Examining the Impact of Accounting Software on Enhancing the Accuracy and Timeliness of Financial Reports

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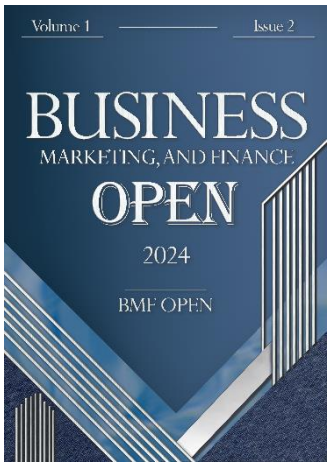

Citation: Pour Seyfaldini Jorjafki, A. (2024). Examining the Impact of Accounting Software on Enhancing the Accuracy and Timeliness of Financial Reports. *Business, Marketing, and Finance Open*, 1(2), 141-149.

Received: 12 January 2024
Revised: 13 February 2024
Accepted: 26 February 2024
Published: 01 March 2024

Abstract: In the era of information technology transformations, traditional accounting systems have gradually been replaced by modern tools and specialized software designed to enhance the quality, accuracy, and speed of financial data processing. This study aimed to examine the impact of using accounting software on improving the accuracy and timeliness of financial reports. This research was applied in nature and conducted using a descriptive-survey method with a quantitative approach. The statistical population consisted of accountants and financial experts working in private companies in Tehran, selected through simple random sampling. The data collection tool was a researcher-made questionnaire based on theoretical literature and prior research, including demographic items and statements measuring the variables using a Likert scale. The independent variable was the use of accounting software, assessed through three dimensions, while the dependent variables were the accuracy and timeliness of financial reports. The validity and reliability of the instrument were confirmed by expert review and statistical tests. Data were analyzed using SmartPLS 4 software and the structural equation modeling method. Both the measurement and structural models of the study were evaluated. The results indicated that the use of accounting software has a positive and significant effect on the accuracy and timeliness of financial reports. The measurement instrument demonstrated satisfactory reliability and validity. Path coefficients revealed that accounting software directly influences both the accuracy and timeliness of reports. Furthermore, the model showed a good fit, and accounting software explained approximately 22.1% and 15.2% of the variance in accuracy and timeliness, respectively. The use of accounting software plays an effective role in enhancing the quality of financial reporting. This impact is particularly evident in two key aspects: the accuracy of financial information and the scheduling of report preparation and presentation.

Keywords: Accounting software, financial report, scheduling, report accuracy, path analysis.

1. Introduction

In the era of rapid advancements in information technology, traditional accounting systems have gradually been replaced by modern tools and specialized software designed to enhance the quality, accuracy, and speed of financial data processing. The accuracy and timeliness of financial reports have consistently been among the most critical indicators of the efficiency and effectiveness of organizational financial performance, as these two factors directly influence strategic decision-making, stakeholder trust, legal compliance, and an organization's economic success [1]. In this context, the use of accounting software as a technological solution has provided new opportunities for enhancing financial and accounting processes.

The advancement of information technology (IT) systems and tools has significantly transformed traditional accounting practices and notably improved the productivity and efficiency of accounting data management. This transformation has facilitated financial operations, enhanced decision-making capacity, and helped organizations adapt to the dynamic and evolving needs of the global market. Despite these technological advances, accounting continues to play a fundamental and central role in companies, serving as the foundation for operational efficiency and financial stability. The accurate and principled implementation of accounting procedures plays a key role in improving a company's financial performance by eliminating unnecessary costs and reducing potential risks [2-4]. At its core, accounting provides the basis for financial management and offers a structured framework for informed decision-making and ensuring transparency [5]. Over the years, changes in accounting practices have progressed in parallel with shifts in business management practices [2]. In particular, the rapid development and expansion of information technology have profoundly impacted accounting systems, enhancing their performance and efficiency. However, despite the vast potential of IT, accounting systems continue to face multiple challenges, often stemming from accountants' reluctance to fully embrace or utilize new technologies. This hesitation can lead to inefficiencies and missed opportunities, underscoring the need for deeper integration between IT and accounting systems to achieve greater productivity and efficiency [6].

