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DIGITAL LEADERSHIP, CLOUD ACCOUNTING, AND SUSTAINABLE GROWTH: THE MEDIATING ROLE OF DIGITAL TRANSFORMATION

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Abstract

Purpose:
This study has discourses the impacts of digital leadership and cloud accounting on sustainable growth and the moderator is the digital transformation. As companies continue to rely more on digital technologies to enhance its operations in the market and consequently its sustainability in the long-term, it is critical to examine the perceptions surrounding the role that leadership and adopting of technologies have in maintaining business performance.

Methodology:
The quantitative and cross section research design was used and a sample of 400 respondents at the managerial level was to be employed in the SMEs. The analysis of the data was performed through a partial Least Squares Structural Equation Modelling (PLS-SEM) and direct effects, indirect effects and reliability of the model and validity of the model were simultaneously estimated. Measurement model evaluation has shown that reliability and convergent and discriminant validity was good but structural model provided information on the strength and importance of their relationship.

Findings:
The results suggest that cloud accounting and digital leadership have a positive impact on sustainable growth with a significant effect, and digital leadership is the most predictive. The importance of the two constructs in the digital transformation is also relatively high and indicates that the two constructs are very vital in promoting the modernization of the organization.

Implications:
The study has a significant emphasis on digital leadership and accelerate the adoption of cloud accounting tools so that they become long term felt sustainably. The strategic sustainability objectives are crucial areas that the companies need to put into consideration when they are digitizing transformation to the fullest. The outcomes are capable of giving practical knowledge to organizational managers, policy makers and digital strategists in order to enhance organizational resilience and sustainable performance in an ever-evolving digital world.

INTRODUCTION

The rapid growth in the digital technologies has altered the way organizations interact, compete and create sustainable values. All industries companies are starting to shift towards increasingly digitally enabled business where business leadership capability and technological support systems clash to provide a sustainability demand (Munir et al. 2025). Among the most significant trends in this sphere, there is, first and foremost, the emergence of digital leadership that is the ability of leaders to employ digital tools, bring in digital culture, and guide the organizations towards the technological-change driven direction (Ullah, Wang, and Fiaz 2025). Global markets are changing but at the same time becoming interdependent and unpredictable and it is important that companies have leaders with digital mind and competencies who can lead the transformation agendas, which would entirely keep organizations afloat in the long term (Kavre 2025). Consequently, the digital leadership role within an organization has been brought to the limelight in terms of utilizing how companies are adopting technologies such as cloud computing, big data, artificial intelligence, and automation to secure growth is realized in an organizational manner that will be sustainable (Carbonara and Basile 2025).

Cloud accounting is among the most transformative technologies to alter the business operations as it changes the old accounting functions to guarantee cloud platforms accounting technology (Aljawarneh et al. 2025). It will enable accounting of financial information in real time, greater accuracy, cost-efficient, and available to decision-makers, which will be made possible by cloud accounting. It reduces the need to use physical infrastructure and provides scalable solutions that can operate over distance that are flexible and aimed at supporting remote workers, cross-departmental, and transparency in operations (Rahman 2025). The cloud accounting is among the tools that are necessary to facilitate flexibility in the financial area and strategic decision making when the companies must operate in dynamic environments (Akhtar, Iatzaz, and Hassan 2025). Despite the importance of the already established benefits of cloud accounting, the extent of its adoption that can contribute towards achieving greater organizational sustainability effects depends on the provision of leaders, the willingness to go digital, and the incorporation into organization activities (Quang, Vu, and Phuc 2025). It is often the critical input of the leaders of digital to enable this type of integration by ensuring innovation and reducing resistance to changes of technology through alignment of digital tools to the objectives of the business (Lescop et al. 2025). Along with leadership and embracing technology, it is true that the organizations today are pressed to achieve sustainable growth- in other words, growth, which balances between economic performance of an organization and social responsibility, and conservation of the environment (Mahmood, Khakwani, et al. 2024). Sustainability is an emerging business concern of primary concern to the stakeholders, governments, as well as international structures. Sustainable growth is not entirely on profitability but on the creation of long term value, the effective utilization of resources and sound ethical behavior of business (Mahmood, Ditta, et al. 2024). The digital technologies have emerged as a major facilitator of sustainability that allows firms to handle operations, reduce wastes, and unfreeze insights that enable making responsible decisions (Deeb and Aldehayyat 2024). At that, with effective digital leadership at hand, and cloud-based systems, more operations can be effective and bring clear data needed to perform sustainable reporting and compliance, thus playing an important role in the sustainability goals.

Nevertheless, regardless of all these enhancements, it is important to ask a very question how do digital leadership and cloud accounting influence sustainable growth, and how do they influence it? As per the existing literature, the process of digital transformation, where the organizations are adopted with the implementation of digital technologies into every aspect of business, could be a potentially influential mediating variable. The digital

transformation is not a matter of adopting technology, but it is rearranging the businesses, processes, and culture and customer experiences. It includes the tactical alignment of technology to business strategy and workforce that can participate in the concept of a lifelong learning and innovation. Whenever organizations are able to do a successful digital transformation, they undergo better positions to achieve efficiency, innovation, resilience, and sustainability.

Digital leadership is a major contributor of the digital transformation because leaders define the vision and allocate resources, motivate employees, and create cultures that are accommodative of the digital world. Cloud accounting on the other hand provides the technological foundation whereby financial processes can be configured to be computerized so that organizations can be in a position to integrate real time data in strategic planning. All of these factors allow the positive climate of total digital transformation. However, insufficient empirical data developed further to examine the interaction of these constructs like digital leadership, cloud accounting, and digital transformation and sustainable growth in the new economies with higher technological adoption rates but varying digital maturity based on firms. This is an existing gap that has resulted in the need to conduct the study that will examine the compound effect of digital leadership and cloud accounting to get sustainable outcomes through the moderating and mediating effect of digital transformation.

