61], initiating the journey toward a cloud computing vision with a shared vision is fundamentally critical. A body of research suggests a connection between vision and adoption, with prior studies implying that a well-articulated digital vision can spur innovation within organizations more effectively. Nevertheless, this correlation has yet to be empirically tested within the context of cloud accounting [12, 62–64]. Therefore, this study proposes that the cloud computing vision will positively influence the adoption of cloud accounting.

3. Data Analysis

3.1. Hypotheses Development. Building upon the theoretical foundation established earlier, this section introduces a series of hypotheses aimed at comprehensively investigating the factors influencing cloud computing vision and its subsequent impact on cloud accounting adoption. These hypotheses are structured to explore distinct dimensions of the cloud computing vision, encompassing elements such as relative advantage, compatibility, complexity, organizational readiness, top management support, competitive pressure, vendor support, and training. The subsequent hypotheses outline the anticipated relationships between these factors and cloud computing vision, ultimately culminating in the final hypothesis that posits the influence of cloud computing vision on cloud accounting adoption. By systematically examining these interrelated factors, this study endeavors to provide valuable insights into the complex dynamics of cloud accounting adoption within contemporary organizational contexts. Thus, the following hypotheses have been formulated:

Hypothesis 1. Relative advantage has a positive influence on cloud computing vision.

Hypothesis 2. Compatibility has a positive influence on cloud computing vision.

Hypothesis 3. Complexity has a negative influence on cloud computing vision.

Hypothesis 4. Organizational readiness has a positive influence on cloud computing vision.

Hypothesis 5. Top management support has a positive influence on cloud computing vision.

Hypothesis 6. Competitive pressure has a positive influence on cloud computing vision.

Hypothesis 7. Vendor support has a positive influence on cloud accounting vision.

Hypothesis 8. Training has a positive influence on cloud accounting vision.

Hypothesis 9. Cloud computing vision has a positive influence on cloud accounting adoption.

3.2. Measurement of the Factors. The established TOE framework by Tornatzky et al. [25] is utilized in this study as a tool to ensure and affirm its reliability. Given its flexibility, the TOE framework has been extensively used across a multitude of different research scenarios, thereby reinforcing its credibility and validation. In this research, we merge the TOE framework, an orientation toward cloud computing, the incorporation of cloud accounting, and an organization's performance, as evaluated through the balanced scorecard, into an exhaustive model. However, the development of the research framework for this particular study called for the use of eleven distinct components. We devised a series of exclusive items intended to measure the stance on cloud computing and the adoption of cloud accounting. These item modifications were inspired by extant literature and research scales, eventually resulting in the establishment of a seven-point Likert scale that extends from "strongly disagree" to "strongly agree." For the purposes of our research, these items were compiled into a specific online survey, the dissemination of which was augmented through targeted advertising on various social media platforms.

3.3. Sampling. This study employed an online survey method utilizing snowball sampling due to the complexities of identifying Jordanian companies utilizing cloud accounting and the absence of a comprehensive directory of such companies. This approach, previously adopted in several studies [65, 66], began with a small initial pool of accountants from companies known to use cloud accounting in Jordan. Each participant was subsequently requested to suggest additional companies that could be included. The survey link was distributed via email, Facebook, WhatsApp, LinkedIn, and other communication tools. The survey incorporated filter questions, a strategy suggested by Rawashdeh et al. [20], to ensure respondents fit the targeted demographic. Filters inquired about professional accounting status, company exploration or implementation of cloud accounting, and company vision for the cloud transition. The number of employees was also considered, with eligible companies having more than five but fewer than 250 employees, in line with Jordan's definition of small and medium enterprises. After active outreach and encouragement, 110 companies were contacted, resulting in the distribution of 508 questionnaires. Out of the 508 questionnaires distributed, 312 were returned, yielding a total response rate of 61.4%. After reviewing the returned questionnaires, 293 were found to be valid and usable in the analysis, resulting in a valid response rate of 57.68%. The data obtained from the questionnaire was tested using factor analysis. The search model was created using structural equation modeling (SEM). The software used for all statistical analysis was SPSS 25 and AMOS version 24. Sample characteristics are summarized in Table 1. Moreover, 93% of the respondents hold at least a bachelor's degree. In terms of business organization size, Table 1 shows that about 58% of business organizations employ 49 or fewer workers. The trading sector represented 55% of the study sample, and 40.8% were sole proprietorships. The number of employees in the companies in the sample ranges from one to 249. It is clear that 100% of the respondents fall within the Jordanian government's definition of small and medium enterprises. This confirms that the target audience of SMBs has completed the questionnaires. 53.9% of the respondents were male, 73.0% of the sample had an undergraduate degree, and most respondents, 45%, were between the ages of 20 and 30.

