

Proposing a Model of Management Accountants' Networking and Strategic Management Accounting with the Moderating Role of Information System Quality

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Abstract: The purpose of this study is to examine the effect of management accountants' networking on the implementation of strategic management accounting (SMA) techniques and to investigate the moderating roles of information system quality and organizational culture in healthcare organizations in the country. This research is quantitative and descriptive-analytical in nature. The statistical population consists of managers and accountants working in the country's healthcare organizations. A cluster random sampling method was employed, and data were collected through a standardized questionnaire. Data analysis was conducted using descriptive statistics, confirmatory factor analysis (CFA), and partial least squares structural equation modeling (PLS-SEM). The results revealed that management accountants' networking has a positive and significant effect on the implementation of strategic management accounting techniques. Furthermore, information system quality and a result-oriented organizational culture play positive and significant moderating roles in strengthening this relationship. However, an innovation-oriented organizational culture did not have a significant effect on this relationship. Additionally, the control variables—competition and environmental uncertainty—had positive and significant effects on the implementation of SMA techniques, whereas service diversity showed no significant effect. The reliability and validity indices of the constructs, including Cronbach's alpha, composite reliability, and average variance extracted (AVE), indicated the validity and reliability of the measurement instruments. The findings emphasize that management accountants' networking and the enhancement of information system quality can serve as effective strategies to improve the efficiency of strategic management accounting technique implementation. Moreover, fostering a result-oriented organizational culture can strengthen the impact of strategic management actions within healthcare organizations.

Keywords: Management accountants' networking, strategic management accounting techniques, information system quality, organizational culture, healthcare organizations

1. Introduction

In recent years, management accounting has undergone a profound transformation, shifting from a narrowly defined internal control tool toward a strategic partner in organizational decision-making. This transformation has been largely driven by increasing environmental complexity, competitive pressures, and rapid technological advancement, all of which demand more dynamic, networked, and information-driven forms of control and coordination [1-3]. Strategic management accounting (SMA), as an evolved branch of management accounting, integrates strategic analysis, performance evaluation, and external competitive intelligence to enhance

organizational agility and long-term competitiveness [4-6]. Within this framework, the roles of *management accountants' networking* and *information system quality* have become pivotal, facilitating knowledge exchange, collaboration, and strategic alignment across organizational and inter-organizational boundaries [1, 7, 8].

The concept of *networked management accounting* emphasizes the embeddedness of accountants in collaborative structures, extending beyond traditional intra-firm activities to encompass interactions across strategic alliances, partnerships, and value networks [7, 8]. These network relationships foster shared learning, mutual adaptation, and knowledge transfer, enabling the co-creation of strategic value [1, 6]. In dynamic and uncertain environments, such as healthcare organizations, management accountants' networking helps enhance responsiveness to environmental shifts and facilitates strategic coordination among functional units [9, 10]. The relational dimension of accounting practices, therefore, becomes essential to align decision-making processes with long-term strategic objectives [3].

In parallel, *information system quality (ISQ)* serves as the backbone of effective management accounting and strategic decision-making. High-quality information systems improve data accuracy, timeliness, accessibility, and relevance—factors that directly influence managerial performance and organizational learning [11-13]. In this context, the DeLone and McLean model of information systems success provides a foundational framework, emphasizing that system quality and information quality jointly determine user satisfaction and performance outcomes [11]. When integrated into management accounting, superior ISQ enhances analytical capability, supports the execution of SMA techniques, and enables real-time control in dynamic markets [2, 14, 15].

Healthcare organizations, in particular, represent a critical testing ground for such integrative frameworks. They operate in environments characterized by high uncertainty, stringent regulatory demands, and complex stakeholder networks [2, 10]. Implementing SMA techniques in this context requires not only technical sophistication but also collaborative coordination across financial, clinical, and administrative units. The effectiveness of SMA in healthcare thus depends on both the *networking capabilities* of management accountants and the *quality of their supporting information systems* [12, 16]. These two elements jointly enhance the organization's strategic responsiveness, operational efficiency, and performance measurement accuracy [6, 17].

The evolution of SMA research highlights a growing interest in understanding contextual and moderating factors that influence its implementation and outcomes. Early contingency theory perspectives argued that management accounting systems must adapt to environmental conditions, technological complexity, and organizational structure [3, 5]. Recent studies, however, suggest that inter-organizational collaboration and information integration mechanisms serve as more significant enablers of SMA success [1, 7]. As firms increasingly operate within digital ecosystems and networked supply chains, management accountants must shift from data custodians to strategic connectors who translate complex data into actionable strategic insights [18, 19].

The digitalization of accounting practices further reinforces this transformation. Emerging technologies such as big data analytics, artificial intelligence (AI), and the Internet of Things (IoT) have revolutionized how management accountants collect, analyze, and interpret information [18, 20, 21]. These intelligent systems provide predictive and prescriptive insights that strengthen SMA's decision-support function, enabling organizations to anticipate environmental changes and optimize strategic resource allocation [22, 23]. The integration of such technologies also requires robust ISQ, as poor-quality data or system misalignment can undermine decision reliability and strategic agility [12, 13].

In emerging economies, including Middle Eastern and Asian contexts, challenges such as weak information infrastructure, fragmented organizational cultures, and insufficient management training often hinder the adoption

of SMA practices [15, 17]. However, growing evidence suggests that strengthening information systems and encouraging inter-organizational collaboration can significantly improve strategic decision-making in such contexts [10, 14]. These findings underscore the importance of contextual adaptation when developing SMA frameworks for public and semi-public sectors, especially in healthcare systems facing pressure to balance efficiency, equity, and quality [2, 9].