In this manner, the proposed study will determine the role of digital leadership and cloud accounting in determining sustainable growth and digital transformation will be utilized as a measure variable. The research contributes to the existing literature on the subject in a several ways. We shall start by noting that it is the hybrid of both leadership and technology perceptions as the role of strategic digital capability in the terms of sustainability is elucidated. Second, it renders cloud accounting a significant technological impetus that enhances change and sustainable performance. Third, it underscores the strength of digital transformation in providing the medium through which leadership and adoption towards technology is related to sustainability consequences. It is also significant that those organizations that are concerned with turning into more competitive, becoming more resilient and sustainable evolve these relations to live in an increasingly digital world.

Overall, this research is full of theoretical, managerial, and practical implications to policymakers, business managers, and organizations that would like to employ digital tools and leadership capabilities to support a long-term sustainability. The conceptualization of the mediated position of the digital transformation gives a powerful argumentative framework that can be used to understand the role of how digital leadership and cloud accounting can supplement the creation of the sustainable organization in the modern digital economy.

Literature Review

According to (Nasir, Zakaria, and Yusoff 2022) digital transformation has been one of the strategic requirements of organizations that are keen to be competitive, efficiencies and sustainability. In such a dynamic environment, internationalization of modernization has become central where the driving forces behind organizational modernization have become the digital leadership and cloud based technologies (Anwar, Anwar, and Mahmood 2023). Digital leadership acculturation of innovations, technological preparedness, and enable businesses to bargain the erratic circumstances. At the same time, cloud accounting is favorable in terms of using real-time decision-making and operational transparency that belongs to the modern financial management practice (Mart et al. 2023). Digital transformation enchants leadership, technology, and long-term expansion as one because it alters the manner business is performed, resource optimization, and development of long-term values. In the profundity of the following sections, these variables are discussed.

Digital Leadership and Sustainable Growth

According to (Mahmood, Khakwani, et al. 2024) the digital leadership may be considered one of the required competencies to achieve sustainable

organizational performance. By facilitating the process of transitioning into new technologies, promoting the evidence-based decision-making, and establishing the culture of the relentless newness, digital-competent leaders will be able to guide companies (Mahmood, Ditta, et al. 2024). These leaders have an added advantage to predict the trends in their industry and respond to market disruptions and build of strategic digital visions that would fit in line with their sustainability objectives (Deeb and Aldehayyat 2024). Digital leadership, also, promotes knowledge sharing and co-operation among the staff and empowers them, which are all oriented towards the flexibility of the organization (Deeb and Aldehayyat 2024). Encouraging the adoption of technologies in an environmentally-friendly way and enabling the high-level of efficiency of the work processes, digital leaders will enable business enterprises to position resources in the most diligent environment and reduce waste (Truc and Vo 2024). Moreover, transparency and accountability are also key pillars of sustainability brought about by the digital leadership (Chen, Li, and Shahid 2024). Leaders who are intent on adopting digital strategies enable the organization to utilize its full potential in utilizing the use of sustainability metrics in the performance systems to ensure the long-term strategic alignment (Van 2024). Their narrowness on quick thinking and customer-oriented digital initiatives can help companies to stay competitive and attain achiever environmental and social requirements. Digital leadership, therefore, have transcendental effects to the adoption of technology and, ultimately, the growth that is sustainable by the generation of strategic priorities and organizational culture.

H1: There is a positive and significant relationship between digital leadership and sustainable growth

Cloud Accounting and Sustainable Growth

According to (Van 2024) cloud accounting has transformed the financial management process since it provides real-time access to data, automation is used, and the accuracy is enhanced. The capabilities make it easier to plan and improve the quality of decisions that help organizations in using resources efficiently which is one of the biggest contributors to sustainable growth (Ishaq 2024). Cloud computing does not involve physical storage thus digital audit trails are maintained and there is decreased man-handling thus costs of operations are minimized and, therefore, environmental degradation is saved (Asif, Yang, and Hashim 2024). In addition, cloud accounting assists in enhancing transparency and compliance in that it holds secure and updated financial records. This gives greater trust to the stakeholders, and also stability in the long-term (Mollah et al. 2024). Companies that have adopted cloud accounting are finding the solutions being scalable which can help the business grow without necessarily reducing the cost. It also enables remote cooperation and supports robust digital business models and this is crucial particularly in rapidly evolving settings (Wenting 2024). Combination of sustainability measurement tools and real-time monitoring allows monitoring financial, environmental, and operational performance in real-time thanks to cloud accounting systems. The innovations can be seen on the objective of sustainability as they are correct, do not waste, and responsible (Munir et al. 2025). Altogether, cloud accounting will contribute to enhancing the ability of the specified organization to implement responsible financial management that will support its sustainable evolution. Digital leadership is also discussed to have an impact on sustainable growth to the degree it has a bearing on how companies manage digital risks and cybersecurity and data governance-related aspects which are increasingly becoming interconnected with sustainability performance (Ullah et al. 2025). Digital ecosystem literate leaders would be in a better position to integrate technologies with a view to encouraging sustainability such as environmental dashboards, intelligent analytics and digital surveillance devices (Kavre 2025). They possess the strength of inspiring digital innovation, which inspires the employees to adhere to environmentally-friendly practices and become part of the change of the organizations. Furthermore, the digital leaders contribute to the efficiency of the collaboration with the external stakeholders, which contributes to the

partnerships that ensure the sustainability work (Carbonara and Basile 2025). Creating sustainable digital approaches, the leaders will ensure that the advancement in technology fosters ecological and social ideals in the long-term, which contributes to the positive relation between digital leadership and sustainable development.

