
The sophisticated role of accounting information system (AIS) on the performance of Small and medium-sized enterprises (SMEs): Evidence from an emerging economy

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ABSTRACT

This study aims to look into the sophisticated role of accounting information system (AIS) on the performance of Small and medium-sized enterprises (SMEs) in Pakistan. This study looks at how accounting information systems can help business entrepreneurs and employees by using it to improve the performance of SMEs. The prime goal of this paper is to look into how AIS boosts the performance of SMEs such as quality improvement (QI), cost-cutting (CC), and management productivity (MP). Questionnaires were used to obtain data from Pakistani SMEs related to different sectors such as manufacturing, trading, and services. A self-administered questionnaire was used in an online survey to collect data for the study. The statistical analysis was done and the study hypotheses were tested by using SMART PLS. The findings show that implementing of AIS has a positive role (result) on the inclusive performance of SMEs such as QI, CC, and MP. These findings give officials, entrepreneur, influencer, and management direction to concentrate on an accounting information system that improves performance of SMEs in emerging economy (Pakistan).

Keywords: Accounting Information System, Accounting Software, cost-cutting, Quality improvement, management productivity

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INTRODUCTION

An accounting information system (AIS) is technologies that can help firm management to improve operational oversight and growth of the firm (Ali, Bakar, & Omar, 2016; Alnajjar, 2017). AIS involve finding, collecting, processing, and disseminating accounting facts data to staff members, policymaker and influencer at multiple points of the enterprise. A second use for AIS is as a tool for keeping track of a firm's economic transactions. This system integrates procedures, controls, and accounting practices to monitor financial activities, offer data for internal and external reporting, assist in the creation of financial statements, and have the potential to enhance firm performance (Trabulsi, 2018). Historical imprint in today's fast-paced business environment, AIS appears to be out of date because it was predominantly a paper-based system. As a result of the information technology (IT) revolution, which has given IT and information systems (IS) applications the lead, organizations now work differently, especially in the area of accounting. The widespread adoption of such software enhances financial performance and transparency within firms and makes financial data perpetually accessible throughout the fiscal year (Melitski & Manoharan, 2014). AIS, according to Abdelraheem, Hussaien, Mohammed, and Elbokhari (2021), is made up of several operating functions that collect, process, categories, and report financial events. The AIS is examined in this study as a tool for keeping records, directing attention, and making decisions based on all pertinent financial data (Fitrios, 2016).

It is quite challenging to discern between small, medium, and large businesses. Researchers make a distinction between SMEs and large firms established on the quantity of employees, the amount of sales, and the asset worth. There is no precise threshold that separates SMEs and large firms based on the number of employees, despite the fact that this is the most usual approach to categories a business as small, medium, or large. SME definitions and requirements vary widely. For example, Fang (1971) defined a SME as a company with less than 100 employees. The entrepreneur is the focal point of most SME businesses. According to some scholars (Haksever, 1996; Wiele & Brown, 1998), small and medium-sized businesses are frequently characterized as having fewer than 500 employees. In addition, ownership, management, organizational structure, capital resources, goals, markets, and consumers are some of the features that set small and medium-sized firms apart from larger corporations (Haksever, 1996).

In the majority of modern nations, small and medium-sized firms (SMEs) are viewed as being essential to technological advancement, significant job potential, and economic growth (Bhutta, Rana, & Asad, 2008). In order to grow this industry, the Pakistani government created the Small and Medium Enterprise Authority in October 1998. A SMEs-Bank was also founded in Pakistan to finance this sector. The majority of commercial banks in the nation established dedicated divisions to serve the SME sector in the wake of the significant setbacks in the bigger industrial sector in the middle of the 1990s. Last but not least, practically all significant international donor organizations, including the World Bank and UNDP, have launched SME-related measures (Bhutta et al., 2008; Dar, Ahmed, & Raziq, 2017).

Businesses today are attempting to increase profit, quality, and market share by utilizing obtainable IT grabs. Accounting system is one of these tackles to achieve

such goals of firms. Accounting information system and its sophisticated role on firm has been the subject of various earlier studies (Ali et al., 2016; Kouser, Awan, Rana, & Shahzad, 2011). However, the majority of these researches have looked into this issue in the setting of big firms. The value of accounting information system in SMEs of Pakistan is challengeable. Taking into consideration the overall contribution of SMEs as the greatest economic backbone in a country, and indeed the key role that SMEs could play in creating job opportunities and promoting economic progress (Trabulsi, 2018). SMEs require establishing new business strategies to have latest technologies for achievement the targeted goals of firms (Chonsalasin & Khampirat, 2022). This study contends that SMEs must adapt to the competitive climate in which they now compete (North & Varvakis, 2016). They can't afford to fall behind in terms of information systems, especially accounting information system. However, any assertion made about this topic must be supported by evidence. As a result, this study, which is established on an empirical study, will aim to investigate the possible impact of AIS on performance of the SMEs in Pakistan.