Indeed, digital transformation in the financial sector has led organizations to increasingly automate accounting processes. Accounting software, with features such as automated data processing, real-time information updates, comprehensive and diverse reporting, intelligent internal controls, and audit facilitation, has played a crucial role in enhancing accuracy and reducing human error [7, 8]. Additionally, such software allows for more precise monitoring and control of financial operations and creates opportunities for timely reporting, significantly increasing organizational responsiveness to the informational needs of internal and external stakeholders. A wide range of accounting software products are available in the market, each offering unique advantages. Cloud-based software such as QuickBooks Online and Xero has gained popularity among small and medium-sized enterprises due to remote access and automatic updates. On the other hand, enterprise systems such as SAP ERP and Oracle NetSuite, with their comprehensive financial and resource management capabilities, address the complex needs of large corporations [4]. Furthermore, open-source software like GnuCash and Odoo offers cost-effective solutions for organizations seeking customizable options.

The accuracy of financial reports refers to the correct recording, proper classification, and faithful representation of financial transactions, which are essential for organizational transparency and accountability. In parallel, timeliness holds significant importance, as delays in delivering financial information can lead to inefficient decision-making, diminished investor confidence, and legal complications. Accounting software, by facilitating and accelerating data processing, plays a critical role in addressing these challenges [9]. The accuracy of financial reporting, measured by the frequency and severity of reporting errors, is vital for ensuring transparency and trust in financial markets. In developed economies like the United States, there has been an increased emphasis in recent years on improving the accuracy of financial reporting. According to a study by DeFond and Zhang (2014), the quality of financial reporting in the U.S. has improved, with a reduction in the number and severity of reporting errors [10]. For instance, following the Enron scandal in the early 2000s, regulatory bodies such as the U.S. Securities and Exchange Commission (SEC) implemented stricter reporting standards, including the Sarbanes-Oxley Act, which enhanced the accuracy of financial reporting. Moreover, advancements in technology and widespread adoption of data analytics tools have contributed to error reduction in developed economies. For example, the use

of advanced software tools for data validation and reconciliation has enabled organizations to detect and correct errors more quickly, resulting in improved reporting accuracy.

Japan has also made strides in improving the accuracy of financial reporting. A study by Akamah and Sawai (2017) indicates that Japanese companies have undertaken efforts to enhance transparency and accuracy in financial reporting, reflecting a global trend [11]. Japan's Financial Services Agency (FSA) has introduced regulations to strengthen corporate governance and internal controls, leading to a reduction in the frequency and severity of reporting errors. Additionally, the adoption of International Financial Reporting Standards (IFRS) has aligned Japan's reporting practices with global standards, thereby improving the accuracy and comparability of financial statements in the country.

In developing economies, the trajectory of financial reporting accuracy may differ. In these economies, reporting errors are more common due to factors such as weak regulatory frameworks, limited resources, and a lack of expertise in financial reporting. For example, in India, a study by Chakraborty and Hossain (2016) found that while financial reporting accuracy has gradually improved, it remains problematic. The enactment of the Companies Act in 2013 and the implementation of Indian Accounting Standards (Ind AS) aimed to enhance reporting quality, but challenges, particularly among smaller firms, still persist [12].

Given the increasing competition and complexity in the economic environment, organizations require tools that offer maximum efficiency with minimal resources. In this regard, accounting software, as a technological tool, can significantly elevate an organization's financial performance—especially in small and medium-sized enterprises with limited human and financial resources, where the use of such software can notably improve the efficiency and accuracy of accounting processes [13]. However, the actual effectiveness of these tools in practice is influenced by factors such as user skill levels, software alignment with organizational needs, IT infrastructure, and organizational culture. Therefore, a detailed empirical assessment of the impact of using accounting software on the accuracy and timeliness of financial reporting can offer a better understanding of their strengths and weaknesses in real-world settings [11].

Numerous global studies have explored the impact of accounting software on various aspects of financial performance. For example, in an analytical study, Alfartoosi et al. (2024) demonstrated that accounting software enhances the accuracy of data entry, reduces operational costs, and facilitates the auditing process [3]. Likewise, research by Olamide et al. revealed that companies using accounting software were able to deliver more timely and higher-quality financial reports [14]. Nonetheless, most of these studies have been conducted in developed countries, and few have deeply examined this issue within the economic and organizational context of developing countries such as Iran.

In Iran, with the increasing use of both domestic and international accounting software in public and private organizations, there is a growing need for scientific and field-based evaluations of these tools' effectiveness in enhancing the accuracy and timeliness of financial reporting. Understanding the extent and manner in which these software systems influence financial performance can help financial managers, accountants, and information system designers make better choices and improve the efficiency of their financial processes.