3.4. Questionnaire Design. Nine of the 48 questions are demographic, including filters, 32 are about TOE factors, four are about cloud computing vision [67], and three are about cloud accounting adoption. After reviewing the technology adoption literature, the cloud computing concept was established. It was then adjudicated by a panel of academics. 33 accountants answered the questionnaire and gave valuable input as a pilot test. To improve readability while retaining accuracy and appropriateness, pilot research participants and academics revised the questionnaire. The pilot research examined demographic descriptive data. 40% of responders are women, and 60% are men. Accountants average 36. Accountants usually have bachelor's degrees. 80% of financial accountants have that degree. Master's and PhD degrees are second at 17%, followed by associate and other degrees at 3%. The data were analyzed using the principal component analysis extraction method and then subjected to varimax rotation with Kaiser normalization, which successfully converged after five iterations.

3.5. Measurement Validity. In the stage of our data analysis, we chose factor analysis as our primary method of exploration. This process incorporated the application of principal component analyses (PCAs) in tandem with varimax rotations. Our analysis rendered a Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy that came to a value of 0.724 (Table 2). This figure not only surpasses the recommended lower boundary of 0.50 but also intriguingly

Table 1: Demographic profile.

Profile of the companies		Frequency	Percent
Number of Employees	6-20	205	70%
	21-249	88	30%
Sector	Manufacturing	32	10.9%
	Trading	210	71.7%
	Services	51	17.4%
Type of business	Sole proprietorship	114	38.9%
	Partnership	97	33.1%
	Company limited	82	28.0%
Gender	Male	158	53.9%
	Female	135	46.1%
Education	Secondary qualification	6	2.0%
	Diploma	64	21.8%
	Undergraduate degree	214	73.0%
	Postgraduate degree (master/PhD)	9	3.1%
Respondent age	20-30 years	132	45%
	31-40 years	59	20%
	41-50 years	53	18%
	51-60 years	29	10%
	>60 years	20	7%

corresponds to the value previously documented [68]. The results of our analysis fostered confidence in our chosen methodology, as evidenced by the range for factor loadings, which fell between 0.741 and 0.930, as outlined in Table 2. Furthermore, our measurement of internal consistency reliability, achieved through the use of Cronbach's alpha, exceeded the suggested threshold of 0.70 for every variable in our study [69]. Table 2 provides Cronbach's alpha coefficients, a measure of internal consistency and reliability within a scale. These coefficients assess the extent to which the items in a construct correlate and measure the same underlying concept. The values range from 0.86 to 0.91, indicative of the reliability of the scales used in the study. Higher values suggest stronger internal consistency and reliability. These values underscore the robustness of the measurement instruments employed in the research, reinforcing the credibility of the study's findings. This evidence further strengthens the validity of our analytical technique, ensuring reliable and trustworthy insights derived from our research.

3.6. Convergent Validity. To validate the scale used in this research, we utilized SEM with AMOS 24, which allowed a thorough validation of the structural model's convergent and discriminant validity and hypotheses. Convergent validity examines consensus among indicators probing the same construct, measured by factor loading, composite reliability (CR), average variance extracted (AVE), maximum shared variance (MSV), and maximum reliability (MaxRH). For sufficient convergent validity, AVE should exceed 0.50 and CR should surpass 0.70 (Table 3). All eight factors demonstrated robust discriminant validity, with AVE outperforming MSV, indicating no convergent validity issues in the study (Table 3).