This research paper is further organized in several sections: Section 02 evaluates pertinent literature and formulates theories regarding the connections between AIS, and performance of SMEs. The empirical methodology is described in Section 03. Results from the statistical analyses of the hypotheses are offered in Section 04. The discussions along with conclusion of this study are presented in section 05, together with information about its limitations and some recommendations for further research.

Literature

In recent years, evaluations of AIS's success and efficacy have consistently increased. Accounting information system (AIS) is a collection of interdependent activities, records, and technology for gathering, processing, and reporting data with the goal of reaching a certain conclusion (Hall, 2015). In the modern world, accounting information systems are an essential mechanism in the managers' hands endeavoring to conserve an economical advantage amongst the speedy improvement of machinery (technology), raised awareness, and demanding requirements from clients and firm owners (Budiarto & Prabowo, 2015). Accounting software that are well-integrated can produce a highly flexible information generating process, high-quality financial reports, and up-to-date data that helps an enterprise plan and make decisions (Thottoli, 2020). Apart from boosting the performance of business quality, cutting costs and management productivity, AIS is said to be adept of providing perfect and well-timed data on single command, aiding worldwide information, evolving exclusive reporting outfits, and assimilating key risks and business operations (Choiriah & Sudiby, 2020).

Verifiability assures clients that the supplied data accurately represents the complex trends it is supposed to reflect. Business and IT alignment is still a key concern for both business and technological professionals. The alignment of these two worlds among its multifaceted dimensions is extremely crucial for clinching entities. Due to its difficulty and complexity, completing this mission will undoubtedly necessitate new approaches, such as valuing labor incentives or the role of knowledge management in this synchronization (Belfo & Trigo, 2013; Thottoli, 2020). The knack of businesses to create and use hi-tech system to monitor and report economic transactions has had the most influence on accounting. Computer (IT) systems that can promptly contemporary transaction data into monetary information have substituted paper ledgers, manual workbooks, and handwritten financial statements.

The majority of widely used programs can also be customized for certain businesses or industries. Companies can now quickly and easily develop customized reports for decision (Ghasemi, Shafeiepour, Aslani, & Barvayeh, 2011). Additionally, successful application utilization can increase consumer satisfaction, which promotes trade success. Other advantages of AIS have been explored in the literature, such as improved quality, cost savings, quicker service, informed decisions, and more efficient information flow. AIS could help people obtain meaningful info that is well-timed, related, provable, and ingenious so they can make better decisions required now-a-days for enterprises (Al-Adaileh, 2008; Hameedi, Al-Fatlawi, Ali, & Almagtome, 2021).

According to Grande, Estébanez, and Colomina (2011), increasing the enterprise's external relations, new business opportunities, and better monetary information flow between categorized levels have substantially transformed the character of the business. As a result, traditional company functions or processes must be altered to meet the changing nature of operations. This research focuses on the AIS because it provides a high level of competitiveness, better administration of business activities, and an up a marketing of changing business environmental conditions for SMEs. A number of local and external elements that may hinder or facilitate the achievement of such significant advantages must be taken into consideration before acquiring them. The user's opinion of the utility of IS applications, including AIS, management support, IT infrastructure, IT skills, and cultural and professional culture are all potential influences. To evaluate the added value of AIS and its impact on key measures including quality improvement, cost-cutting, and management productivity, the core aim of this study is to analyze the sophisticated role of AIS on the performance of SMEs in Pakistan. AIS are an IT-based approach to monitoring and managing an organization's financial and operational activities. However, technology advancements have enabled SMEs to effectively use this approach (Alnajjar, 2017; Louadi, 1998; Nuseir & Aljumah, 2020).

The performance of SMEs in Greece and the relationship between foreign ownership are both examined by Halkos and Tzeremes (2010). The authors' primary data was gathered from a sample of 353 foreign SMEs. The results suggest that foreign ownership has a positive effect on Greek SMEs' performance. Antonioli, Mazzanti, and Pini (2011) investigate the connections in Italy between innovation, working conditions, labor relations, and employee outcomes. The study finds that industrial relations and techno-organizational innovation are elements that have a positive impact on working conditions. The quality of the workforce increases in direct proportion to management and union delegates' level of cooperation. A positive impact of innovative activities on workers' welfare is brought about through high-quality employment and working relationships. Kpurugbara, Akpos, Nwidiuduu, and Tams-Wariboko (2016) examine the relationship between AIS and effectiveness of SMEs in Woji (Portharcourt). A five-point Likert scale questionnaire was used to collect the data, and the non-parametric Kruskallis test was used to evaluate it. The results showed that accounting information systems improve management effectiveness and cost control by supporting rational decision.

