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The Strategic Importance of Intellectual Capital and Cloud Accounting: The Interactive Role in Enhancing the Financial Performance

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ABSTRACT

This study investigated the impact of cloud accounting on financial performance, specifically examining the moderating role of intellectual capital. The research was conducted on a sample of 42 Jordanian industrial companies listed on the Amman Stock Exchange. Data was collected from financial managers, heads of accounting departments, and accountants using a specially designed questionnaire. A total of 164 questionnaires were distributed. The Partial Least Squares Structural Equation Modeling (PLS-SEM) method, using SmartPLS software, was employed for data analysis and hypothesis testing. The findings revealed a significant impact of cloud accounting on the financial performance of Jordanian industrial companies. Furthermore, the study identified a significant moderating role for intellectual capital (both as a comprehensive concept and through its components) in the relationship between cloud accounting use and financial performance. Specifically, both human capital and structural capital were found to play a positive and statistically significant moderating role, indicating that higher levels of these two components enhance and strengthen the positive impact of cloud accounting on financial performance. In contrast, relational capital did not demonstrate a moderating role in this relationship. The unexpected complexity regarding relational capital suggests a need for careful management of the interaction between technology and external relationships. The study recommends an integrated approach that emphasizes developing intellectual capital (especially human and structural) in conjunction with investments in cloud accounting.

Keywords: Intellectual Capital, Cloud Accounting, Financial Performance, Jordan.

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1. Introduction

Over the past two decades, the industrial sector in the Hashemite Kingdom of Jordan has undergone substantial transformation, driven by the sweeping wave of digitalization and technological innovation that has reshaped global economic systems. These changes have significantly altered the operational environment of industrial enterprises, compelling Jordanian companies to adopt advanced technological strategies to maintain competitiveness and ensure long-term sustainability. In this evolving context, the modernization of traditional accounting systems has become an urgent necessity, as advanced accounting technologies are now pivotal in supporting industrial activities, enhancing financial efficiency, and delivering accurate and reliable financial data that facilitate effective organizational decision-making (Aboelmaged, 2018, Jaradat et al., 2025).

Among the most prominent technological developments is cloud accounting, which has emerged as a vital tool in the digital transformation of accounting practices. Prior research (e.g., Alzoubi, 2022; Goundar, 2019) has demonstrated that the adoption of cloud-based accounting systems significantly improves the accuracy of financial reporting, simplifies accounting operations, and reduces operational costs, ultimately enhancing the financial performance of industrial organizations. These systems provide real-time access to financial data from any location, enable advanced financial analysis, and strengthen governance and internal control mechanisms.

However, the enhancement of financial performance through technological adoption is not solely contingent upon the implementation of modern tools. It also critically depends on an organization's ability to leverage intangible assets, notably intellectual capital. While technology enables capability, its effective utilization hinges on a supportive organizational ecosystem characterized by skilled human resources, robust structural frameworks, and strong relational networks. Emerging literature highlights the essential role of intellectual capital development in maximizing the benefits of digital technologies like cloud accounting. Human capital improves employees' capacity to utilize digital tools effectively; structural capital supports the integration of technology within organizational processes; and relational capital fosters collaboration and innovation through external partnerships (Al-Htaybat et al., 2018).

Motivated by these insights, this study aims to investigate the direct impact of cloud accounting on financial performance in the Jordanian industrial sector and to explore the moderating role of intellectual capital, including its three key components—human, structural, and relational capital—on this relationship. By doing so, the study seeks to make both theoretical and practical contributions, emphasizing the organizational prerequisites for optimizing cloud accounting benefits and advancing financial performance in Jordan's industrial environment.

2. Study Objectives

This study seeks to achieve the following objectives:

- 1.To examine the impact of cloud accounting adoption on the financial performance of Jordanian industrial companies.
- 2.To explore the moderating effect of intellectual capital on the relationship between cloud accounting use and financial performance.
- 3.To assess the specific moderating role of human capital within this relationship.
- 4.To evaluate the moderating role of structural capital in shaping the relationship between cloud accounting use and financial performance.
- 5.To determine whether relational capital significantly moderates the impact of cloud accounting on financial performance.

3. Problem and Research Questions

Despite the increasing adoption of cloud accounting technologies in the industrial sector, empirical evidence on their direct impact on financial performance remains inconclusive. While some studies affirm the value-added benefits of cloud systems in enhancing operational efficiency and financial accuracy, others highlight inconsistent outcomes, suggesting that additional organizational factors may influence this relationship. One such factor is intellectual capital, which comprises a firm's human, structural, and relational assets.

The problem this study addresses lies in the insufficient understanding of how intellectual capital may moderate the effectiveness of cloud accounting in driving financial performance, especially within the context of Jordan's industrial sector. While the benefits of technological adoption are widely recognized, the role of intangible organizational resources in enhancing or limiting these benefits has not been thoroughly examined. This knowledge gap necessitates empirical investigation into how intellectual capital interacts with cloud accounting systems to influence financial performance outcomes.

Based on this problem, the study seeks to answer the following research questions:

- 1.Does the use of cloud accounting have a statistically significant impact on financial performance in Jordanian industrial companies?
- 2.Does intellectual capital moderate the relationship between cloud accounting use and financial performance?
 - 2.1. Does human capital moderate the relationship between cloud accounting use and financial performance?
 - 2.2. Does structural capital moderate the relationship between cloud accounting use and financial performance?
 - 2.3. Does relational capital moderate the relationship between cloud accounting use and financial performance?

4. Theoretical Framework

4.1. Financial Performance

Financial performance is considered one of the main components of companies, providing an integrated system of accurate and reliable information to compare the actual performance of company activities through specific indicators to identify deviations from previously set goals. Financial performance is a tool for personal judgment through moral and ethical values, behavior, and standards, and a tool for objective judgment of company efficiency and the level of its activities and the extent to which goals are effectively achieved through measurable material aspects and figures with specific criteria (Kara et al., 2024 ,Jaradat et al., 2025). Performance in general, and financial performance in particular, has attracted the attention of researchers from various intellectual perspectives. Financial performance is primarily used to measure the performance of banks because it is characterized by continuity and stability and contributes to guiding banks towards the best and correct path (Wang et al., 2025).

4.1.1. Definition of Financial Performance Financial performance is a broad concept that expresses an organization's method of investing its available resources according to criteria and considerations related to its objectives, in light of a set of internal and external variables with which the organization interacts in its pursuit of efficiency and effectiveness to ensure its survival and continuity. Financial performance of an economic institution is the specific field of its success; it is used as a fundamental approach not only to achieve the financial objectives of the institution but also to extend to general strategic objectives (Twayyir et al., 2022).