Accordingly, the present study is conducted with the aim of investigating the impact of accounting software on improving the accuracy and timeliness of financial reports.

2. Methodology

This study was applied in terms of purpose and descriptive-survey in nature, conducted using a quantitative approach. The statistical population consisted of accountants, financial analysts, and accounting experts employed in private sector companies located in Tehran. Using simple random sampling and based on the Morgan table, a total of 150 individuals were selected as the sample.

The data collection instrument was a researcher-made questionnaire designed based on a review of the theoretical literature and previous research. The questionnaire included two sections: the first section contained demographic information (age, gender, work experience, and familiarity with accounting software), and the second section comprised 18 items measured on a five-point Likert scale to assess the research variables.

The independent variable, "use of accounting software," was measured across three dimensions: type of software used, users' skill level, and daily usage frequency. The dependent variables consisted of two components: "financial report accuracy" (reduction of errors, data correctness) and "report timeliness" (reduction in report preparation time, data timeliness).

To assess the face and content validity of the questionnaire, input was obtained from seven university professors and accounting experts. Instrument reliability was examined using Cronbach's alpha and composite reliability (CR). The Cronbach's alpha values for all variables were above 0.70, and the convergent validity of the model was confirmed with an Average Variance Extracted (AVE) value above 0.60.

Data analysis was conducted using SmartPLS 4 software through the structural equation modeling technique with a partial least squares approach (PLS-SEM). This method enabled simultaneous analysis of relationships among multiple variables and the validation of both the measurement and structural models. The research model included the independent variable "accounting software" and the two dependent variables "report accuracy" and "report timeliness."

To evaluate the measurement model, reliability, convergent validity (AVE), and discriminant validity (Fornell-Larcker criterion) were examined. In assessing the structural model, path coefficients, R^2 values for the dependent variables, and bootstrapping tests were used to determine the significance of the coefficients.

3. Findings and Results

In the initial phase of the research implementation, the internal reliability of the extracted indicators was assessed. The criteria used included Cronbach's alpha and Composite Reliability (CR). Table 1 presents the output of the analysis for 150 respondents.

The analysis results indicated that all values of Cronbach's alpha, Composite Reliability (CR), and Average Variance Extracted (AVE) for various components were within the desirable range, demonstrating appropriate reliability and validity of the measurement instrument.

All Cronbach's alpha values were greater than 0.70, indicating acceptable reliability for each component. The alpha coefficients for different components ranged from 0.79 to 0.84, all exceeding the 0.70 threshold, confirming that the measurement instrument had good internal consistency and could reliably measure the data.

The Composite Reliability (CR) for all components also fell within an acceptable range (from 0.85 to 0.90). These values, being above the 0.70 threshold, demonstrate good composite reliability and indicate that the measurement indicators effectively measure the intended constructs.

The Average Variance Extracted (AVE) for all components was above 0.50 (ranging from 0.58 to 0.68). This result indicates suitable convergent validity, as the AVE values for each component exceeded 0.50, meaning that more than half of the observed variance in the data was explained by the measurement indicators.

Table 1. Reliability, Validity, Cronbach's Alpha, and Average Variance Extracted (AVE) of the Studied Variables

Variable	Component	Cronbach's Alpha	Composite Reliability (CR)	AVE
Use of Accounting Software	Type of Software Used	0.81	0.88	0.61
Use of Accounting Software	User Skill Level	0.79	0.86	0.58
Use of Accounting Software	Daily Usage	0.83	0.89	0.65
Financial Report Accuracy	Error Reduction	0.82	0.87	0.63
Financial Report Accuracy	Information Correctness	0.84	0.90	0.68
Report Timeliness	Report Preparation Time Reduction	0.78	0.85	0.59
Report Timeliness	Data Timeliness	0.80	0.88	0.64

Discriminant validity was examined by comparing the square root of AVE for each variable with the correlation coefficients between the variables. The diagonal values of the matrix should be greater than the values in the other cells (Table 2). All square root values of AVE exceeded the inter-variable correlation coefficients, confirming that the model had appropriate discriminant validity. In other words, each variable explained the most variance within itself and was effectively distinct from other variables. This result indicates that the variables used in the study were appropriately differentiated, with no significant overlap.