Al-dhamari and Ku Ismail (2017) evaluated at how accounting information systems affected Iraq's petroleum industry's performance management. The data was gathered from the financial statements of the 10 Iraqi oil companies that contributed the most to the country's GDP between 2001 and 2018, and STATA was employed for the analysis. The findings demonstrate a positive relationship between the management's

Performance and the information accounting system. The impact of accounting information system implementation on performance, profitability, health, and efficiency of firms has been empirically studied in past studies in Iraq, UAE, South Africa, Malaysia, USA, Nigeria, Saudi Arabia, India, Jordan, Italy, Spain, Turkey, and Indonesia (ALAWAQLEH, 2021; Alnajjar, 2017; Amusawi, Almagtome, & Shaker, 2019; Awosejo, Kekwaletswe, Pretorius, & Zuva, 2013; Fagbemi & Olaoye, 2016; Grande et al., 2011; Harash, 2015; Ömer, 2016; Saeidi & Prasad, 2014; Soudani, 2012; Susanto & Meiryani, 2019; Taiwo, 2016; Trabulsi, 2018). However, scant research has been carried on the association between Pakistani SMEs' (Small and Medium-sized Enterprises) performance and their accounting information system. This research effort sought to address that knowledge gap as a solution.

Research Hypotheses

The following hypotheses are developed based on the preceding discussion and prior works of literature:

H₁: Accounting information system encourages the quality improvement in Pakistani SMEs.

H₂: Accounting information system significantly influences the cost-cutting in Pakistani SMEs.

H₃: Accounting information system significantly enhances the management productivity in Pakistani SMEs.

Conceptual model of the study

The conceptual framework elucidates the relationships between the variables and emphasizes the nexus between the accounting information system (AIS) and the performance of SMEs. Figure 1 depicts the conceptual model of the study. AIS (accounting information system) are the independent variable, whereas Performance measured Quality improvement, Cost-cutting & Management productivity by in this study.

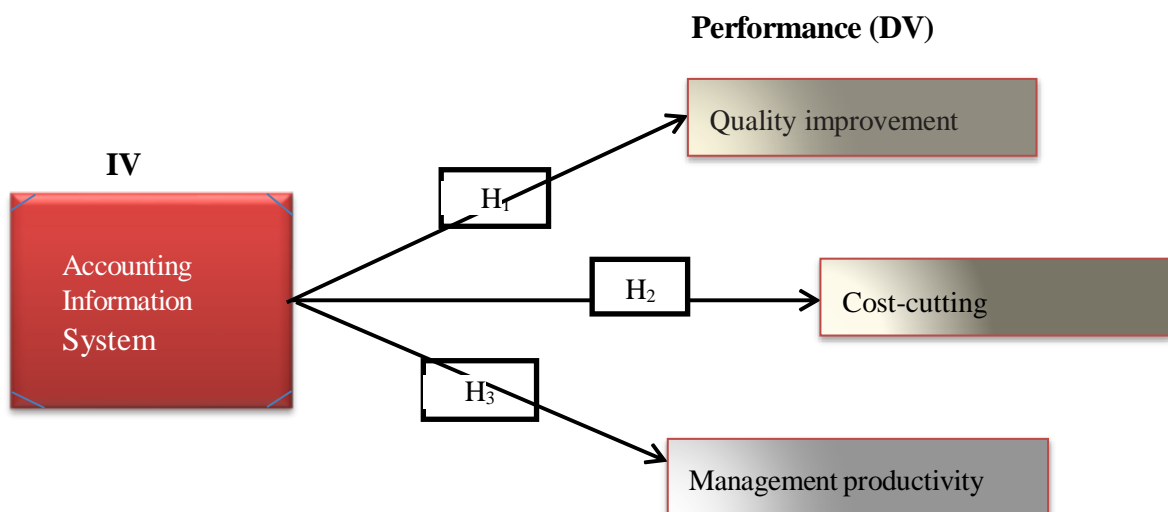


Figure 1 Conceptual framework

Research Methodology

Participants and data collection

The World Wide Web (Jones, Murphy, Edwards, & James, 2008) is a revolutionary instrument for data collection that also helps researchers save time and money contrast to conventional surveying techniques. The web platform has generally been acknowledged as a reliable source of data for scholarly research (Braun, Clarke, Boulton, Davey, & McEvoy, 2021; Djafarova & Rushworth, 2017; Flint et al., 2022). A self-administered questionnaire was used in an online survey to collect data for the study. However, the survey was only accessible to those who resided in Pakistan and were at least eighteen years old. A screening question was asked before to the main survey in order to identify potential survey participants whose behavior has altered because of secrecy. 100 replies were received, with 79 percent of them coming from men and 21 percent from women.