H2: There is a positive and significant relationship between cloud accounting and sustainable growth

Digital Transformation as a Mediation

According to (Aljawarneh et al. 2025) digital transformation magnifies impact of the digital leadership of the sustainable growth by transforming the strategic digital visions into organizational reality. Digital leaders offer the force necessary in molding the psyche of the employees, marshal forces as well as facilitate conditions that enhance the drive of change (Lescop et al. 2025). However, leadership on its own does not create any benefits associated with sustainability, unless it inspires the adoption of the digital technologies to the business processes (Van 2024). The process is known as digital transformation, which changes the activities of leadership into performance. The organizations put organization processes at automation, data analytics, and conversion of digital workflows, which revitalize them as agile, efficient, responsible organizations, back to the environment (Nasir et al. 2022). Digital transformation assists companies in re-architecting business models to include the sustainability ideas of a circular economy, resource optimization, and environmentally conscious business. As long as digital leadership is successful in facilitating the changes initiatives, companies develop the capabilities that make them more resilient and able to create greater value in the long run (Akhtar et al. 2025). Thus, the digital transformation contributes to the closeness of the bonds between the digital leadership and sustainable growth through the action of turning the leadership-driven approaches to innovation to practice (Ullah et al. 2025). Cloud accounting is also useful in promoting the sustainable development of the paper less financial environments, minimal storage physical requirements and minimal use of energy as compared to the traditional accounting system of operations (Ishaq 2024). This makes its mistakes fewer and its automated processes more efficient thereby enabling organizations to use timely financial information in order to make informed decisions on sustainability (Chen et al. 2024). The modules in cloud platforms that are used to track sustainability reporting often keep track of environmental measures besides financial output (Mahmood, Khakwani, et al. 2024). They also enhance business continuity, recovery in disaster to undo the risks significantly relating to the failure of the system (Aljawarneh et al. 2025). Cloud accounting can allow the firms to transfer their resources to sustainability programs as it can allow them to invest in low-cost digital practices and, therefore the connection between the adoption of cloud accounting and sustainable growth is also affirmed.

H3: There is a positive and significant relationship between digital leadership and sustainable growth with mediating role of digital transformation

According to (Munir et al. 2025) cloud accounting contributes to sustainable growth more when it is established as components of bigger plans of digital transformation. Whereas cloud accounting provides an organization with technological applications such as automation, real time reports, process cost-cutting; the advantages are even more efficient when applied in a process of transforming an organization in a bigger scale (Truc and Vo 2024). Digital transformation improves the benefit of cloud accounting since it allows the financial system to be connected to other digital applications that improve cross-functioning and makes their optimization possible across the system (Mollah et al. 2024). It is an organic continuum that favors the precision of information, accountability in the activities and the strategic correspondence. Cloud accounting is not an independent business financial solution, but the driver of the digital business model, sustainability reporting, and performance monitoring with the digital transformation (Anwar et al. 2023). The

processes of transformation and the utilization of cloud systems allow companies to assess carbon footprint, monitor the consumption of resources, and identify sustainability indicators in the long-term. By incorporating cloud accounting in the process of digital transformation activities, the firm can be more efficient, innovative and better governed in order to achieve sustainable growth (Carbonara and Basile 2025). Digital change is augmenting the influences of digital leadership on sustainable development, which leans towards a mixture of systems that are aligned to both the goals of sustainability and the technological innovation. The transformational initiatives of the leaders are directed at digitalizing value chain, credit of high-end analytics and advanced resource application (Quang et al. 2025). This move will improve transparency in operations and also enable the organization to measure sustainable performance more. The digital transformation also encourages the introduction of smart and eco-friendly processes that result in the long term sustainability. When this change is positively anchored in the digital leadership, the organizations will be defined by the higher rate of productivity, reduced environmental impact, and the higher competitive state (Mahmood, Ditta, et al. 2024). The mediating effect occurs because the leadership-driven digital vision is converted into measurable sustainability outcomes, which is a process of transformation. Digital transformation is also in the middle of cloud accounting and sustainable growth as this enables the strategic sustainability tools to supplement the financial data. Under transformation, cloud accounting is connected to the system of financial reporting and a supply chain monitoring system, environmental analysis, and performance dashboard to be incorporated into a larger digital ecosystem. Through such integration, the organization is able to employ evidence-based decision-making that would enhance the sustainability outcomes (Mart et al. 2023). Digital transformation provides superior levels of automation that reduces operations bottlenecks in addition to strengthening governance structures. Because of this, cloud accounting ceases to become an effective tool but a business strategy which makes it easy to create long-term value. Such a solid connection is the confirmation of how digital transformation can improve the impacts of cloud accounting on the sustainable growth.

H4: There is a positive and significant relationship between cloud accounting and sustainable growth with mediating role of digital transformation

Digital Transformation and Sustainable Growth

According to (Deeb and Aldehayyat 2024) digital transformation directly enhances the sustainability of an improvement in efficiency in the operation, waste, and innovative strategies that are data-based. Vitality of environmental and economic sustainability, companies going through the changes also streamline their activities, automatize unnecessary items and employ environment-sensitive technologies. Digital transformation assists in sustainability reporting, which generates real-time figures on the usage of energy, resource use, and social performance (Wenting 2024). It also enhances its strength and flexibility that ensures competitiveness in the future. The business models are formed by digitization; this enables the organizations to respond more appropriately to the demand of sustainability by the stakeholders and regulatory demands (Asif et al. 2024). Rather, the feeling of sustainability is integrated into the planning process of companies that grow more digital, which causes long-term gains to be ever-increasing and quantitative (Lescop et al. 2025). Digital transformation also accelerates sustainable growth since it provides organizations with new digital business models that reduce their environmental footprints and improve social value (Asif et al. 2024). Cloud computing and automation technologies, along with artificial intelligence, enhance the intelligence of the organization and offer quality distribution of resources. With the assistance of change, businesses embrace the provisions of the circular economy, reduce the quantity of carbon emissions, and enhance contact with stakeholders (Wenting 2024). Digitized systems will make possible sustained improvement which will allow

organizations to respond promptly to sustainability challenges and regulatory changes (Deeb and Aldehayyat 2024). Moreover, digital transformation will also improve transparency because it will provide the stakeholders with the accurate sustainability metrics. This skill will be used in the process of developing the brand image, making the brand more trusted, as well as the sustainability of the organization in the long term, which reinforces the direct linkage between the digital transformation and sustainable development.

H5: There is a positive and significant relationship between digital transformation and sustainable growth

The literature identifies the digital leadership, cloud accounting, and digital transformation as connected factors that contribute to sustainable organizational growth. Digital leadership sets the strategic direction, cloud accounting sets the technological ability, and digital transformation is a locomotive that transforms such elements into performance outputs. The constructs have different functions leading to sustainability but the synthesis of the findings in integrating the constructs brings in a bigger insight into the growth of organizations in the long term. The hypotheses that are proposed rest on the theoretical relationships that exist and the implications that may arise on the importance of integrating the leadership behavior and technology adoption with the processes of transformation with regard to achieving sustainable growth in the world that has increasingly become more digitalized.