3.7. Validity of Discrimination: HTMT. The interrelationships between measures, which may encompass related concepts, demonstrate an item's capacity to segregate and accurately portray different ideas. These outcomes are underscored via the heterotrait-monotrait ratio (HTMT) analysis, with the corresponding results presented in Table 4. Drawing upon the work of Henseler et al. [70], it is inferred that the data emanating from the HTMT analysis, as delineated in Table 4, does not signify any issues pertaining to discriminant validity, on condition that the criterion ($HTMT \leq 0.85$) is upheld. This inference synchronizes perfectly with the insights extracted from our research endeavor. Consequently, the predominant objective of invoking the HTMT criterion is to safeguard against multicollinearity among latent constructs. This signifies that each construct operates autonomously, thereby preserving the integrity of the others.

Discriminative validity determines whether theoretically unrelated constructs are, in fact, unrelated. The discriminative validity of the variables can be determined by showing that there is either no correlation or a very low correlation between measures of unrelated constructs. A correlation coefficient, such as Pearson's r, is used to measure the degree of correlation. The value of the correlation coefficient, which indicates the strength and direction of the relationship between the variables, is always between 1 and -1. Large correlations between scales or scale items are problematic in

Table 2: Factor analysis and Cronbach's alpha.

Item	1	2	3	4	5	6	7	8	Cronbach's alpha	
TRAI3	0.93									
TRAI2	0.92								0.9	[58]
TRAI4	0.85									
TRAI1	0.82									
READ2		0.92								
READ3		0.91							0.9	[83, 84]
READ4		0.86								
READ1		0.81								
MASU3			0.91							
MASU2			0.91						0.89	[83, 85]
MASU4			0.83							
MASU1			0.82							
VESU3				0.92						
VESU2				0.91					0.88	[84, 86]
VESU4				0.84						
VESU1				0.78						
COLX3					0.90					
COLX2					0.89				0.91	[85, 86]
COLX4					0.85					
COLX1					0.78					
COPR3						0.91				
COPR2						0.89			0.88	[84, 85]
COPR4						0.83				
COPR1						0.78				
ORRE3							0.91			
ORRE2							0.88		0.87	[83, 86]
ORRE4							0.84			
ORRE1							0.74			
COMP3								0.90		
COMP2								0.88	0.86	[83]
COMP4								0.79		
COMP1								0.78		
KMO and Bartlett's test										
Kaiser-Meyer-Olkin's measure of sampling adequacy										0.724
Bartlett's test of sphericity									Approx. chi-square	6547.268
df										496
Sig.										0.000

terms of their discriminative validity, although there is no consensus on this matter. When defining the concept of discriminative validity, values beginning with $r = 0.85$ are generally considered to be high [6, 71].

3.8. Specific Bias and Common Method Bias. Prior to the commencement of the data analysis, measures were initiated to identify and alleviate the potential influence of common method bias (CMB) throughout the survey construction process, a protocol that aligns with the methodology proposed by Podsakoff et al. [72]. To elaborate, following the careful selection of appropriate terminology tailored to our audience and the implementation of a response filter, participants were invited to offer their feedback in an uninhibited manner. Subsequently, we undertook an empirical assessment of CMB, utilizing Harman's single-factor technique. An unrotated factor analysis determined that the dominant component explained only 13.709% of the total variation

Table 3: Validity analysis.

	CR	AVE	MSV	MaxRH	1	2	3	4	5	6	7	8
1	0.90	0.70	0.01	0.92	0.84							
2	0.90	0.69	0.01	0.92	-0.06	0.83						
3	0.91	0.71	0.02	0.94	0.01	0.04	0.85					
4	0.89	0.67	0.04	0.92	0.06	0.04	0.155*	0.82				
5	0.88	0.66	0.02	0.93	0.04	-0.05	-0.03	0.156*	0.81			
6	0.89	0.67	0.01	0.94	0.01	0.05	0.10	0.07	-0.10	0.82		
7	0.88	0.64	0.04	0.94	0.10	0.07	0.10	0.190**	0.04	0.09	0.80	
8	0.86	0.62	0.02	0.94	0.03	0.08	0.04	0.08	-0.05	0.04	0.150*	0.79

*$P < 0.050$, **$P < 0.010$.