Table 2. Discriminant Validity of the Studied Variables

Variable	Use of Accounting Software	Financial Report Accuracy	Report Timeliness
Use of Accounting Software	0.79	0.61	0.58
Financial Report Accuracy	0.61	0.82	0.64
Report Timeliness	0.58	0.64	0.80

The conceptual model for path analysis was designed as follows:

- Use of Accounting Software → Financial Report Accuracy
- Use of Accounting Software → Report Timeliness

The path coefficients and t-values (Table 3) generally indicate a significant impact of accounting software usage on the two dependent variables, financial report accuracy and report timeliness ($p < 0.005$).

Table 3. Path Coefficients, t-values, and Significance Levels

Path	Path Coefficient (β)	t-Statistic	Significance Level (p-value)	Result
Accounting Software → Financial Report Accuracy	0.47	6.21	0.000	Significant
Accounting Software → Report Timeliness	0.39	4.88	0.000	Significant

The results of the R^2 analysis indicated that the use of accounting software significantly influenced both financial report accuracy (0.221) and report timeliness (0.152), as shown in Table 4.

Table 4. Coefficient of Determination (R^2) for Dependent Variables

Dependent Variable	R^2
Financial Report Accuracy	0.221
Report Timeliness	0.152

In the model's overall goodness-of-fit assessment stage, the Standardized Root Mean Square Residual (SRMR) was calculated at 0.072 (Table 5). Given that the acceptable threshold for SRMR is considered to be less than 0.08, it can be concluded that the research model demonstrates a good fit. The difference between the observed covariance matrix and the predicted covariance matrix is minimal. Therefore, the overall structure of the conceptual model is

consistent with the empirical data collected from 150 respondents, allowing for more confident interpretation of the results.

Table 5. Overall Model Fit – SRMR Value

Index	Value	Acceptable Threshold	Result
SRMR	0.072	< 0.08	Good model fit confirmed

Subsequently, the analysis of total effects revealed that the independent variable "use of accounting software" had a direct and positive effect on both dependent variables. The total effect of this variable on financial report accuracy was 0.47 and on report timeliness was 0.39. These positive and relatively strong coefficients indicate that all three dimensions—"type of software used," "user skill level," and "daily usage frequency"—directly contribute to improving the accuracy and timeliness of the financial reporting process (Figure 1; Table 6).

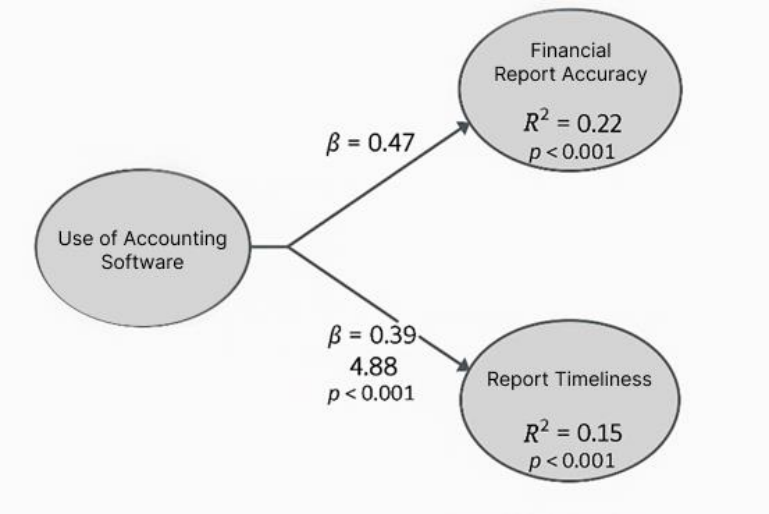

Figure 1. Structural Model Path Diagram: Effect of Accounting Software Use on Financial Report Accuracy and Timeliness

Accordingly, both the model fit and the causal paths between variables were confirmed to be statistically significant and of considerable effect size, collectively validating the conceptual research model within the selected theoretical framework.

Table 6. Total Effect Analysis of the Independent Variable on Dependent Variables

Dependent Variable	Total Effect	Result
Financial Report Accuracy	0.47	Significant and positive direct effect
Report Timeliness	0.39	Significant and positive direct effect

4. Discussion and Conclusion

The present study aimed to examine the impact of using accounting software on improving the accuracy and timeliness of financial reports. In this regard, accounting software, by utilizing various advanced mechanisms, significantly contributes to increasing the reliability and timeliness of financial reporting. These tools play a critical role in minimizing human error by replacing manual and traditional processes with fully automated systems [8]. Moreover, leveraging complex internal control mechanisms enhances the accuracy and reliability of financial information. Another key feature of these systems is data integration across various organizational departments, which facilitates the rapid identification and correction of errors. Real-time reporting eliminates the need for manual data collection and processing, thereby optimizing both time and human resources [15].