Methodology

Research Design

The research design of this study is quantitative, cross-sectional research design to investigate the links between digital leadership, cloud accounting, digital transformation, and sustainable growth. Since the main purpose is to establish theoretically postulated relationships and determine the strength of both direct and mediating effects, the choice of the type of analysis is the Partial Least Squares Structural Equation Modeling (PLS-SEM) (Deeb and Aldehayyat 2024). PLS-SEM is very appropriate in predictive models, complicated structure pathways and research that emphasizes on explanatory variance. The method is able to effectively gauge the mediation effects and can also allow diverse kinds of indicators (Mart et al. 2023). This design will guarantee that there is a rigorous testing of hypothesized model and supply of empirical data on the impacts of digital leadership and cloud accounting on sustainable growth via digital transformation.

Population and Sample

The intended audience is managers, supervisors, senior managers, and executives in the field of SMEs because these people are the ones who deal with specifically the matter of digital tools, financial systems, and transformation initiatives (Mahmood, Ditta, et al. 2024). The purposive sampling technique was applied to make sure that only the respondents with relevant managerial experience took part in the survey. The study employed 400 respondents as the final sample in order to increase the statistical power and address the needs of PLS-SEM which is more than the generally accepted sample levels. The sample was diversified by age category, education, levels and types of managers, as well as the industry to maintain diversity. Demographic items were also incorporated to incorporate the aspects of gender, age, education, job position, industry category, experience, and firm size, so that the true picture of SME management would be secured.

Instrument Development

Data collection was done by means of a structured and closed-ended questionnaire. Each of the constructs, namely, digital leadership, cloud accounting, and digital transformation as well as sustainable growth, were measured across multiple items which were modified based on the known scales and were delivered in a neutral format without references to the initial sources (Quang et al. 2025). Digital leadership was made of five questions that expressed the vision, digital support, communication, the culture of innovation, and leadership encouragement. Cloud accounting had seven items that comprised accuracy, speed of reporting, accessibility, cost reduction, efficiency and

integrated system. The digital transformation was measured in relation to five items that were digital integration, improvement, decision support, innovation and system interoperability (Carbonara and Basile 2025). The measurement of sustainable growth was conducted under the five items that are associated with financial stability, long-term performance, responsible use of resources, and balanced economic, social, and environmental performance. Everything was measured with a 5-point Likert scale, where strongly disagree can be taken as the lowest answer to strongly agree as the highest answer.

Data Collection Procedure

The information was obtained by use of an online survey, which was sent by emails, professional groups, LinkedIn, and organizational contacts networks. The respondents were told about the role the study was going to play and that they would be assured of their voluntary nature (Mollah et al. 2024). There were no known personal data that were gathered to ensure confidentiality. A four week data collection period provided opportunity to collect enough data in terms of response collection and reminders. After receiving surveys, the response was screened and those who had not filled the surveys were eliminated prior to analysis. Out of the total obtained responses, 400 valid questionnaires were to be further used in PLS-SEM.

Data Analysis Technique: PLS-SEM

SmartPLS software was used to conduct PLS-SEM. The analysis was divided into two big steps, which were measurement model assessment and structural model assessment.

Measurement Model Assessment

The reliability and validity were measure using a number of indicators.

- Internal consistency reliability was validated based on the Cronbach's Alpha and Composite Reliability with all the values being above the minimum value of 0.70.
- Factor loading of above 0.70 and extracting Average Variance (AVE) of above 0.50 confirmed convergent validity.
- The cross-loadings and the Fornell-Larcker criterion were used to evaluate discriminant validity which proved that the constructs were statistically different (Truc and Vo 2024).

These measures ensured that the tool was a valid reliable instrument.

3.5.2 Structural Model Assessment

The structural paths were studied after the validation of the measurement model. To compute t-values and p-values 5,000 samples were bootstrapped. Most of the direct and mediating relationships were proved to be important since they exhibited path coefficients. The predictive accuracy was measured based on the R-square values, and it indicated that the predictive quantities of digital transformation and sustainable growth were moderately indicated using the predictors (Munir et al. 2025). SRMR, which is a model fit indicator, supported an acceptable amount of the model fit. The analysis has clearly given the insights on the role of digital leadership and cloud accounting in ensuring sustainable growth both directly and indirectly.

3.6 Ethical Considerations

The rules of ethical conduct were followed closely. The participants were guaranteed of confidentiality, free participation of their own free will, and the option of withdrawing any time they wished. No personal or identifiable information was gathered, thus the study was done with privacy and protection of data.

Results and Analysis

Demographic Profile of Respondents (N = 400)

The demographic data of respondents is a clear expression of the demographic aspects of managerial features in SMEs.

Table 1 Demographic Analysis

No.	Demographic Variable	Category	Frequency (n)	Percentage (%)
1	**Gender**	Male	228	57.0%
		Female	162	40.5%
		Prefer Not to Say	10	2.5%
	Total		**400**	**100%**

2	**Age Group**	20–29	110	27.5%
		30–39	152	38.0%
		40–49	96	24.0%
		50+	42	10.5%
	Total		**400**	**100%**
3	**Education Level**	Bachelor	98	24.5%
		Master	176	44.0%
		M.Phil	96	24.0%
		PhD	30	7.5%
	Total		**400**	**100%**
4	**Job Position**	Supervisor	92	23.0%
		Middle Manager	148	37.0%
		Senior Manager	108	27.0%
		Executive	52	13.0%
	Total		**400**	**100%**
5	**Industry Type**	Manufacturing	88	22.0%
		Services	144	36.0%
		Retail	64	16.0%
		Technology	72	18.0%
		Other	32	8.0%
	Total		**400**	**100%**
6	**Managerial Experience**	Less than 3 years	84	21.0%
		3–5 years	122	30.5%
		6–10 years	128	32.0%
		More than 10 years	66	16.5%
	Total		**400**	**100%**
7	**Firm Size**	Less than 20 employees	70	17.5%
		20–50 employees	116	29.0%
		51–100 employees	124	31.0%
		101–250 employees	90	22.5%
	Total		**400**	**100%**