Table 4: Discriminant validity assessment ($HTMT_{0.85}$).

	1	2	3	4	5	6	7	8
1	[redacted]							
2	0.034	[redacted]						
3	0.015	0.045	[redacted]					
4	0.065	0.011	0.184	[redacted]				
5	0.022	0.059	0.036	0.147	[redacted]			
6	0.047	0.025	0.099	0.097	0.092	[redacted]		
7	0.1	0.076	0.11	0.232	0.056	0.095	[redacted]	
8	0.011	0.072	0.055	0.065	0.068	0.025	0.148	[redacted]

(see Table 5), well below the 50% threshold. This suggests no significant influence of the common method bias (CMB) on the data, allowing progression to causal modeling (see Figure 2).

3.9. Model Fit. The suitability of the measurement models was assessed using a variety of goodness-of-fit (GoF) indices. The GoF parameters from the AMOS software's output include absolute, incremental, and parsimonious fit measures. The absolute fit measures, represented by chi-square (2)/CMIN, probability, CMIN/DF, GFI, and RMSEA values, illustrate a good model fit. Meanwhile, incremental fit measures, as evidenced by AGFI, TLI, and NFI values, show an acceptable model fit. Parsimonious fit measures, demonstrated through PNFI and PGFI values, reflect a satisfactory model fit [71, 73, 74]. The observed values of 1404.679 for CMIN, 0.925 for CFI, and 0.059 for RMSEA underscore a robust model fit, aligning with the suggested value. For incremental fit measures, the reported values of 0.771 for AGFI, 0.920 for TLI, and 0.861 for NFI signal a decent model fit. For parsimonious fit measures, the noted values of 0.813 for PNFI and 0.713 for PGFI fall within the recommended range, thereby indicating a suitable model fit. Table 6 presents the findings of the structural testing model based on these goodness-of-fit criteria.

3.10. Analysis Model. The critical ratio (CR) test statistic is used to verify the statistical significance of SEM parameter estimates. A CR value of more than 1.96 at a significance level (P value) less than 0.05 indicates that the hypothesis is strong and cannot be disproved [71, 73, 74]. Dividing the parameter estimate (Est.) by its standard error (S.E.) yields CR. Table 7 shows six hypotheses that fulfill acceptance requirements with CR values over 1.96. Three hypotheses are ignored because they are not significant. As delineated in Table 7, six hypotheses meet the acceptance benchmarks by achieving a CR value beyond 1.96. In contrast, three hypotheses fail to reach the necessary level of significance; thus, they are disregarded.

The findings extracted from Table 7 indicate that several hypotheses within the current research model (depicted in Figure 2) have been validated, indicating a substantial positive influence on the vision of cloud computing. These influential factors include relative advantage ($CR = 8.491$, $P = 0.001$, $\beta = 0.373$), managerial support ($CR = 8.704$, $P = 0.001$, $\beta = 0.387$), competitive pressure ($CR = 7.862$, $P = 0.001$, $\beta = 0.351$), organizational readiness

Table 5: Total variance explained.

Component	Initial eigenvalues			Extraction sums of squared loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	4.387	13.709	13.709	4.387	13.709	13.709
2	3.520	10.999	24.708			
3	3.153	9.854	34.563			
4	3.033	9.478	44.041			
5	2.812	8.787	52.828			
6	2.742	8.570	61.397			
7	2.331	7.286	68.683			
8	2.235	6.984	75.667			