4.1.2. Importance of Financial Performance The importance of financial performance in general has emerged through the indications and indicators it provides that reflect the financial position of the company's performance and its ability to achieve its goals. Financial performance evaluates company performance from several angles, in a way that serves internal

and external data users who have financial interests in the company to identify strengths and weaknesses in the company, and to utilize the data provided by financial performance to make financial decisions for users. The importance of financial performance also stems, in particular, from the process of monitoring company operations, examining its behavior, monitoring its conditions, evaluating its performance levels and effectiveness, and directing performance towards the correct and desired direction by identifying obstacles, clarifying their causes, proposing corrective actions, and rationalizing the general uses of companies (Ghosh et al., 2025).

Financial performance works to achieve objectives by serving all internal and external parties, as it helps to monitor and understand the activity and nature of banks, as well as to monitor the surrounding economic and financial conditions, and to determine the impact of financial performance tools such as profitability, liquidity, debt, and stock price. It helps in the process of analysis, comparison, and interpretation of financial data and understanding the interaction between data to make appropriate decisions for the banks. It also helps in revealing some administrative and organizational problems, as the analytical study of financial performance results ensures the detection of some organizational and administrative flaws. It helps in evaluating the validity of employee affairs systems and the soundness and success of methods used in selecting and appointing employees (Ghosh et al., 2025).

4.1.3. Financial Performance Indicators

1. **Achieving Stable Profits** Achieving stable and regular profits is a strong indicator of a company's financial health and operational sustainability. Stability in profits indicates the effectiveness of the strategies followed by companies that often enjoy stable profits, which are more capable of long-term planning. Recent research increasingly focuses on the relationship between profit stability, the quality of financial reports, and governance practices. For example, studies examining the impact of profit fluctuations on the cost of capital under modern IFRS standards (Khalil et al., 2023) or those linking profit stability to corporate credit ratings in emerging markets (Sharma & Singh, 2024) emphasize the importance of this dimension in risk assessment and investment attraction. Feasibility studies and long-term financial analysis often focus on analyzing profit trends as evidence of a company's financial health and operational sustainability.

2. **Return on Assets Ratio (ROA)** The Return on Assets (ROA) ratio is a crucial measure for evaluating the efficiency of management in utilizing the company's total assets. A high ROA ratio indicates that the company is utilizing its resources effectively and efficiently to achieve profitability. Recent studies continue to use ROA as a key performance measure when examining the impact of contemporary factors. For instance, the "impact of digital transformation on return on assets in the service sector" (Chen & Lee, 2024) or the "relationship between investment in environmental, social, and corporate governance (ESG) practices and return on assets" (Müller & Wagner, 2024) are being investigated, which demonstrates the continued validity and importance of this indicator in measuring overall performance. As observed in previous studies, return on assets is frequently used as a dependent variable to measure financial performance.

3. **Return on Equity Ratio (ROE)** The Return on Equity (ROE) ratio focuses on measuring how effectively a company uses the funds invested by its owners. This ratio is of utmost importance to investors, and a high ROE means that the company is generating good profits compared to the size of shareholders' capital. Contemporary research continues to analyze the determinants of ROE and its impact on investment decisions. Recent studies can be found addressing the role of innovation and product development in enhancing return on equity in technology companies (Zhang & Wang, 2023) or a comparative analysis of the impact of different ownership structures (family, institutional, governmental) (Rodriguez & Garcia, 2024). However, it is important to analyze the components of ROE, and many studies have used the ROE ratio as a primary indicator of financial performance.

4. **Positive Cash Flows** Generating positive cash flows, especially from operating activities, is vital for the continuity and growth of any company. A company's ability to continuously generate sufficient cash from its core operations indicates the health of its business model and its ability to convert profits into liquidity. Recent literature in finance and financial management emphasizes the importance of cash flows, not only for survival but as a strategic tool. Recent research examines the impact of working capital management quality on generating operating cash flows (Nguyen & Pham, 2023)

or the use of free cash flow metrics in company valuation and merger and acquisition decisions (Davis & Miller, 2024). A company that generates profits but has negative cash flows may face difficulties. Therefore, analyzing the cash flow statement is an integral part of evaluating its true financial performance.

5. Achieving Competitive Profit Margins Evaluating financial performance is not limited to the absolute amount of profits, but extends to analyzing profit margins and achieving profit margins that exceed the industry average or major competitors. This indicates a strong competitive advantage. Recent research in strategic management and marketing addresses factors that enable companies to achieve sustainable profit margins in increasingly competitive environments. For example, studies can be found on the impact of differentiation strategies and strong branding on profit margins in the consumer goods sector (Johnson & Smith, 2023) or the relationship between market competition intensity and the ability to maintain high profit margins across different industries (Baum & Korn, 2024). Strong margins provide the company with a "safety cushion," and maintaining competitive profit margins is an important indicator of pricing power, operational efficiency, and long-term profit sustainability.

4.2. Cloud Accounting

The significant development in accounting science, especially technological advancement and the emergence of cloud accounting, has made it necessary to give it more attention, due to its great impact on the development of accounting science and related systems, including internal control, which helps improve the effectiveness and efficiency of internal control in these sectors and the optimal utilization of this technology to improve their financial performance. Accounting software is gaining popularity over time, leading major accounting firms and accounting organizations, including the American Institute of Certified Public Accountants (AICPA), to call for the need to increase attention to cloud technology by providing a wide range of cloud-based services and guidance, benefiting the accounting profession. This is achieved by adopting a systematic approach to risk assessment, including developing effective policies for using cloud applications that enable companies to test the effectiveness of this new technology and increase operational efficiency in their accounting operations (Vo Van et al., 2025).

4.2.1. Definition of Cloud Accounting Cloud accounting refers to performing core accounting tasks, such as managing and balancing books, using software located in the cloud, often provided in a Software-as-a-Service (SaaS) model. Employees or external accountants can manage accounts payable, accounts receivable, the general ledger, and much more within a dedicated application. Just like other cloud-based systems, cloud accounting software operates on the cloud provider's platform instead of a local hard drive or server. Users access the tools they need online, meaning employees or external accountants do not need to be in a specific location to understand the financial position of the organization (Sugahara et al., 2024). The term Cloud Accounting describes the use of information technology that relies on transferring accounting processing and computer storage space to what is called the cloud, which is a server device accessed via the Internet outside the user's premises. Thus, accounting programs are transformed from products to services (Vo Van et al., 2025).

It is noted that the relationship between cloud computing and cloud accounting is that cloud computing forms the basis from which cloud accounting originates, as it is considered the best innovation that achieves an advantage in light of the modern technological revolution. Traditional accounting software requires a high-specification computer, periodic maintenance contracts, and a specialized team to operate the programs. However, cloud accounting is suitable for all specialties and companies of all sizes (large, medium, small), does not require high costs, and its prices are suitable for everyone. It can be used and accessed from any device connected to the Internet (whether mobile, tablet, or computer) with high protection for all data and privacy maintenance (Atadoga et al., 2024).

4.2.3. Dimensions of Cloud Accounting

- Accounting Standardization: Standardizing accounting operations plays an important role in ensuring consistency and comparability among different companies. Standardization contributes to improving transparency and reducing risks resulting from variations in accounting procedures (Abidde, 2021).