The gender distribution shows a high level of participation of both the male and female managers, and thus, there is balanced representation. The age pyramid of the respondents is mostly made up of individuals associated with one age group of 30-39 years and another group of 20-29 years, and 40-49 years, which indicates that the employees of the position are mostly young, mid-career, and managers who are generally more receptive to digital technologies and innovation. Through the education levels, it is evident that most of the respondents have a Master degree with some having a very high number of those with Bachelor and M.Phil degrees implying that most of them are academically competent to disseminate and carry out digital initiatives in their organizations. The highest number of people are middle and senior managers in terms of job roles, which implies that answers are gathered among the people who have a significant decision-making power. The manufacturing, services, retail, or technology industry distribution depicts varied involvement of digital leadership, cloud accounting, and digital transformation industries, which emphasize the broad applicability of digital leadership, cloud accounting, and digital transformation (Aljawarneh et al. 2025). The managerial experience is equally distributed with majority of the respondents having 3-10 years'

experience which indicates that they have been exposed to the processes in organizations practically. The sizes of the firms that were studies are on both ends of the SME spectrum, and this reinforces the external validity of the results. In general, the demographic scales confirm the appropriateness of the sample when analyzing the organization phenomena that can be explained by digital transformation.

Table 2 Outer Loadings

Item	Cloud Accounting	Digital Leadership	Digital Transformation	Sustainable Growth
CA1	0.760	–	–	–
CA2	0.724	–	–	–
CA3	0.840	–	–	–
CA4	0.829	–	–	–
CA5	0.911	–	–	–
CA6	0.824	–	–	–
CA7	0.875	–	–	–
DL1	–	0.891	–	–
DL2	–	0.848	–	–
DL3	–	0.825	–	–
DL4	–	0.879	–	–
DL5	–	0.886	–	–
DT1	–	–	0.904	–
DT2	–	–	0.899	–
DT3	–	–	0.865	–
DT4	–	–	0.845	–
DT5	–	–	0.800	–
SG1	–	–	–	0.814
SG2	–	–	–	0.821
SG3	–	–	–	0.796
SG4	–	–	–	0.772
SG5	–	–	–	0.790

The factor loading table indicates that all the measurement items used to measure the constructs are highly reliable and valid, which confirms that the indicators are fitting to measure the variables they are supposed to measure. In case of cloud accounting, all the seven items have a high loading on their construct with the ranges of 0.724 to 0.911. All these heavy loadings show that the respondents always equate the concept of cloud accounting with accuracy, accessibility, efficiency, and reduction of costs using a cloud-based system (Mahmood, Khakwani, et al. 2024). On the same note, the loadings of the digital leadership items are likewise quite high (between 0.825 and 0.891) indicating that indicators have worked well in gauging the aspect of leadership including digital vision, support innovation and communicating digital strategies. The exceptional loadings of the digital transformation items also understand that between 0.800 and 0.904 indicate that the respondents are clear on the identification of digital integration, process, decision, and technological innovation to be defining items of transformation. The sustainable growth items have good loadings of 0.772 to 0.821, which proves that these aspects are good predictors of sustainable long-term development in economic, social, and environmental aspects (Chen et al. 2024). The overall high factor loadings in constructs show high convergent validity, meaning that the constructs are all measured correctly. This gives confidence

regarding the measurement model and provides good ground on conducting additional structural analysis under PLS-SEM framework.

Construct Reliability and Validity

Table construct reliability and validity shows that all four constructs employed in the research show great internal consistency and convergent validity.

Table 3 Reliability and Validity

Construct	Cronbach's Alpha	Composite Reliability (rho_A)	Composite Reliability (rho_C)	Average Variance Extracted (AVE)
Cloud Accounting	0.921	0.931	0.937	0.681
Digital Leadership	0.917	0.921	0.937	0.750
Digital Transformation	0.914	0.916	0.936	0.745
Sustainable Growth	0.859	0.865	0.898	0.638

Cronbach's Alpha values of cloud accounting (0.921), digital leadership (0.917) and digital transformation (0.914) are significantly greater than the acceptable level of 0.70 which is excellent reliability. The score of sustainable growth is also reliable with a score of 0.859 which indicates that the items always measure the construct (Ishaq 2024). The composite reliability coefficients (rhoA and rho C) of all the constructs are between 0.865 and 0.937, which again indicates the strength and internal consistency of all the measurements scales. Besides, all constructs meet the minimum AVE calculated to be more than 0.50 and this indicates high convergent validity. The high values of the AVE of cloud accounting, digital leadership, and digital transformation are 0.68 and above, which means that a significant amount of variance is explained by its indicators (Ullah et al. 2025). This is also evidence that sustainable growth is represented by an acceptable AVE level at 0.638, which indicates that its underlying concept was represented adequately. All in all, these reliability and validity data indicate that every construct is statistically sound, which allows declaring the measurement model reliable and valid (Akhtar et al. 2025). The foundation is stronger, and later structural model analysis in PLS-SEM can be read and understood with a lot of confidence.

Discriminant Validity

Fornell-Larcker Criterion

The table of Fornell-Larcker discriminant validity indicates that the constructs in the model are discrete and that they have a different measure on the general conceptual model.

Table 7 Fornell-Larcker Criterion

Construct	Cloud Accounting	Digital Leadership	Digital Transformation	Sustainable Growth
Cloud Accounting	**0.825**			
Digital Leadership	0.575	**0.866**		
Digital Transformation	0.690	0.618	**0.863**	
Sustainable Growth	0.558	0.683	0.583	**0.799**

The fact that the square root of the AVE (depicted on the diagonal) is larger than the construct-to-construct correlations (depicted off-diagonal) confirms the existence of discriminant validity. The diagonal value of cloud accounting is 0.825 that is greater than that with digital leadership (0.575), digital transformation (0.690), and sustainable growth (0.558), which proves the uniqueness of cloud accounting (Nasir et al. 2022). Digital leadership demonstrates also high level of discriminant validity where it has the largest diagonal of 0.866 than its relationship

with the rest of the constructs (Kavre 2025). Digital transformation proves to be as valid, and the diagonal value is 0.863, which is greater than the correlation with cloud accounting and digital leadership. Sustainable growth, having a diagonal of 0.799 is another variable that satisfies the criterion of discriminant validity since it has a higher correlation than any other corresponding correlation (Nasir et al. 2022). The overall outcomes of these results assure that no construct fails to be too similar to another one and that each of the variables represents an independent underlying concept. This confirms the structural soundness of the research model and the presence of the constructs used is different enough to allow PLS-SEM analysis.