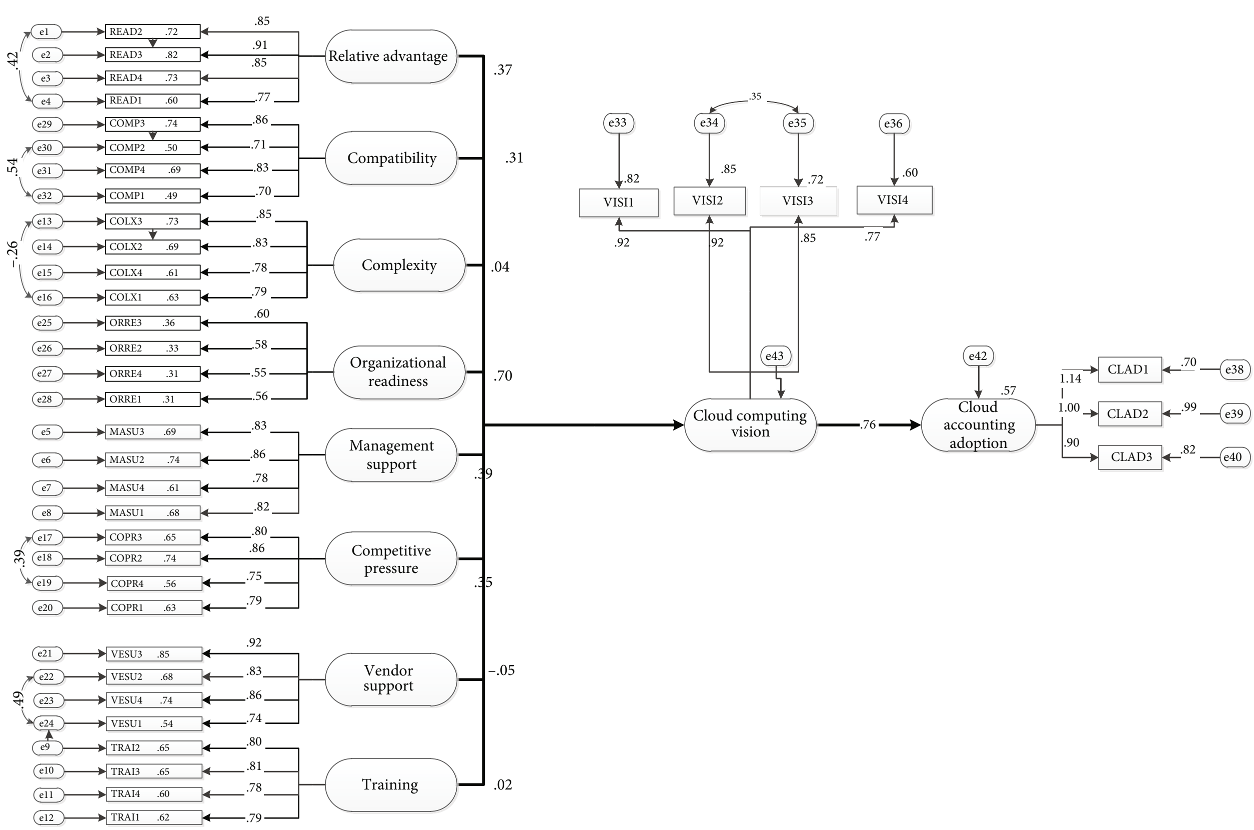

Figure 2: Study model.

(CR = 16.416, $P = 0.001$, $\beta = 0.696$), and compatibility (CR = 7.146, $P = 0.001$, $\beta = 0.315$). Conversely, certain elements such as training (CR = 0.56, $P = 0.575$, $\beta = 0.024$), complexity (CR = 0.985, $P = 0.325$, $\beta = 0.04$), and vendor support (CR = −1.334, $P = 0.182$, $\beta = -0.051$) do not exert a significant impact on the vision of cloud computing based on the outcomes presented in Table 7. These results emphasize that the vision of cloud computing is influenced by a range of technological, organizational, and environmental factors. Additionally, it was revealed that the vision of cloud computing significantly and positively affects the adoption strategy (CR = 20.52, $P = 0.001$, $\beta = 0.757$), as indicated in Table 7.