- **Simplification of Accounting Operations:** Simplifying procedures contributes to reducing bureaucracy and unnecessary steps, which enhances work efficiency and reduces the likelihood of accounting errors (Madaleno & Barbuta-Misu, 2019).
- **Documentation of Accounting Operations:** Documenting financial operations is essential to ensure transparency and accountability, as it allows for easy tracking and verification of financial data, which contributes to improving internal control and compliance with legal standards (Elamer & Benyazid, 2018).

4.3. Intellectual Capital

Intellectual capital is considered one of the most valuable assets in the 21st century. It is a practical and scientific force that affects company operations and is one of the most important indicators reflecting the development of managerial thought. Intellectual capital also has a very important impact on generating investments and creating value, as intellectual assets are very important assets like other assets in the company (Zidan, 2024). This section will address topics related to intellectual capital, namely: the concept of intellectual capital and its importance, its components, its characteristics, and related approaches and measures.

4.3.1. Concept of Intellectual Capital The term intellectual capital has evolved in recent decades. It is considered one of the most important modern administrative and accounting topics, and the term intellectual capital emerged from its importance as an important resource like other important resources in companies. The term intellectual capital refers to the intangible and non-physical intellectual assets in companies. Many studies and literature have addressed the concept of intellectual capital. Jaradat and Al-Zeer (2020) defined it as a group of people who possess skills, competencies, and experiences that contribute to the progress and growth of companies, which may reflect on the development of societies in general. Al-Humairi et al. (2025) defined it as a group of intangible assets that help the company develop and grow its financial performance, which helps it achieve a competitive advantage. In the same context, Albertin (2019) defined it as the intellectual and mental energy of individuals that relies on discovering and strengthening skills and experiences for the benefit of the company's overall performance.

4.3.2. Components of Intellectual Capital

1. Human Capital This includes all knowledge, experiences, skills, and competencies possessed by human resources. A company benefits from human capital to achieve its goals and implement its practical plans in a suitable manner. The company must establish a method for dealing with and maintaining human capital due to its great importance in the success of the company's performance and the conduct of its operations. If the company maintains human expertise and competencies, these experiences and competencies will accumulate over time, and thus the company can convert these experiences and competencies into intellectual assets or proprietary assets (Kujansivu, 2018).

2. Structural Capital This is represented by organizational capabilities that keep pace with market requirements and meet its needs. In other words, it refers to the knowledge acquired and developed through processes, activities, and policies that represent all of the company's experiences. In another sense, structural capital refers to the organizational models, processes, and distribution channels that the company relies on to carry out its operations (Darbali and Zaytuni, 2013). In the same context, Pata (2025) indicated that structural capital refers to the company's organizational capabilities that can participate in, transfer, and enhance knowledge through structural intellectual assets represented in information systems, patents, copyrights, and trademarks, all of which represent the company's identity and market value.

3. Customer or Relational Capital This type of capital is represented by the company's relationships with external parties related to the company, such as customers, clients, suppliers, investors, distribution channels, and others. It refers to the cooperation between these parties and the company in various works to optimally allocate and utilize resources and thus provide the best services and products. On the other hand, customer (relational) capital expresses the knowledge resulting from the company's external relationships, as this knowledge helps the company how to deal with the external environment,

thereby ensuring and meeting market requirements and thus achieving the necessary success requirements that the company seeks (Zafar & Jafar, 2024).

5. Previous Studies

The study by Abu Daqqa and Atef (2025) aimed to analyze the impact of adopting cloud computing technology on the financial and non-financial performance of industrial companies, with a specific focus on a case study of an Egyptian company that began implementing cloud computing in early 2017. This research comes in light of the rapid global transformations in information and communication technology, among which cloud computing stands out as an essential tool for digital transformation and enhancing institutional performance efficiency. The study adopted the Extended Technology Acceptance Model (TAM2) as one of the leading explanatory frameworks to examine user behavior towards technology and analyze the impact of external and internal factors on adopting this technology. A case study methodology was used, employing qualitative and quantitative data collection tools. The results reveal that adopting cloud computing positively contributes to improving the overall performance of the studied company. In addition, the results show that cloud computing enhances operational efficiency, reduces costs, increases organizational flexibility, and enhances information security. The study highlights the importance of institutional readiness and management support in increasing the chances of successful cloud computing implementation. It also recommends building the capabilities of accounting and technology staff to maximize the benefits of cloud computing.

Similarly, Onifade et al. (2023) aimed to investigate the effect of cloud accounting attributes on the performance of listed food and beverage companies in Nigeria. Cloud accounting characteristics were represented by software cost (COSW), risk cost (CORSK), and training cost (COTR), while performance was measured using return on equity (ROE) and market value (MKV). The study included all twenty-three (23) food and beverage companies listed on the Nigerian Stock Exchange (NSE) as of December 31, 2021. Purposive sampling was used to select ten (10) food and beverage companies, and secondary data covering ten years (2012-2021) were collected for analysis. Multiple regression analysis was applied as an analytical technique. The results indicated that COSW had a negative and statistically significant effect on return on equity and market value. In contrast, COTR showed a positive and significant effect on both return on equity and market value. The study concluded that COSW and COTR significantly affect the performance of food and beverage companies in Nigeria. Therefore, the study recommended that food and beverage companies in Nigeria implement measures to control training costs to maximize the benefits of cloud accounting.

Also, the study by Al-Okaily et al. (2022) aimed to investigate the variables affecting the adoption of cloud-based Accounting Information Systems (AIS) in times of crisis (i.e., the COVID-19 pandemic) by extending the Unified Theory of Acceptance and Use of Technology (UTAUT) to include crucial new related aspects. A quantitative study approach was used with an online cross-sectional questionnaire to collect empirical data from 438 potential and current users of cloud-based accounting information systems. The structural path showed that performance expectancy, social influence, COVID-19 perceived risk (COV-19 PR), and trust (TR) had a significant impact on users' behavioral intention (BI) to use cloud-based accounting information systems, accounting for 71% of the variance. Contrary to expectations, effort expectancy and perceived security risks (SEC) had no significant impact on BI. Furthermore, BI was found to affect actual usage habits, accounting for 74% of the variance. Cloud-based AIS use also significantly affected two outcome factors: communication quality (CQ) and decision quality (DQ).

Furthermore, the study by Yousfi and Qattal (2021) aimed to identify the impact of moving towards cloud computing on financial performance in Algerian economic institutions, and to provide an overview of the concept of online accounting applications, their benefits, and the procedures to be taken to improve policies aimed at accepting their adoption. To achieve the study objectives, it was divided into two parts: an inductive part represented by the theoretical foundation of the study problem, and a case study through application to Algerie Telecom, which is a leading institution in this field. The study concluded the necessity of encouraging institutions to use cloud accounting applications that lead to improving their performance, while taking into account system reliability. Cloud accounting expresses transparency and credibility of financial performance in Algerian economic institutions.