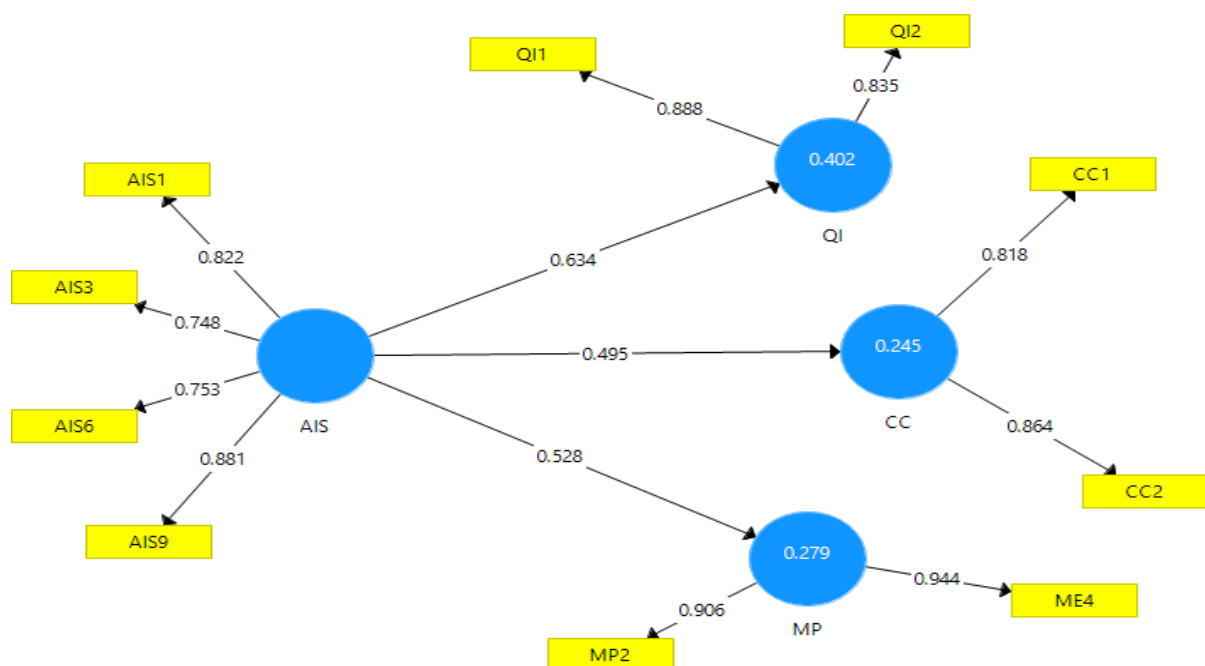
Survey Instruments

AIS, quality improvement, cost-cutting, and management productivity are the four key constructs of this study (Kpurugbara et al., 2016). To measure item response, a five-point Likert scale from 1 to 5 was employed. According to Nemoto and Beglar (2014), one of the most well-known survey questions is the Likert scale (Yusof et al., 2019). The strategy of agreeing or disagreeing is frequently employed in academic studies to judge attitudes. It also enables the researcher to easily get data from a large number of respondents (Kuhlmann, Dantlgraber, & Reips, 2017).

Statistical technique

Following Ringle, Da Silva, and Bido (2015), this study employed the PLS-SEM method with the aid of SmartPLS software to test the study's hypotheses. According to the stated prose, the valuations were completed in two steps using the measurement model and the structural model.