4. Discussion

The acceptance and implementation of the cloud computing vision are influenced by various factors. Five key factors that have a positive impact on the adoption of the cloud computing vision include organizational preparedness, top management support, relative advantage, compatibility, and competitive pressure. Previous studies conducted by Hashim et al. [75] and Ayadi [76] have supported the notion that compatibility and relative advantage play significant roles in technology adoption. From a technological standpoint, the development of a cloud computing vision is shaped by the perceived benefits of the technology and its alignment

Table 6: Model fit.

Measure	Estimate	Threshold
Absolute fit measures		
Chi-square minimum (CMIN)	1404.679	—
Degrees of freedom (DF)	700	—
CMIN/DF	2.007	Between 1 and 3
Chi-square significance (shi-square sig)	0	P < or = 0.05
Comparative fit index (CFI)	0.925	>0.90
Standardized root mean square residual (SRMR)	0.071	<0.08
Root mean square error of approximation (RMSEA)	0.059	<0.06
Incremental measures of fit		
Tucker-Lewis index (TLI)	0.92	Close to 1
Adjusted goodness-of-fit index (AGFI)	0.771	Close to 1
Normalized fit index (NFI)	0.861	Close to 1
Parsimonious fit measures		
Parsimonious normal fit index (PNFI)	0.813	Better models approach value 1
Parsimonious goodness-of-fit index (PGFI)	0.713	Better models approach value 1

Table 7: Standardized regression weights: (group number 1 - default model).

Hypotheses	Est.	S.E.	C.R.	P	β	Result
H1: vision<–relative advantage	0.26	0.03	8.49	***	0.37	Accepted
H2: vision<–compatibility	0.22	0.03	7.15	***	0.32	Accepted
H3: vision<–complexity	0.03	0.03	0.99	0.33	0.04	Rejected
H4: vision<–organizational readiness	0.48	0.03	16.42	***	0.7	Accepted
H5: vision<–top management support	0.27	0.03	8.7	***	0.39	Accepted
H6: vision<–competitive pressure	0.24	0.03	7.86	***	0.35	Accepted
H7: vision<–vendor support	-0.04	0.03	-1.33	0.18	-0.05	Rejected
H8: vision<–training	0.02	0.03	0.56	0.58	0.02	Rejected
H9: adoption<–cloud computing vision	1.05	0.05	20.52	***	0.76	Accepted

***$P < 0.001$.

with the organization's existing business processes and culture. Hence, organizations take technological considerations into account when formulating their technology vision, which is consistent with previous literature exploring the relationship between technological factors and cloud computing vision [12, 77].

Organizational factors also play a crucial role in technology adoption, as supported by the researchers [1, 12, 78]. Organizational readiness is expected to have a primary impact on a company's cloud computing vision. This readiness is assessed by managers in terms of the organization's understanding, resources, commitment, and governance required for IT adoption, as well as the level of support provided by top management for the cloud computing vision. Consequently, organizational factors significantly shape the cloud computing vision, aligning with prior studies on the subject [12, 15, 79, 80].

When considering environmental factors, the influence of competitive pressure on technology adoption has been validated by Christiansen et al. [81]. The results suggest that the competitive pressure exerted by industry rivals plays a crucial role in the formation of the cloud computing vision. Organizations acknowledge the benefits gained by competitors who have successfully developed a cloud computing vision and transitioned to cloud-based solutions. Thus, competitive pressure is expected to drive the development of the cloud computing vision, consistent with existing research on the role of competitive pressure in shaping organizational visions [12, 82].

However, the study did not find sufficient evidence to support the impact of complexity, training, and vendor support on the cloud computing vision. This may be attributed to the forward-looking nature of the vision, where developers primarily focus on future perspectives and may not consider factors related to practical implementation, such as ease of use, complexity, training, and supplier support. Nevertheless, the study did establish a strong association between the cloud computing vision and the adoption of cloud accounting. This finding aligns with the definition of cloud accounting, which highlights the integration of cloud computing and accounting practices. Therefore, the study emphasizes the interdependence between cloud accounting adoption and the cloud computing vision, suggesting that companies with a well-defined cloud computing vision are more inclined to adopt related applications like cloud accounting when the need arises. Consequently, the adoption of cloud accounting holds significant value for businesses with a cloud computing vision seeking to embrace new technologies.