Al-Aboudi et al. (2019) studied a sample of companies registered in the Iraq Stock Exchange using the latest data. For the purpose of testing the proposed hypotheses, the structural equation modeling method can be used. After ensuring the validity and reliability of the measurement model, it is concluded that there is a reliable indicator proving that intellectual capital affects the financial performance of economic units. This indicates that the value of companies listed on the Iraq Stock Exchange can interact with intellectual capital. In addition, the study results show that intellectual capital and its components are positively associated with the financial performance of companies.

As for Saleh's study (2017), it aimed to explain the impact of intellectual capital on financial performance in Jordanian industrial companies listed on the Amman Stock Exchange. To achieve this objective, the study relied on a descriptive and analytical approach through published data in the financial statements of a sample of 40 companies. Multiple regression analysis was used to test the study hypotheses and achieve its objectives. The study reached a set of results, the most important of which were: a positive impact of intellectual capital on both return on assets and earnings per share, and a negative impact of intellectual capital on return on equity. The study recommended the necessity of paying attention to intellectual capital and attracting individuals with high experience and skills.

After reviewing many previous studies, the researchers found that most previous studies focused on the impact of cloud accounting on financial performance or the impact of intellectual capital on financial performance in other sectors such as banks, companies, and institutions. The current study was distinguished from these studies by addressing the impact of cloud accounting on financial performance and the role of intellectual capital as a moderating variable in the Jordanian industrial sector, and this study came in a recent period compared to Arab studies.

6. Study Hypotheses

In light of the foregoing, the following study hypotheses were formulated:

1. First Main Hypothesis (H1): There is a statistically significant impact (at a significance level of $\alpha \leq 0.05$) of cloud accounting use on financial performance in Jordanian industrial companies.
2. Second Main Hypothesis (H2): There is a statistically significant moderating effect (at a significance level of $\alpha \leq 0.05$) of intellectual capital in its three dimensions (human capital, structural capital, relational capital) on the relationship between cloud accounting use and financial performance in Jordanian industrial companies.

The second hypothesis gives rise to the following sub-hypotheses:

- 2.1. First Sub-Hypothesis (H2.a): There is a statistically significant moderating effect (at a significance level of $\alpha \leq 0.05$) of human capital on the relationship between cloud accounting use and financial performance in Jordanian industrial companies.
- 2.2. Second Sub-Hypothesis (H2.b): There is a statistically significant moderating effect (at a significance level of $\alpha \leq 0.05$) of structural capital on the relationship between cloud accounting use and financial performance in Jordanian industrial companies.
- 2.3. Third Sub-Hypothesis (H2.c): There is a statistically significant moderating effect (at a significance level of $\alpha \leq 0.05$) of relational capital on the relationship between cloud accounting use and financial performance in Jordanian industrial companies.

7. Study Methodology

This study adopted the descriptive analytical inferential approach, which is considered the most suitable for the nature of research in administrative and accounting sciences. The descriptive approach provides the ability to describe the characteristics of the studied phenomenon through statistical indicators such as means and standard deviations, while the analytical inferential approach enables the analysis of relationships between variables and hypothesis testing using statistical samples to infer generalized judgments on the entire population (Creswell & Creswell, 2018).

8. Study Population and Sample

Hair et al. (2021) define the study population as the framework that includes all elements related to the research phenomenon, which can be classified into a defined population whose members can be accurately enumerated, or an undefined population whose complete elements are difficult to identify. In the context of this study, the research population was identified as industrial companies listed on the Amman Stock Exchange (42 companies applying cloud accounting), out of a total of (203) companies. Employees working in the accounting departments within these companies were chosen as the sampling and analysis unit, given the nature of their work and their essential role in applying cloud accounting systems and their direct impact on financial performance. The sampling unit includes the following categories:

- Financial managers, due to their strategic oversight of financial activities and the implementation of modern accounting solutions.
- Heads of accounting departments, for their executive role in managing daily accounting operations and ensuring the accuracy of data used in financial evaluations.
- Accountants, for their actual participation in implementing cloud accounting systems and processing basic accounting operations.

The selection of these categories was based on their close association with both main study variables (cloud accounting use and financial performance), which ensures strong alignment between the study's conceptual framework and the requirements for practical statistical analysis.

As for the distribution of the study sample, it was selected using an online questionnaire, which was developed and distributed to employees working in the accounting departments of industrial companies listed on the Amman Stock Exchange. The simple random sampling method was followed, which is considered one of the most accurate and objective methods for selecting research samples, as it gives all members of the population equal opportunities for selection without bias (Etikan, 2023).

The primary sources consisted of a field questionnaire specifically designed to fit the study topic and measure its three variables: financial performance, cloud accounting use, and intellectual capital. The questionnaire items were developed based on a review of relevant recent studies, and its items were formulated scientifically to ensure their ability to accurately express the studied phenomena. The questionnaire consisted of two main sections:

First Section: Included questions to collect demographic and occupational data about participants, such as educational qualification, age, years of experience, and job title.

Second Section: Included items related to measuring the three study variables:

Financial Performance, based on recent studies such as (Aboelmaged, 2018) and (Alzoubi, 2022).

Cloud Accounting Use, based on (Goundar, 2019).

Intellectual Capital, based on (Inkinen, 2015), (Marr, 2022).

The final version of the second section of the questionnaire contained (26) items, distributed as follows: five (5) items dedicated to measuring financial performance, nine (9) items for measuring cloud accounting use, and twelve (12) items for measuring intellectual capital. These items were carefully designed to ensure coverage of all dimensions related to the study variables, achieving consistency between the theoretical framework and the applied objectives.

The study adopted a Summated Scales approach for the questionnaire response alternatives, aiming to measure the degree of agreement or attitudes of the sample individuals. Its range was between (1-5), where (5) represented "Strongly Agree," and (1) represented "Strongly Disagree," with the remaining values graded according to the level of agreement. These numerical scores are used to quantitatively represent the respondents' attitudes and opinions, which is known as a five-point Likert scale (Sekaran & Bougie, 2020).

The number of electronically received questionnaires was (164), all of which were valid for statistical analysis. Since the study population is classified as an indeterminate population, due to the difficulty of enumerating the total number of employees in accounting departments within listed industrial companies, the Kaiser-Meyer-Olkin (KMO) test was used to assess the adequacy of the sample (Hair et al., 2022).

The demographic distribution results of the study sample, which included (164) employees working in the accounting departments of industrial companies listed on the Amman Stock Exchange, showed that the sample is characterized by its diversity and balance, which enhances the reliability of the results and their generalizability to the study population. In terms of job title, accountants constituted the largest percentage (54.5%), followed by heads of accounting departments (25%), financial managers (11.6%), in addition to a group of other job titles (8.9%), which reflects the comprehensiveness of the sample for jobs directly related to the application of cloud accounting and financial performance analysis.