R-Square and Adjusted R-Square

The result of the R-square used to determine the effectiveness of cloud accounting and digital leadership in predicting digital transformation is 0.549, that is, 54.9% of the change in the digital transformation is explained by the predictors.

Table 5 R-Square and Adjusted R-Square

Construct	R-Square	R-Square Adjusted
Digital Transformation	0.549	0.540
Sustainable Growth	0.521	0.506

The adjusted R-squared, 0.540, indicates a minimal decrease in the value after considering model complexity, which proves that it has a good and consistent model fit. Sustainable growth has an R-square of 0.521 implying that 52.1 percent of its variance is captured by digital leadership, cloud accounting and digital transformation (Chen et al. 2024). Similar robustness is denoted by the adjusted R-squared of 0.506. They mean that there is moderate to substantial predictive power (explanatory power) of the predictors (together acting) on the constructs (Ishaq 2024). The value of 0.50 is regarded to have some meaning in the social science research in terms of r-square, indicating that a given model details a large percentage of the underlying relationships (Ullah et al. 2025). The findings prove that the model stands statistically and can explain important outcome variables.

Model Fit Summary

Both the saturated and estimated model have a SRMR of 0.075, which is less than the generally accepted value of 0.08, suggesting a good fit to the model as well as having a small difference between the predicted correlation and the observed one.

Table 6 Model Fit Summary

Model Fit Indicator	Saturated Model	Estimated Model
SRMR	0.075	0.075
d_ULS	1.410	1.410
d_G	0.982	0.982
Chi-square	487.741	487.741
NFI	0.752	0.752

The d ULS and d G are both the same in both models since they indicate consistency in the measures of discrepancy and give indication of consistency of the model estimation. Chi-square value of 487.741 is normal in PLS-SEM, whereby chi-square is not supposed to be non-significant in regression; it gives the scheme of the model internality consistency (Akhtar et al. 2025). The Normed Fit Index (NFI) is 0.752; this is a satisfactory value in terms of comparative model fit (0.70). Together, all these indicators prove the measurement and structural models do a good job, as they represent the relationships between

the constructs in the most suitable and accurate way.

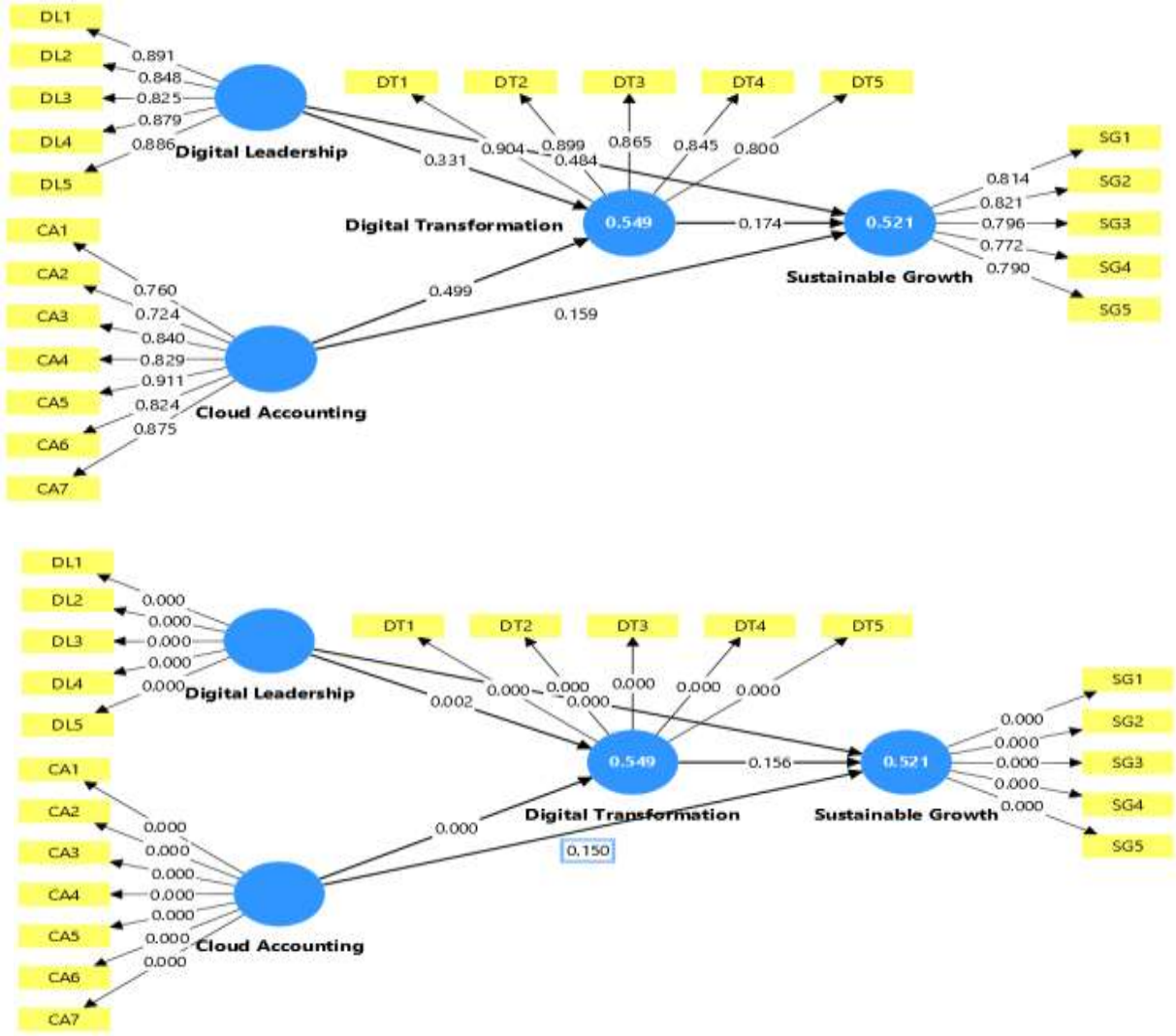

Fig 1 PLS SEM Model

The findings of the structural model will offer comprehensive data on the proposed hypothesis of the connection between cloud accounting, digital leadership, and digital transformation with sustainable growth.