Figure 2: Measurement model



Result and Discussion

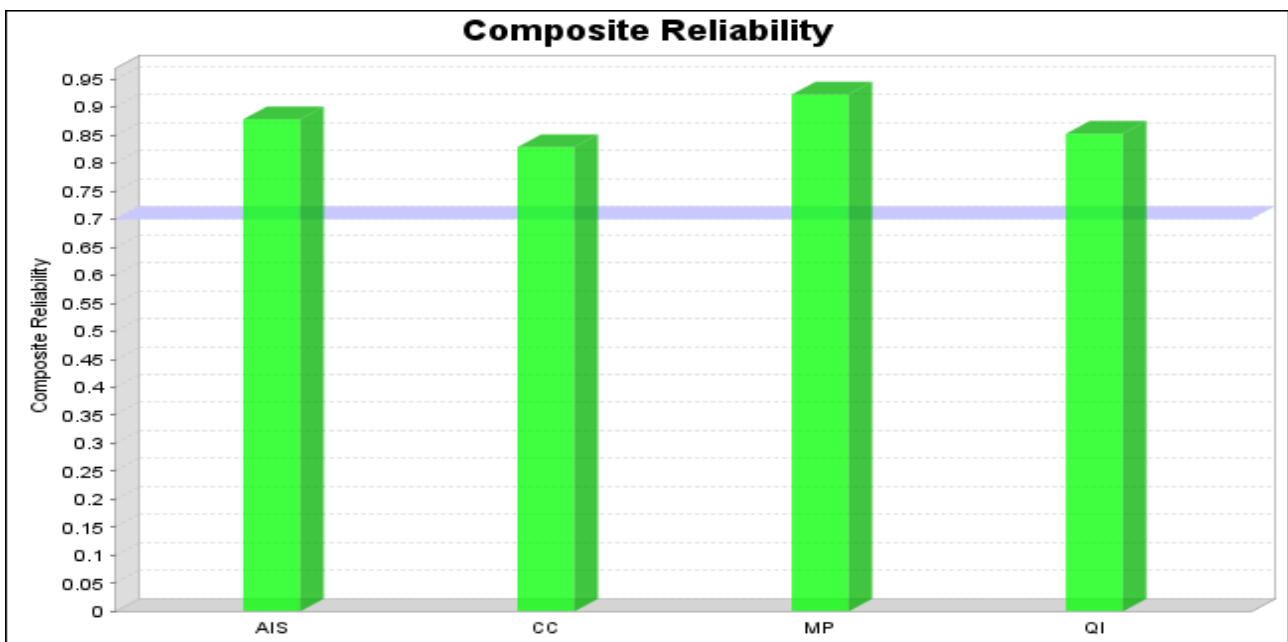
Measurement Model

The dependability of each construct was examined to make sure that all the items measure the corresponding constructs. Cronbach's alpha, Rho A, Composite Reliability (CR), and Average Variance Extracted (AVE) values are displayed in Table 1. The constructs in this study model have Cronbach's alpha values ranging from 0.816 to 0.912, which are higher than the minimum required values of 0.7 and indicate strong reliability. The rho_A values are between 0.825 and 0.917 points higher than the threshold of 0.70. The composite reliabilities are between 0.829 and 0.922 points higher than the threshold of 0.70 that is considered acceptable. The constructs in this study model have AVE values ranging from 0.645 to 0.856, which are greater than the minimum suggested values of 0.5 and indicate high reliability. These findings, which are represented in table 1, proved that constructs had to have a high degree of internal consistency.

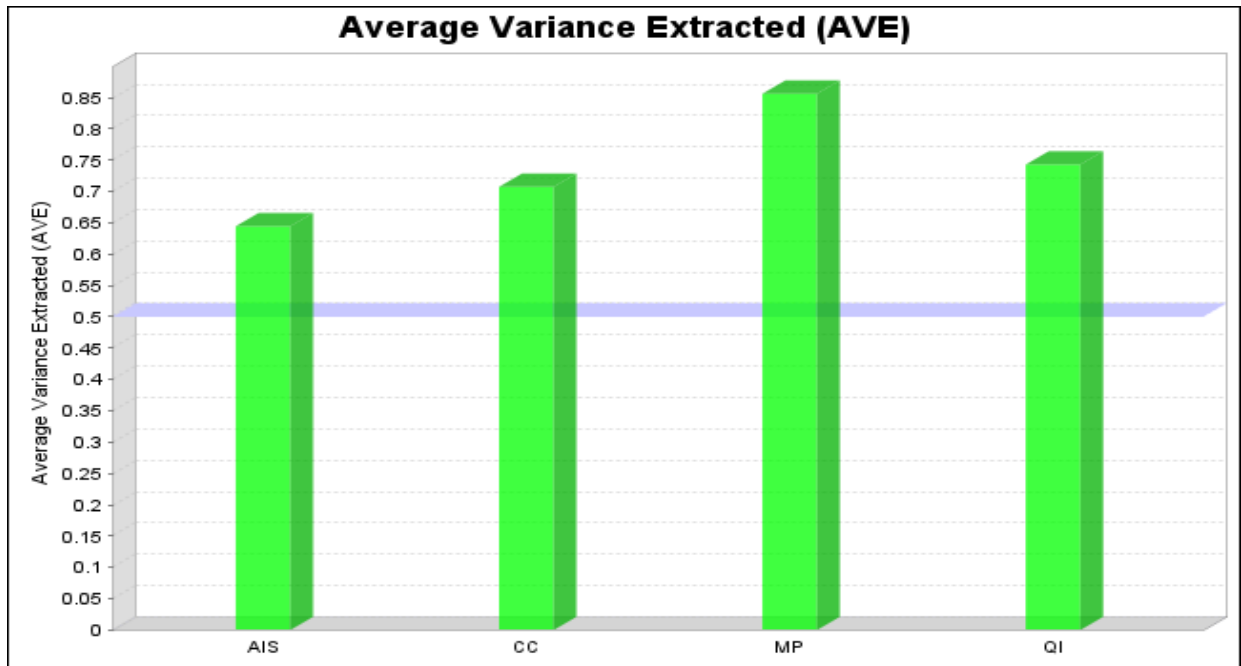
Table 1: Constructs validity (CV) & Reliability (CR)