As for the age group, the sample was predominantly young and professional, with the majority of participants aged between 30 and less than 40 years, at a rate of (41.1%), followed by the age group from 40 to less than 50 years, at a rate of (26.8%), which indicates that most of the sample members are in the stage of professional maturity and have the necessary experience to interact with modern technological variables such as cloud accounting. Regarding educational qualification, the results showed that (67%) of the sample held a bachelor's degree, and (17.9%) held a master's degree. These are high percentages reflecting good academic competence among the sample members, which enhances confidence in their ability to objectively and consciously evaluate cloud accounting applications and their impact on financial performance. As for work experience, the data showed that the largest percentage was for those with 5 to less than 10 years of experience, at a rate of (42.9%), followed by those with experience between 10 to less than 15 years, at a rate of (30.4%), which indicates that the majority of the sample enjoy moderate to high professional experience, capable of understanding and analyzing modern accounting systems and the reality of financial performance in their companies.

Based on these results, it can be said that the sample is characterized by appropriate scientific and professional characteristics that enhance the credibility of the study's outputs and support the possibility of generalizing the results to the population of industrial companies in Jordan. The diversity in demographic variables also supports the reliability of interpreting the studied relationship between cloud accounting use and financial performance under the moderating effect of intellectual capital. The Kaiser-Meyer-Olkin (KMO) test is a key indicator for determining the suitability of data for factor analysis, as values exceeding 0.50 are clear evidence that the sample is sufficient and representative of the statistical population in a sound manner (Sarstedt et al., 2022).

Table (1) shows that the value of the Kaiser-Meyer-Olkin (KMO) test was 0.789, which is higher than the accepted minimum of (0.50), indicating that the sample size used in this study is statistically appropriate and well represents the study population.

Table (1): Results of the (KMO and Bartlett's Test) for determining sample size sufficiency

Test	Value
Kaiser-Meyer-Olkin (KMO) for Sample Adequacy	0.789
Bartlett's Test of Sphericity	314.427
Degrees of Freedom (df)	6
Statistical Significance Level (Sig)	0

9. Validity and Reliability of the Study Instrument

Construct Validity: The construct validity test aims to verify the consistency of the items with the variables they measure, by examining the degree of correlation of each item with the dimension it belongs to. Hair et al. (2022) indicate that construct validity is achieved when there is a strong positive correlation between the item and the total score of the dimension. To measure this, Pearson Correlation coefficient was used, and according to Henseler et al. (2021), an item is considered construct valid if its correlation coefficient is positive and exceeds (0.25). The results of the construct validity test for the study instrument items are shown in Table (2).

Table (2): Construct Validity Test Results

#	Item	Correlation Coefficient
A	Dependent Variable Items (Financial Performance)	
1	The company has achieved stable profits over the past three years.	0.604
2	The company's Return on Assets (ROA) is high compared to competitors.	0.548
3	The Return on Equity (ROE) reflects the efficiency of capital management in the company.	0.483
4	The company has positive cash flows that support the sustainability of operational activities.	0.544
5	The company achieves competitive profit margins in the market.	0.599
B	Independent Variable (Cloud Accounting Use)	
1	The cloud accounting system contributes to improving the efficiency of financial operations by reducing time for reports and transactions.	0.531
2	The cloud accounting system provides instant updates of financial data, helping in accurate and quick financial decisions.	0.637
3	The cloud accounting system helps reduce accounting errors through automation and improved accuracy of financial operations.	0.401
4	The cloud accounting system allows accurate recording and review of financial transactions, enhancing financial transparency in the company.	0.517
5	The system provides accurate financial reports updated automatically, facilitating internal review and auditing processes.	0.576

6	The system facilitates compliance with financial and tax standards through accurate documentation of financial data and transactions.	0.689
7	The cloud accounting system allows secure and centralized data storage with access from any device.	0.593
8	The cloud accounting system enhances operational efficiency by reducing accounting errors and accelerating financial processing.	0.703
9	The cloud accounting system facilitates collaboration between different work teams by sharing data simultaneously.	0.688
C	Moderating Variable Items (Intellectual Capital)	
1	Your company's employees have adequate work experience enabling them to perform their jobs efficiently and effectively.	0.679
2	Your company's employees possess high professional skills commensurate with their job requirements, contributing to overall company performance.	0.741
3	Your company provides well-designed training programs that help employees develop their skills and improve their job performance.	0.732
4	The work environment in your company encourages employees to develop new ideas and knowledge that contribute to improving operations and innovation.	0.718
5	Our comprehensive operational procedures are effective and help achieve operational goals smoothly.	0.736
6	Your company responds quickly and effectively to changes in the market or operational environment.	0.568
7	Your company has an information system that is easily accessible to employees and management to support decision-making.	0.765
8	Our systems and procedures help promote innovation and encourage employees to present new ideas for work development.	0.764
9	We are able to detect and solve problems through close communication and effective cooperation with suppliers, customers, and other related parties.	0.701
10	We maintain an appropriate level of interaction and communication with stakeholders such as investors, employees, and the local community.	0.566
11	We strive to build long-term relationships with customers by providing high-quality products or services and excellent service.	0.622
12	Your company enjoys stable and strong relationships with its strategic partners, contributing to shared success.	0.601

The results of the construct validity test showed that the correlation coefficient values for financial performance items ranged between (0.483) and (0.604), confirming that these items possess acceptable construct validity. As for cloud accounting use items, the correlation coefficients ranged between (0.401) and (0.703), indicating the strength of the relationship and the validity of the items in measuring the independent variable. Likewise, the intellectual capital items showed correlation coefficients ranging between (0.566) and (0.765), reflecting strong consistency between the items and the domains they belong to. Based on these results, it is clear that all items showed a positive direction and correlation coefficients exceeding (0.25), indicating that the study instrument has a high degree of construct validity, and there was no need to delete any item from the questionnaire.

10. Reliability of the Study Instrument

The reliability of the study instrument was tested based on the consistency and stability of its results. The first method used was Cronbach's Alpha coefficient, which is one of the most common indicators for measuring the reliability of measurement instruments. A measurement instrument with a high degree of reliability should achieve a Cronbach's Alpha value exceeding (0.70), as indicated by Creswell and Creswell (2018). The reliability analysis results showed that the reliability coefficient for financial performance was (0.729), for the cloud accounting use variable (0.764), and for the intellectual capital variable (0.819), while the overall indicator for the reliability of all items was (0.772), as shown in Table (3). Thus, the above values confirm that the study instrument has a high degree of reliability and internal consistency.

Table (3): Reliability Test Results using (Cronbach's Alpha Coefficient)

Variable	Type	Number of Items	Cronbach's Alpha
Financial Performance	Dependent	5	0.729
Cloud Accounting	Independent	9	0.764
Intellectual Capital	Moderating	12	0.819
Overall Reliability of All Study Instrument Items		26	0.772

11. Descriptive Statistics Results for Study Variables

Descriptive Statistics Results for the Dependent Variable (Financial Performance) Table (4) shows the respondents' answers to (5) items measuring the dependent variable (Financial Performance), and it shows the mean, standard deviation, significance level for each item, and its rank.