Table 7 Hypothesis Testing

Relationship	Estimate	Standard Error	t-value	p-value
Cloud Accounting → Digital Transformation	0.499	0.503	0.105	0.000
Cloud Accounting → Sustainable Growth	0.246	0.255	0.096	0.010
Digital Leadership → Digital Transformation	0.331	0.331	0.105	0.002
Digital Leadership → Sustainable Growth	0.542	0.536	0.085	0.000
Digital Transformation → Sustainable Growth	0.174	0.163	1.417	0.156

In H1, digital leadership has a significant effect on sustainable growth with a path coefficient of 0.542 and a very significant p-value of 0.000. This finding means that digitally capable organizations

have a higher probability of realizing better results of sustainability implying that leadership takes a key role in enhancing long-term performance (Chen et al. 2024).

The, relation of cloud accounting and sustainable growth is also supported in case of H2 with coefficient of 0.246 and p value of 0.010. Even though the size of the effect is moderate, the value of significant doses is that cloud based financial systems have a positive impact on sustainability, probably by enhancing effectiveness, precision, and optimization of resources (Mollah et al. 2024).

In H3, digital leadership has a significant positive effect on a digital transformation with the coefficient value of 0.331 and the p-value of 0.002. This confirms the assumption that the successful digital leaders will play a crucial role in organizational change especially in promoting innovations, leading transformation to technology and facilitating the advancement of digital integration (Mart et al. 2023).

In the case of H4, cloud accounting has a significant and positive impact on the digital transformation, the coefficient of which is 0.499, and the p-value is equal to 0.000. This suggests that cloud-based financial systems have a significant part to play in facilitating a wider-ranging digital transformation initiative and offering real-time data, automation, and the ability to integrate the system (Deeb and Aldehayyat 2024).

Lastly, H5 is not proven because the correlation between digital transformation and sustainable growth is insignificant (coefficient = 0.174, p = 0.156). This finding indicates that although digital transformation enhances internal operations, it might not inevitably turn into sustainable growth in the absence of cross-supportive leadership or technology-powered strategies. Altogether, the results provide leadership and cloud accounting as the key forces of sustainability, but the impact of digital transformation is less direct.

Conclusion

This study offers valuable information about the influence of digital leadership and cloud accounting on the sustainable development of SMEs, as digital transformation is a component of this process that is highly important, yet partially justified. The results obtained in the use of the structural model prove the importance of the digital leadership and the cloud accounting in the context of sustainable growth, as they are the strategic capabilities of the modern business world. Digital leadership was found to be the most effective forecast, which supported the concept of the leaders who are visionary and who advocate the principles of digital culture, innovation, and the use of technology to organizational sustainability. The use of cloud accounting also revealed a considerable positive impact, which confirms the idea that digital financial systems increase transparency, accuracy, and efficiency, which in turn raises the possibility of long-term growth. Both constructs also exhibited a high degree of impact on digital transformation, and it can be implied that the significance of leadership and digital financial infrastructure is vital in the direction of modernization of the organizations. Nevertheless, an essential implication of the digital transformation did not show a direct connection between its influence on sustainable growth, which can imply that a sufficient transformation can itself do not bring the advantages of sustainable growth without a close governance of the leadership approach as well as certain technology-based practices. On balance, the research leads to the comprehension of the interaction between leadership and digital systems to build sustainable results that will formational equip SMEs trying to overcome digital shifts.

With the help of these findings, there are a number of practical recommendations which can be given. To begin with, the organizations must invest in the possibility of enhancing the digital leadership capacities through investment in the leadership development programs which concentrate on the digital skills, strategic thinking and change management. By promoting leaders to be champions of digital initiatives, it will be possible to create more open culture to innovation and change. Second, SMEs must adopt cloud accounting system faster because it

offers them instant benefits in their operations that would help in achieving their sustainability goals. This involves the adoption of integrated cloud solutions that increase the accessibility of data, automation as well as real-time decision-making. Third, companies need to create system-based digital transformation plans that tie technological adoption and long-term sustainability objectives. Instead of concentrating on the technological improvements, companies must connect the activities of transformation to quantitative environmental, social, and economic improvements. Also, interdepartmental cooperation must be enhanced to make sure that the digital systems are successfully integrated and matched with organizational activities.

This research can be extended in the future by investigating more mediators or moderators that can enhance the connection between digital transformation and sustainable growth. Such variables like organizational culture, environmental orientation, maturity of digital capability and innovation performance can be more helpful in terms of the understanding of how transformation will lead to result of sustainability. The researchers might also use longitudinal designs that could study the way digital initiatives can change throughout the years and whether their effect on sustainability is more visible in the long term. The findings would also be improved the same comparative study across industries or nations. Moreover, qualitative research could present more insightful information on the experience of leaders and employees who undertake digital transformation endeavors, which could be added to quantitative findings. Since digital technologies have not yet reached maturity and as new ones are created, such as artificial intelligence, blockchain, and predictive analytics, the further investigation needs to integrate such emerging technologies in order to comprehend their contribution to sustainable development. Altogether, the increase in the scope of the investigation will help to gain a more in-depth insight into the digital ecosystems and long-term consequences of their development on the sustainability of an organization.

REFERENCES

Akhtar, Sadaf, Muhammad Iatzaz, and Ul Hassan. 2025. "Digital Transformation and SME Innovation : A Comprehensive Analysis of Mediating and Moderating Effects." *Journal of the Knowledge Economy* 1153–82. doi:10.1007/s13132-024-02054-0.