	Cronbach's Alpha	rho_A	CR	AVE
AIS	0.816	0.841	0.878	0.645
CC	0.818	0.825	0.829	0.707
MP	0.834	0.871	0.922	0.856
QI	0.912	0.917	0.852	0.743

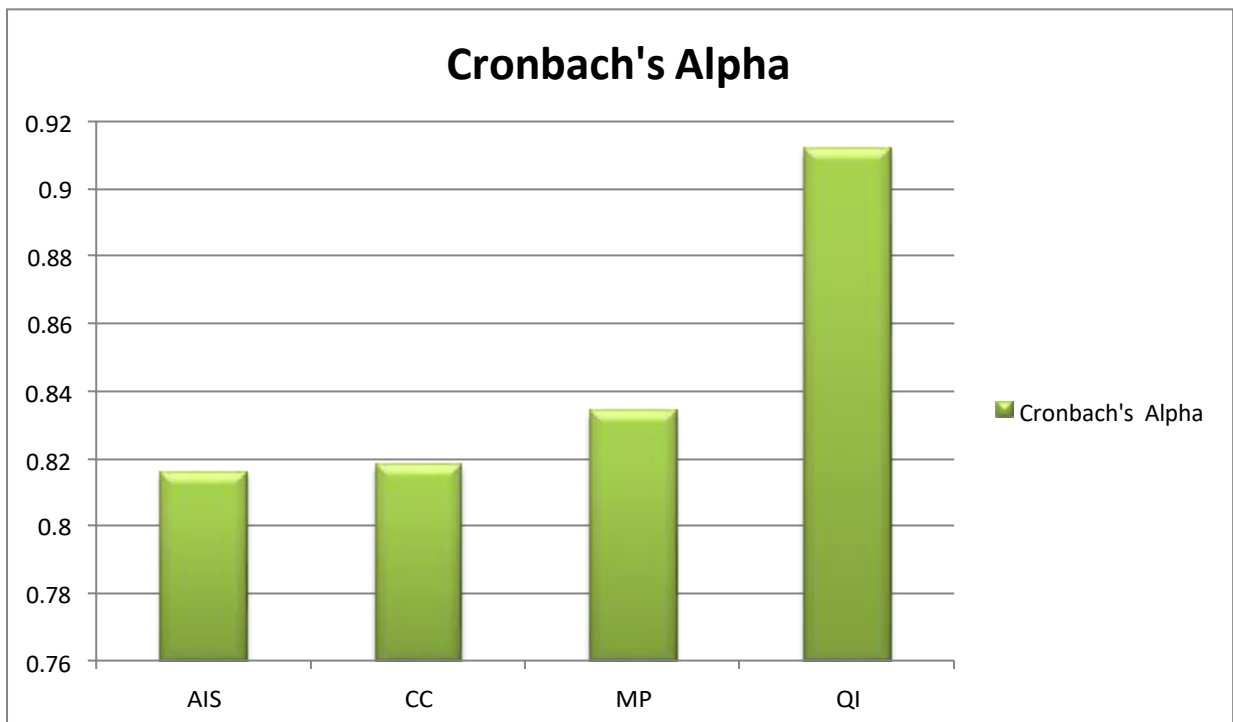
Bar Graph 1: Composite Reliability



Bar Graph 2: Average Variance Extracted



Bar Graph 3: Cronbach's Alpha



Bar Graph 4: rho_A

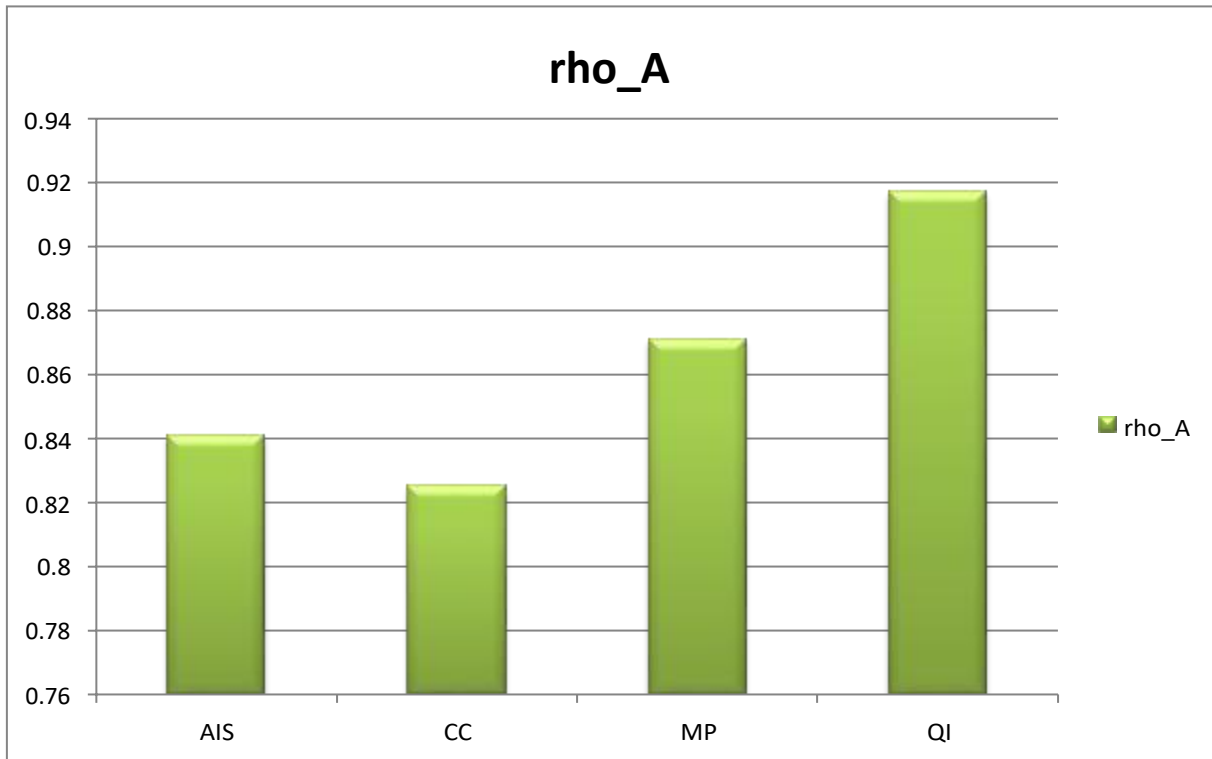


Table 2: The Fornell-Larcker criterion

	AIS	CC	MP	QI
AIS	0.803			
CC	0.495	0.841		
MP	0.528	0.335	0.925	
QI	0.634	0.408	0.342	0.862

To evaluate the discriminant validity (validity) of the study model, the Fornell-Larcker criterion is performed. The first stage in verifying discriminant validity is assessing whether the squared correlation coefficients between constructs are greater than the AVE of each construct. In Table 2, the values of the AVE square root are exhibited on the diagonal, while the remaining rows reveal correlations between various components. Additionally, a Heterotrait-Monotrait (HTMT) index was created. There must be a lower HTMT ratio than 0.85 to meet the criteria for discriminant validity (Henseler, Ringle, & Sarstedt, 2015; Rasoolimanesh, 2022). All HTMT values less than 0.85 are displayed in Table 3 as given below.

Table 3: The Heterotrait-Monotrait ratio

	AIS	CC	MP	QI
AIS				
CC	0.715			
MP	0.623	0.455		
QI	0.836	0.645	0.437	

We also looked at the cross-loadings. Each measurement item should load the associated construct the most, as seen in Table 4 where cross-loadings on each measurement item's construct are greater than cross-loadings on other constructs (Zhang, Luo, Sun, Cao, & Drasgow, 2021). Because of this, the constructs in this study showed strong evidence of reliability as well as convergent and discriminant validity. The research hypothesis would next be put to the test by looking at the structural model.