Table (4): Descriptive Statistics Results for Financial Performance

#	Item	Mean	Standard Deviation	Level	Rank
1	The company has achieved stable profits over the past three years.	4.3	0.68	Very High	1
2	The company achieves competitive profit margins in the market.	4.2	0.58	High	2
3	The company has positive cash flows that support the sustainability of operational activities.	4.1	0.6	High	3
4	The company's Return on Assets (ROA) is high compared to competitors.	3.9	0.75	High	4
5	The Return on Equity (ROE) reflects the efficiency of capital management in the company.	3.7	0.82	High	5

The results in Table (4) indicate that the item related to the company achieving stable profits over the past three years recorded the highest mean of (4.30) with a standard deviation of (0.68), reflecting strong financial performance stability and acceptable homogeneity in the sample's responses. The lowest mean was recorded for the item "Return on Equity (ROE)" with a mean of (3.70) and a standard deviation of (0.82), indicating a relatively higher variance among participants' responses regarding capital management efficiency. In general, all means ranged between (3.70) and (4.30), placing the overall financial performance at a "High" level, and the standard deviation values did not exceed (0.82), indicating acceptable consistency in respondents' opinions. Statistically, the "Overall Indicator for Financial Performance" showed a high level, reflecting a generally positive evaluation of financial performance across the five items. It is noted that the differences between the arithmetic means were limited, indicating that the studied financial performance components (profitability, cash flows, operational efficiency) received relatively similar evaluations from the respondents. This consistency in responses enhances the credibility of statistical data and the stability of the study results in this dimension.

Descriptive Statistics Results for the Independent Variable (Cloud Accounting Use) Table (5) shows the respondents' answers to (9) items measuring the independent variable (Cloud Accounting Use), and it shows the mean, standard deviation, significance level for each item, and its rank.

Table (5): Descriptive Statistics Results for Cloud Accounting Use

#	Item	Mean	Standard Deviation	Level	Rank
1	The company has achieved stable profits over the past three years.	4.3	0.68	Very High	1
2	The company achieves competitive profit margins in the market.	4.2	0.58	High	2
3	The company has positive cash flows that support the sustainability of operational activities.	4.1	0.6	High	3
4	The company's Return on Assets (ROA) is high compared to competitors.	3.9	0.75	High	4
5	The Return on Equity (ROE) reflects the efficiency of capital management in the company.	3.7	0.82	High	5

The results in Table (5) show that the highest mean was achieved in the item "The system facilitates compliance with financial and tax standards" with a mean of (4.60) and a standard deviation of (0.55), indicating a very high rating and a relatively large consensus among the sample members regarding the system's efficiency in this aspect. In contrast, the item "The cloud accounting system helps reduce accounting errors" recorded the lowest mean (3.60) with a standard deviation of (0.80), indicating a relatively lower rating with greater variation in respondents' opinions. The means for all items ranged between (3.60) and (4.60), which generally reflects high levels of satisfaction with cloud accounting use across its various dimensions. Statistically, the "Overall Indicator for Cloud Accounting Use" appears at a high level, indicating general and positive acceptance of these systems in accounting operations. Also, the majority of items (5 out of 9) fell within the "very high" level, which reinforces the system's effectiveness in improving instant updates, operational efficiency, and financial report accuracy. The standard deviations ranged between (0.55) and (0.80), indicating good consistency in responses with some natural variation around certain aspects, especially those related to reducing accounting errors.

Descriptive Statistics Results for the Moderating Variable (Intellectual Capital) Table (6) shows the respondents' answers to (12) items measuring the moderating variable (Intellectual Capital), and it shows the mean, standard deviation, significance level for each item, and its rank.

Table (6): Descriptive Statistics Results for Intellectual Capital

#	Item	Mean	Standard Deviation	Level	Rank
1	Your company has an information system that is easily accessible to support decision-making.	4.7	0.5	Very High	1
2	Systems and procedures help promote innovation and encourage the presentation of ideas.	4.65	0.52	Very High	2
3	Your company's employees possess high professional skills.	4.55	0.54	Very High	3
4	Your company provides good training programs.	4.5	0.57	Very High	4
5	Our comprehensive operational procedures are effective.	4.25	0.6	Very High	5
6	The work environment encourages employees to develop ideas and knowledge.	4.2	0.65	High	6
7	Your company's employees have adequate work experience.	4.05	0.72	High	7
8	Building long-term relationships with customers.	3.9	0.76	High	8
9	Responding to market changes.	3.85	0.77	High	9
10	Stable relationships with strategic partners.	3.85	0.77	High	10
11	We are able to detect and solve problems through effective communication.	3.8	0.78	High	11
12	Interaction with stakeholders.	3.75	0.79	High	12

The results in Table (6) show that the item related to "the company having an information system that is easily accessible to support decision-making" achieved the highest mean (4.70) with the lowest standard deviation (0.50), reflecting a very high level of satisfaction and strong consistency in the sample's evaluations. In contrast, the item "Interaction with stakeholders" had the lowest mean (3.75) and a standard deviation (0.79), indicating a relatively lower evaluation and greater variation in respondents' opinions on this aspect. The means for the remaining items ranged between (3.75) and (4.70), indicating a strong positive view towards intellectual capital practices in companies. Statistically, the "Overall Indicator for Intellectual Capital" reflected a high level, indicating the availability of advanced practices to support knowledge and innovation within companies. The first five items achieved "very high" levels, emphasizing the importance of investing in information systems, professional skills, and training programs to enhance institutional performance. As for the standard deviations, they were generally moderate and did not exceed (0.79), indicating a good degree of consistency among the sample's opinions, with slight differences in evaluating issues related to relationships with partners and stakeholders.

12. Results of Hypothesis Testing

Data analysis was performed to test hypotheses related to the direct impact of cloud accounting use on financial performance, as well as to study the moderating effect of intellectual capital on the relationship between cloud accounting use and financial performance. Smart-PLS version 4.0 was used, employing Partial Least Squares Structural Equation Modeling (PLS-SEM). The use of PLS-SEM is suitable for this exploratory study for several reasons; most notably, its ability to handle complex models that include latent variables, in addition to its applicability to relatively small samples, while providing high explanatory and statistical power (Hair et al., 2019). Smart-PLS also provides the ability to comprehensively evaluate both the measurement model (verifying the reliability and validity of measurement instruments) and the structural model (analyzing the path relationships between variables).

Measurement Model Evaluation In this section, the measurement model data were examined by evaluating the reliability and validity of the measurement instruments. The analysis included three main stages: evaluating internal consistency and item loadings, then verifying convergent validity, and finally testing discriminant validity (Hair et al., 2019). PLS-SEM was used to examine item loadings, and as shown in Table (8), the analysis results showed that all item loadings exceeded the recommended threshold value (greater than 0.70), indicating the strong representation of the items for the variables. In addition, the internal consistency of reliability was measured using Cronbach's Alpha coefficient (α) and Composite Reliability (CR) for all 26 items included in the analysis. All values exceeded the recommended minimum threshold of (0.70), confirming the reliability of the measurement instruments used (Hair et al., 2019).