This study notably contributes to the academic literature concerning the technology, organization, and environment (TOE) model and its application in the adoption of cloud accounting within small- and medium-sized enterprises (SMEs). It challenges the established understanding of the TOE factors as independent variables, introducing the cloud computing vision as a significant mediator between organizational readiness, top management support, relative advantage, competitive pressure, compatibility, and the incorporation of cloud accounting. Further, it underscores the profound interplay between technological, organizational, and environmental constituents and the cloud computing vision, accentuating its pivotal role in bridging TOE factors and cloud accounting adoption. From a theoretical perspective, the study amplifies our understanding of technology adoption by replacing intention with vision as a proxy, thus highlighting the interaction between TOE components when mediated by cloud computing vision. This approach contrasts previous studies which might have undervalued the impact of TOE factors on technology adoption by focusing solely on intention.

In terms of practical implications, this study is of significant relevance to SME managers, policymakers, and cloud accounting service providers. It endorses the importance of a well-articulated cloud computing vision in promoting cloud accounting adoption, particularly for forward-looking SMEs. It recommends that these enterprises create a conducive environment for technology adoption by cultivating a robust cloud computing vision. Moreover, the study delves into the determinants shaping the formation of the cloud computing vision, acknowledging its crucial role in successful technology assimilation. The findings underline the necessity to factor in variables such as perceived usefulness and compatibility of technology, financial and technological readiness, top management support for IT adoption, and competitive pressures in the formulation of the cloud computing vision.

5. Conclusion

This research significantly augments the existing body of scholarly literature on the technology-organization-environment (TOE) framework, specifically in the context of cloud accounting implementation within small- and medium-sized enterprises (SMEs). It challenges the current understanding of the independence of TOE variables by demonstrating that the vision of cloud computing functions as a mediating entity among various factors such as organizational readiness, top management backing, relative advantage, competitive pressure, and compatibility, which lead to the adoption of cloud accounting. Furthermore, the research underscores the intricate interplay between technological, organizational, and environmental facets and the vision of cloud computing, thereby underlining its pivotal role in understanding the correlation between TOE variables and the adoption of cloud accounting. The study posits that earlier research may have overlooked the impact of these factors on technology adoption by merely focusing on intent rather than considering vision as a surrogate for intentions. In contrast, the present study accentuates the reciprocal interplay and interdependencies among TOE variables when cloud computing vision operates as a mediating entity. These findings carry profound practical implications for SME managers, policymakers, and cloud accounting service providers. The research underscores the utmost importance of a robustly formulated cloud computing vision in propelling the adoption of cloud accounting, particularly for ambitious SMEs. It suggests that SMEs should actively support the technology adoption process and create an enabling environment by establishing a robust cloud computing vision. Furthermore, the study thoroughly examines the factors that influence the formation of the cloud computing vision, recognizing its vital role in ensuring successful technology adoption. The results underscore the need to consider factors such as perceived usefulness and compatibility of technology, financial and technological readiness, top management support for IT adoption, and competitive pressures when formulating the cloud computing vision. However, it is important to acknowledge the limitations of this study, which focuses on evaluating the restructured TOE framework within the specific context of cloud accounting adoption in SMEs. Future research should explore the moderating effect of the cloud computing vision on the adoption of other technologies and validate these findings by collecting data from larger organizations. In conclusion, this study challenges the assumption of independence among TOE factors and emphasizes the need for a more comprehensive understanding of the relationships between TOE factors and the adoption of cloud accounting.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The authors hereby affirm that there are no known financial conflicts of interest or personal relationships that could potentially be perceived as influencing the findings reported in this study.

Acknowledgments

According to university officials, the researcher receives the funding after receiving the research acceptance letter within a specified period.

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