Table 4: Cross loadings

	AIS	CC	MP	QI
AIS1	0.822	0.291	0.331	0.610
AIS3	0.748	0.372	0.449	0.345
AIS6	0.753	0.500	0.371	0.343
AIS9	0.881	0.432	0.525	0.677
CC1	0.387	0.818	0.174	0.362
CC2	0.442	0.864	0.376	0.327
ME4	0.541	0.366	0.944	0.369
MP2	0.423	0.239	0.906	0.251
QI1	0.593	0.435	0.389	0.888
QI2	0.494	0.253	0.182	0.835

Structural model out put

Before testing the hypothesis relationship in the study structure model for the possible issue of collinearity the VIF values were examined and the obtained values were less than recommended value of 1.2. The hypothesis was tested using the bootstrapping technique with 2,000 subsamples. Figure 2 and Table 6 depict the results.

Table 5: Collinearity Statistics (VIF)

	VIF
AIS1	2.285
AIS3	1.630
AIS6	1.678
AIS9	2.526
CC1	1.210
CC2	1.210
ME4	2.050
MP2	2.050
QI1	1.314
QI2	1.314

Table 6: Results of Hypothesis testing

	Original Sample (O)	\bar{x}	σ	T-Value	P Values
AIS -> Cost-cutting	0.495	0.51 1	0.074	6.668	0.000
AIS -> Management productivity	0.528	0.53 3	0.075	7.046	0.000
AIS -> Quality improvement	0.634	0.64 2	0.054	11.782	0.000

Findings of path coefficients for the study's hypothesis have been shown in Table 6. The findings demonstrate that there is now a statistically significant association between the variables for AIS->CC ($\beta = 0.495$, P Value = 0.000), AIS -> MP ($\beta = 0.528$, P Value = 0.000), AIS -> QI ($\beta = 0.634$, P Value = 0.000). Thus, The findings of this study support the formulated hypothesis as well as the results reported by Kpurugbara et al. (2016) and Trabulsi (2018).

Discussion and Conclusion

This study developed a conceptual model better understand these interrelationships between accounting information system and performance of SMEs in emerging economy (Pakistan). As per prior research in the literature, the use of AIS may be a reliable predictor of the performance of Pakistan's SMEs (Harash, 2015; Trabulsi, 2018). Notably in terms of cost cutting, the data demonstrate that the AIS has significantly positive influence on cutting costs, aligning with earlier findings in the literature (Beg, 2018; Kpurugbara et al., 2016). The management productivity in SMEs is strongly impacted by AIS adoption. Similar to earlier studies, AIS tools will probably assist an organization in improving its general quality (Al-Delawi & Ramo, 2020; Kpurugbara et al., 2016; Trabulsi, 2018). Last but not least, the study found that

adopting an accounting information system can enhance SMEs' quality, which is consistent with the study of Teru, Idoku, and Ndeyati (2017). The study comes to the conclusion that accounting information should receive more attention as a tool for improving SMEs' performance. This seems essential to gaining a competitive advantage in a climate of highly competitive and alluring enterprises. But given the rapidly evolving technical landscape, AIS should be viewed as a moving target where constant improvement is crucial to adjusting to the dynamic nature of such systems. The management's continued support is required to increase the investment figures in AIS, and management awareness and willingness appear to be crucial. These results provide policymakers, business owners, and management with guidance on how to focus on an accounting information system that boosts SMEs' performance in Pakistan.

Limitation and Future Research

This study came to the conclusion that the excellent performance of the SMEs in Pakistan was due to the implementation of a genuine accounting information system across all of their activities. This study advised enterprises to use an accounting system that achieves competitive advantages throughout all enterprise activities. This study advises entrepreneurs to concentrate on implementing accounting software (AIS) in order to improve the performance of SMEs in all aspects.

This study has some shortcomings that could serve as future directions for additional research, such as the fact that it only considers the top SMEs financial performance measures while ignoring all others. It is recommended that future studies take this aspect into account for further work thereon. Due to the study's limited scope, the results are also extended only to some SMEs in Pakistan, and it is advised that future research broaden its scope by including more big firms, a larger sample size, and more countries in its analysis. This study only examined the nexus between AIS and the performance of Pakistani SMEs and it is suggested that future studies may use moderating and mediating effects on their nexus. Additionally, this study only used data analysis methods, including SmartPLS3, and it is suggested that future studies use STATA, GMM, and SPSS instead.

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