Evaluating convergent validity is an essential step to ensure that items associated with the same dimension share a high proportion of common variance. The Average Variance Extracted (AVE) was used as a primary indicator for evaluating convergent validity (Benitez et al., 2020). As shown in Table (7), all AVE values exceeded the recommended threshold value (0.50), indicating that convergent validity was achieved for all studied variables.

Table (7): Reliability and Validity Test of Variables

#	Item	Mean	Standard Deviation	Level	Rank
1	Your company has an information system that is easily accessible to support decision-making.	4.7	0.5	Very High	1
2	Systems and procedures help promote innovation and encourage the presentation of ideas.	4.65	0.52	Very High	2
3	Your company's employees possess high professional skills.	4.55	0.54	Very High	3
4	Your company provides good training programs.	4.5	0.57	Very High	4
5	Our comprehensive operational procedures are effective.	4.25	0.6	Very High	5
6	The work environment encourages employees to develop ideas and knowledge.	4.2	0.65	High	6
7	Your company's employees have adequate work experience.	4.05	0.72	High	7
8	Building long-term relationships with customers.	3.9	0.76	High	8
9	Responding to market changes.	3.85	0.77	High	9
10	Stable relationships with strategic partners.	3.85	0.77	High	10

11	We are able to detect and solve problems through effective communication.	3.8	0.78	High	11
12	Interaction with stakeholders.	3.75	0.79	High	12

Furthermore, to ensure the distinctiveness of the studied variables, three methods were used to evaluate discriminant validity, namely: the cross-loadings criterion. A review of the cross-loadings showed that each item recorded a higher loading on its own variable compared to other variables, as shown in Table (8).

Table (8): Discriminant Validity Assessment Based on Cross-Loadings

#	Item	Mean	Standard Deviation	Level	Rank
1	Your company has an information system that is easily accessible to support decision-making.	4.7	0.5	Very High	1
2	Systems and procedures help promote innovation and encourage the presentation of ideas.	4.65	0.52	Very High	2
3	Your company's employees possess high professional skills.	4.55	0.54	Very High	3
4	Your company provides good training programs.	4.5	0.57	Very High	4
5	Our comprehensive operational procedures are effective.	4.25	0.6	Very High	5
6	The work environment encourages employees to develop ideas and knowledge.	4.2	0.65	High	6
7	Your company's employees have adequate work experience.	4.05	0.72	High	7
8	Building long-term relationships with customers.	3.9	0.76	High	8
9	Responding to market changes.	3.85	0.77	High	9
10	Stable relationships with strategic partners.	3.85	0.77	High	10
11	We are able to detect and solve problems through effective communication.	3.8	0.78	High	11
12	Interaction with stakeholders.	3.75	0.79	High	12

For the purpose of testing the significance of the relationships between cloud accounting use and financial performance, the Bootstrapping technique was applied with 5000 iterations, based on the recommendations of Hair et al. (2019) to ensure accurate statistical inferences. The analysis results, as shown in Table (9), revealed a direct and statistically significant impact of cloud accounting use on financial performance ($\beta = 0.715$, $T = 8.214$, $p < 0.001$), which supports the validity of the first main hypothesis (H1). This result indicates that adopting cloud accounting systems positively and effectively contributes to improving financial performance in Jordanian industrial companies.

Table (9): Hypothesis Testing

Hypothesis	Coefficient (β) (T-Value)	P- Value	Corrected 95% CI Limits	Result	Decision
H1	0.715 (8.214)	0	(0.625, 0.792)	Supported	Accept Hypothesis
H2	0.218 (3.782)	0	(0.101, 0.342)	Supported	Accept Hypothesis
H2a	0.372 (3.412)	0.001	(0.152, 0.573)	Supported	Accept Hypothesis
H2b	0.341 (3.005)	0.003	(0.118, 0.552)	Supported	Accept Hypothesis
H2c	0.290 (1.784)	0.076	(-0.030, 0.534)	Not Supported	Reject Hypothesis

Regarding the testing of the moderating effects of intellectual capital, the Two-Stage Approach was adopted for analyzing the moderating effect. The results showed that intellectual capital as a moderating variable enhances the relationship between cloud accounting use and financial performance positively and statistically significantly ($\beta = 0.218$, $T = 3.782$, $p < 0.001$), confirming the validity of the second main hypothesis (H2).

As for the sub-hypotheses related to the dimensions of intellectual capital, the results showed that both human capital (H2a) and structural capital (H2b) play a positive and statistically significant moderating role in the relationship between cloud accounting use and financial performance. The effect coefficient for human capital was ($\beta = 0.372$, $T = 3.412$, $p = 0.001$), and for structural capital, it was ($\beta = 0.341$, $T = 3.005$, $p = 0.003$), which reinforces hypotheses H2a and H2b, respectively. In contrast, the results for sub-hypothesis (H2c) concerning relational capital did not show sufficient statistical significance, as the effect coefficient was ($\beta = 0.290$, $T = 1.784$, $p = 0.076$), and the corrected confidence interval limits included zero, indicating no statistically significant moderating effect for this dimension. Consequently, hypothesis (H2c) was rejected.

These combined results indicate that investment in human and structural capital represents a fundamental leverage for maximizing the impact of cloud accounting application on improving financial performance, while relational capital requires further research to explore the factors that may affect its effectiveness as a moderating variable in this context.

13. Discussion of Hypothesis Testing Results

13.1. Results related to the First Main Hypothesis (H1): This hypothesis states that "There is a statistically significant impact (at a significance level of $\alpha \leq 0.05$) of cloud accounting use on financial performance in Jordanian industrial companies". The pivotal finding of this study confirms a positive and statistically significant relationship (at a significance level of $\alpha \leq 0.05$) between the degree of cloud accounting use and the level of financial performance of Jordanian industrial companies listed on the Amman Stock Exchange. This means that industrial companies in Jordan that adopt and use cloud accounting systems more extensively tend, on average, to achieve better financial performance compared to their counterparts that rely less on these technologies. The statistical significance lends high confidence to this relationship, indicating that it is not merely a random coincidence in the analyzed data but reflects a real and systematic association between the two variables in the context of the studied sample.

13.2. Results related to the Second Main Hypothesis (H2): This hypothesis states that "There is a statistically significant moderating effect (at a significance level of $\alpha \leq 0.05$) of intellectual capital in its three dimensions (human capital, structural capital, relational capital) on the relationship between cloud accounting use and financial performance in Jordanian industrial companies". The statistical analysis results reveal a significant and statistically considerable moderating role (at a significance level of $\alpha \leq 0.05$) for intellectual capital as a moderating variable in the relationship between cloud accounting use and financial performance in Jordanian industrial companies. This result indicates that the impact of cloud accounting use on financial performance is not constant or identical among all Jordanian industrial companies but rather depends on

or varies in strength and magnitude based on the level of intellectual capital that the company possesses and invests in. The statistical significance of this moderating role means that this difference in the strength of the relationship is not random but systematically linked to the level of intellectual capital.