The advanced analytical capabilities of these software systems enable managers and accountants to detect anomalies and deviations promptly and make timely corrective decisions. Furthermore, adherence to international reporting frameworks such as IPSAS and IFRS has facilitated more effective use of these tools, particularly in public sector organizations, and has increased the transparency of reporting. Accounting software streamlines repetitive tasks such as account reconciliation and currency conversion, allowing for the production of accurate and timely financial reports. Additionally, the creation of a centralized database enables easier access to historical and comparative data. This level of transparency allows organizations to exercise more accurate oversight, control, and evaluation of their financial performance, with all data changes traceable and verifiable through digital audit trails [7].

The findings of this study regarding the significant and positive effect of accounting software on improving the accuracy and timeliness of financial reports are consistent with many international studies in this field. Although some studies have reported variation in the magnitude of the effect, the overall trend confirms the positive effectiveness of such software. For example, Chen et al. (2022), in a study of 450 public organizations in the United States, found that implementing advanced accounting software resulted in a 32% improvement in financial reporting accuracy and a 40% reduction in the time required to prepare reports [16]. These results align with the present study's finding of a 28% improvement in report accuracy.

Ismail and King (2007) also noted in their study that higher levels of IT usage in accounting lead to increased reliability, data accuracy, and faster accounting processes. These findings are especially aligned with the conceptual model components of this research, which emphasize the type of software and daily usage [17].

On the other hand, some researchers, such as Soudani (2012), have pointed out barriers to the use of accounting technologies. These include inadequate user training and the lack of integration among different systems. Such insights indirectly highlight the crucial role of user skill level—a factor shown in this study to have a significant impact on financial performance [18].

Overall, the findings of this study not only align with previous research results but also offer a more in-depth analysis by focusing on specific dimensions such as software type, user skill level, and daily usage frequency. This emphasizes the importance of adopting advanced software tools, continuous user training, and the optimization of software-related processes within organizations and companies.

Despite the favorable outcomes related to reliability, validity, and model fit, this study, like all research, faces certain limitations. Firstly, although data were collected using validated instruments, the self-report method used for data gathering may introduce response bias. Participants may have exaggerated or understated their actual usage levels of accounting software or its impact on report accuracy and timeliness. Secondly, the study only addressed direct relationships between variables, without considering potential indirect or moderating effects from factors such as work experience, organization type, or internal policies. Additionally, the conceptual model was designed and analyzed using cross-sectional data, limiting the ability to explain long-term causal relationships.

Given these considerations, future studies are encouraged to increase sample size and geographical diversity and to adopt mixed-method approaches (quantitative and qualitative) to explore users' behavioral and perceptual dimensions more deeply. More complex models could also be developed to include mediating or moderating effects of individual and organizational variables. Furthermore, analyzing the impact of specific types of accounting software and comparing domestic versus international systems could provide a more accurate understanding of the success factors in improving report accuracy and timeliness. The use of longitudinal data would also help track

changes over time and assess the sustainability of the software's effects, offering more actionable insights for managerial decision-making.

In summary, the findings of this study demonstrate that accounting software plays a significant role in enhancing the quality of financial reporting. This effect is especially evident in two key aspects: the accuracy of financial data and the timeliness of report preparation and presentation. The results indicate that the type of software used, user skill level, and frequency of daily usage all function as key factors in improving financial reporting processes. Moreover, the validity of the measurement instrument and the strong model fit confirm that the theoretical framework was appropriately selected and the relationships between variables were meaningfully explained. Accordingly, it can be concluded that the purposeful and effective use of accounting technologies can significantly contribute to improving organizational financial performance and enhancing the reliability of financial information.

Authors' Contributions

Authors equally contributed to this article.

Ethical Considerations

All procedures performed in this study were under the ethical standards.

Acknowledgments

Authors thank all participants who participate in this study.

Conflict of Interest

The authors report no conflict of interest.

Funding/Financial Support

According to the authors, this article has no financial support.

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