Aljawarneh, Nader Mohammad, Yazan Abu Huson, Farouq Ahmad Faleh, Khaled Abdel, Kader Alomari, and Feras Almarashdi. 2025. "IT Audit Quality and Digital Business Performance : The Moderating Role of Digital Leadership." *EDPACS* 00(00):1–11. doi:10.1080/07366981.2025.2564762.

Anwar, Hassan, Talha Anwar, and Gohar Mahmood. 2023. "Nourishing the Future: AI-Driven Optimization of Farm-to-Consumer Food Supply Chain for Enhanced Business Performance." *Innovative Computing Review* 3(2):14–29.

Asif, Muhammad, Liu Yang, and Muhammad Hashim. 2024. "The Role of Digital Transformation , Corporate Culture , and Leadership in Enhancing Corporate Sustainable Performance in the Manufacturing Sector of China."

Carbonara, Nunzia, and Luigi Jesus Basile. 2025. "Organization Performance in Smart Working Settings : The Mediating Role." 33(11):4043–66. doi:10.1108/IJOA-10-2024-4883.

Chen, Aixia, Ling Li, and Waseem Shahid. 2024. "Heliyon Digital Transformation as the Driving Force for Sustainable Business Performance : A Moderated Mediation Model of Market-Driven Business Model Innovation and Digital Leadership Capabilities." *Heliyon* 10(8):e29509. doi:10.1016/j.heliyon.2024.e29509.

Deeb, Heba, and Jehad Aldehayyat. 2024. "The Effect of Digital Leadership on SMEs ' Digital Transformation : The." doi:10.1108/JEAS-11-2024-0462.

Ishaq, Fizza. 2024. "Examining How Digital Transformation and Responsible Leadership Affect Green Innovation in SMEs : A." doi:10.1108/SL-12-2024-0145.

Kavre, Mahesh S. 2025. "Analysing the Role of Cloud Manufacturing for Achieving Sustainable Business Performance in the Era of Digital Economy." doi:10.1108/IJOA-04-2025-5424.

Lescop, Denis, Christian Keen, Mikel Alayo, Valeriano Sanchez-famoso, Denis Lescop, Christian Keen, Mikel Alayo, and Valeriano Sanchez-famoso. 2025. "Translating Sustainability into Performance : The Role of Digital Transformation and CEO Gender in Small and Medium-Sized Hotels." *Journal of Sustainable Tourism* 0(0):1–24. doi:10.1080/09669582.2025.2591127.

Mahmood, Gohar, Allah Ditta, Muhammad Ramzan, and Zahid Abbas. 2024. "Role of Artificial Intelligence (AI) Adoption and Digital Transformation in Enhancing Sustainable Business Performance: The Mediating Effect of Green Product Innovation." *Journal of Accounting and Finance in Emerging Economies* 10(4):519–32.

Mahmood, Gohar, Maria Shams Khakwani, Anam Zafar, and Zahid Abbas. 2024. "Impact of Digital Transformation and Ai through Fostering Digital Leadership Excellence: A Focus on Sustainable Organizational Performance." *Journal of Accounting and Finance in Emerging Economies* 10(1):33–48.

Mart, Rafael, Alberto Ochoa-brust, Solange Rivera, G. F. Vanessa, Rodolfo Ostos, H. Brito, A. F, and Luis J. Mena. 2023. "Role of Digital Transformation for Achieving Sustainability : Mediated Role of Stakeholders , Key Capabilities , and Technology."

Mollah, Alamgir, Mohammad Bin Amin, Gouranga Chandra Debnath, Sajjad Hosain, Atikur Rahaman, and Masuk Abdullah. 2024. "Nexus among Digital Leadership , Digital Transformation , and Digital Innovation for Sustainable Financial Performance : Revealing the Influence of Environmental Dynamism." 1–19.

Munir, Sadia, Shahid Mahmood, Gohar Mahmood, and Muhammad Adnan Ali. 2025. "LEADING FOR SUSTAINABILITY: A SYSTEMATIC REVIEW OF THE CONVERGENCE OF DIGITAL LEADERSHIP AND ECO-DESIGN IN SDGS." *Qualitative Research Journal for Social Studies*.

Nasir, Aemin, Nazlina Zakaria, and Rushami Zien Yusoff. 2022. "Cogent Business & Management The Influence of Transformational Leadership on Organizational Sustainability in the Context of Industry 4 . 0 : Mediating Role of Innovative Performance The Influence of Transformational Leadership on Organizational Sustainability in the Context of Industry 4 . 0 : Mediating Role of Innovative." *Cogent Business & Management* 9(1):0–31. doi:10.1080/23311975.2022.2105575.

Quang, Pham, Huy Vu, and Kien Phuc. 2025. "Pathways of SME Globalization : Unveiling the Role of Niche Market Leadership and Intelligent Cloud - Based Accounting Information System Goodness of Fit Index." *International Journal of Information Technology* 17(5):2847–64. doi:10.1007/s41870-025-02453-9.

Rahman, Arafat. 2025. "Accounting 4 . 0 : A Mediating – Moderating Model of Tech , Workforce , and Performance." doi:10.1108/JAOC-02-2025-0038.

Truc, Dao, and Thi Vo. 2024. "Nexus among Cloud-Based Accounting , Employee Job Performance , Employee Digital Skills and Operational Performance : A Mediating – Moderating Model." 32(6):2321–47. doi:10.1108/MEDAR-02-2024-2362.

Ullah, Irfan, Bo Wang, and Muhammad Fiaz. 2025. "Digitalizing the Hospitality Industry : The Impact of Digital Transformational Leadership , Digital Culture and Taking Charge on Organizational Resilience." 37(11):3791–3813. doi:10.1108/IJCHM-11-2024-1768.

Van, Hien Vo. 2024. "Accounting Information Systems and Organizational Performance in the Cloud Computing Era : Evidence from SMEs." doi:10.1108/SAMPJ-01-2024-0044.

Wenting, Chang. 2024. "The Impact of Digital Transformation on Sustainability Performance of Enterprise in China : The Role of Competitive Advantage as a Mediator." 16(4):231–51.