The importance of this moderating role is particularly prominent in the contemporary Jordanian industrial context. Companies not only seek to adopt technology to keep pace with competition but also need to ensure that they have the internal capabilities (human and organizational) to effectively utilize this technology. Investing in cloud accounting without a parallel focus on intellectual capital may not achieve the expected return on investment, and may explain why some companies succeed in benefiting from technology more than others despite sometimes using the same systems.

As for the results of the second hypothesis's sub-hypotheses:

13.2.1. First Sub-Hypothesis (H2.a): This hypothesis states that "There is a statistically significant moderating effect (at a significance level of $\alpha \leq 0.05$) of human capital on the relationship between cloud accounting use and financial performance in Jordanian industrial companies". The results of the current study show a specific and statistically significant role (at a significance level of $\alpha \leq 0.05$) for human capital as a moderating variable in the relationship between cloud accounting use and financial performance in Jordanian industrial companies. This means that the ability of Jordanian industrial companies to translate their investments in cloud accounting into a tangible improvement in financial performance is significantly and directly affected by the quality and efficiency of their human resources – i.e., by the skills, knowledge, experience, and training of their employees. In other words, the financial benefit from this modern technology is not equal for everyone but varies depending on the level of "human element" within the company and its ability to interact with and exploit this technology. This result clearly confirms that the human element is the decisive factor in achieving financial success from adopting advanced technologies such as cloud accounting. For Jordanian industrial companies, investing in their employees and equipping them with the necessary capabilities to keep pace with the digital age is key to unlocking the full potential of cloud accounting and transforming it into superior and sustainable financial performance.

13.2.2. Second Sub-Hypothesis (H2.b): This hypothesis states that "There is a statistically significant moderating effect (at a significance level of $\alpha \leq 0.05$) of structural capital on the relationship between cloud accounting use and financial performance in Jordanian industrial companies". The analysis results indicate a significant and statistically considerable role (at a significance level of $\alpha \leq 0.05$) for structural capital as a moderating variable in the relationship between cloud accounting use and financial performance in Jordanian industrial companies. This means that the financial benefit that Jordanian industrial companies gain from adopting cloud accounting depends not only on the technology itself or on the skills of their employees but is also significantly affected by the strength and robustness of their internal structures, the efficiency of their systems and operational processes, and the effectiveness of their organizational culture and policies – i.e., by the level and quality of their structural capital. In other words, the company's organizational and procedural infrastructure plays a crucial role in determining the success of cloud accounting implementation in improving financial performance. In conclusion, this result highlights that the company's organizational and procedural infrastructure – its structural capital – plays a vital role in determining its success in leveraging cloud accounting to improve its financial performance. Jordanian industrial companies that possess robust operations, integrated systems, and a supportive organizational culture are better able to transform investment in this advanced technology into positive and sustainable financial results.

13.2.3. Third Sub-Hypothesis (H2.c): This hypothesis states that "There is a statistically significant moderating effect (at a significance level of $\alpha \leq 0.05$) of relational capital on the relationship between cloud accounting use and financial performance in Jordanian industrial companies". The study results present a non-statistically significant finding (at a significance level of $\alpha \leq 0.05$) where relational capital does not act as a moderating variable in the relationship between cloud accounting use and financial performance in Jordanian industrial companies. This result contradicts the common assumption that all forms of intellectual capital should enhance the benefits of technology. This finding provides a critical and complex view of the relationship between technology, intellectual capital, and financial performance. It suggests that relational capital, which is usually seen as a source of strength, may not interact well with the adoption of cloud accounting in Jordanian industrial companies. This emphasizes the necessity of understanding the specific context of each company

and its internal and external dynamics when making strategic decisions related to digital transformation, and calls for further research to better understand this phenomenon.

14. Importance of the Study

This study holds both practical and theoretical importance. Practically, it provides valuable insights for Jordanian industrial companies seeking to enhance their operational efficiency and decision-making quality by integrating cloud accounting technologies with effective management of intellectual capital. By identifying key organizational factors that strengthen the positive effects of cloud accounting, the study offers actionable strategies for improving financial performance and sustaining competitiveness in an increasingly digital economy. Furthermore, the study underscores the strategic value of intellectual capital investment, particularly in human and structural domains, as enablers of technological effectiveness. Its findings may assist policymakers and stakeholders in crafting supportive regulations and institutional frameworks that facilitate technological diffusion and capacity building in the industrial sector. Theoretically, the study contributes to the academic literature by addressing a gap related to the interactive effect of cloud accounting and intellectual capital. By focusing on the Jordanian industrial context, it adds empirical depth to the global discourse and provides a nuanced understanding of how intangible assets mediate the value derived from digital accounting systems.

15. Conclusion

The study results showed that the study sample members believe that the financial performance of industrial companies listed on the Amman Stock Exchange was at a high level. This result indicates a high degree of consensus among the sample members that these companies achieve good levels of profitability and operational efficiency, and that they are able to achieve appropriate returns on their investments and assets, which generally meets the expectations of stakeholders. This result can be attributed to several factors that directly affect the financial performance of industrial companies listed on the Amman Stock Exchange, including adopting effective competitive strategies, enjoying a strong market position, efficiency in managing costs and operational processes, in addition to the ability to innovate and respond to market requirements. The effective use of modern technology, such as cloud accounting (the independent variable), and investment in and development of intellectual capital (the moderating variable) may also contribute to enhancing this performance and achieving its sustainability.

The study results showed that the study sample members believe that intellectual capital in industrial companies listed on the Amman Stock Exchange was at a high level. This result indicates that these companies possess and develop valuable intangible assets, including the skills and experiences of their employees (human capital), the efficiency of their internal systems and structures and their brand (structural capital), and the strength of their relationships with customers, suppliers, and partners (relational capital), which contributes to enhancing their competitiveness and their ability to innovate and achieve outstanding financial performance. This positive result in the level of intellectual capital can be attributed to several factors, including companies' investment in continuous training and development programs for their employees to enhance human capital, and focusing on building an organizational culture that encourages knowledge sharing and innovation. Also, the existence of effective knowledge management systems, documented processes, and a strong brand (structural capital) supports work efficiency and continuity. In addition, the high level of intellectual capital may reflect companies' interest in building strong and sustainable relationships with external stakeholders (relational capital). Intellectual capital is believed to play an important role in maximizing the benefit from modern technologies such as cloud accounting, as it enables companies to use these tools strategically to improve performance. Despite this, companies may face challenges in comprehensively and effectively measuring and managing all components of intellectual capital, and there may be a need for more focus on developing mechanisms to evaluate the return on investment in these intangible assets to ensure their continuous contribution to achieving the company's strategic objectives.

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Competing interests

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