Cultural dimensions also play a crucial role in determining the success of SMA and network-based accounting practices. A result-oriented organizational culture fosters performance accountability and strategic focus, reinforcing the effectiveness of management accountants' networking in implementing SMA techniques [2, 6]. In contrast, innovation-oriented cultures emphasize adaptability and continuous learning, which enhance experimentation and digital transformation in accounting systems [5, 20]. The balance between these cultural orientations can significantly influence how organizations interpret and apply accounting information for strategic control [4, 16].

The moderating role of information system quality is especially vital in ensuring that management accountants' networking effectively translates into strategic accounting performance. When ISQ is high, information flows are reliable, cross-functional communication is enhanced, and decision-makers can align operational data with strategic objectives [11, 13]. Conversely, low-quality systems may distort or delay information, weakening the coordination and trust necessary for network-based collaboration [12, 14]. As such, ISQ acts as both a technological and social infrastructure that conditions the success of SMA within networked organizational contexts [1, 2].

Emerging studies within the Iranian and broader regional contexts also highlight the growing importance of integrating SMA with high-quality information systems to improve organizational productivity and transparency [21, 24, 25]. Strategic management accounting models in Iran's healthcare sector have shown that enhancing ISQ can strengthen managerial decision-making and accountability structures [26, 27]. Furthermore, technological integration in accounting systems supports not only efficiency but also sustainability and resilience—core principles of modern organizational management [25, 28].

The dynamic interaction between networked management accounting and information system quality thus represents a crucial frontier in contemporary research. Network-based collaboration enables knowledge diffusion and fosters relational trust, while high-quality information systems provide the digital foundation for accurate, timely, and strategically relevant information [1, 2, 7]. Together, these elements determine the extent to which SMA techniques can be effectively implemented to enhance strategic alignment, innovation, and performance [3, 5, 6].

Building upon this theoretical foundation, the present study aims to examine the effect of management accountants' networking on the implementation of strategic management accounting techniques in healthcare organizations, with a particular focus on the moderating role of information system quality.

2. Methodology

This study was conducted with the aim of proposing a model of management accountants' networking and strategic management accounting (SMA) with the moderating role of information system quality. Since the main objective of the research is to explain the relationships among the mentioned variables and to empirically test the proposed conceptual model, a quantitative approach and a survey research method were employed. The survey method enables the researcher to collect field data and analyze the relationships among variables, thereby gaining a deeper understanding of the mechanisms through which management accountants' networking influences the implementation of strategic management accounting techniques within the context of information system quality.

From the perspective of purpose, this research falls under the category of applied and developmental studies, as its findings not only contribute to the expansion of theoretical knowledge in the field of management accounting but can also improve strategic decision-making and enhance the performance of information systems in public sector organizations, particularly in the national healthcare system.

The research process was designed in three main stages. In the first stage, the theoretical foundations and empirical background related to management accountants' networking, strategic management accounting techniques, and information system quality were reviewed through a library-based study. During this stage, key concepts, indicators, and dimensions of the variables were identified, and the conceptual framework of the research was developed. Based on this framework, the data collection tool—a questionnaire—was designed to allow for the accurate measurement of model variables and testing of the research hypotheses. In the second stage, field data were collected by distributing the questionnaires among members of the statistical population. The research population consisted of all management accountants and financial managers working in public healthcare organizations, who play key roles in the design and implementation of information systems and strategic decision-making processes. Due to the large size of the population and the lack of precise statistics on its total number, a cluster sampling method was adopted to ensure the inclusion of representatives from various organizations across different regions of the country. Accordingly, the provinces of Tehran, Isfahan, Fars, Khorasan Razavi, Mazandaran, West Azerbaijan, Khuzestan, and Sistan and Baluchestan were selected as research clusters. In total, 384 questionnaires were distributed, and after data screening and the removal of incomplete responses, 213 valid questionnaires were retained for final analysis.

In the third stage, the collected data were analyzed using SmartPLS software version 3 to examine the relationships among the variables in the conceptual model. At this stage, both the measurement model and the structural model were tested, and the path coefficients among the main variables—management accountants' networking, implementation of strategic management accounting techniques, and information system quality—were analyzed. To evaluate the validity and reliability of the measurement tool, Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE) indices were used. The results indicated that all variables possessed acceptable levels of convergent validity and reliability. To assess discriminant validity, the HTMT index and the Fornell and Larcker (1981) matrix were applied, confirming the discriminant validity of the constructs.

Given that information system quality was considered a moderating variable in this study, the structural model was designed to test both the direct effect of management accountants' networking on the implementation of strategic management accounting techniques and the interactive effect of information system quality on this relationship. Accordingly, the moderating effect of information system quality was assessed using the interaction approach in PLS to determine the extent to which a high level of information system quality could strengthen the relationship between management accountants' networking and the implementation of strategic management accounting techniques.

From a scope perspective, this research encompasses three dimensions. The **subject scope** involves the examination and explanation of the model of management accountants' networking and strategic management accounting with the moderating role of information system quality in public sector organizations. The **spatial scope** pertains to public healthcare organizations in the country. The **temporal scope** covers the first half of 2024. The data collection instrument was a researcher-developed questionnaire whose items were designed based on previous studies and validated international models, using a five-point Likert scale. The questionnaires were distributed to

respondents through in-person delivery, postal mail, and email. After collection, the data were coded and entered into SmartPLS for analysis.

3. Findings and Results

In this study, eight constructs (variables) were examined, including: management accountants' networking (independent variable), strategic management accounting techniques (dependent variable), information system quality (moderating variable), innovation-oriented organizational culture (moderating variable), result-oriented organizational culture (moderating variable), competition (control variable), perceived environmental uncertainty (control variable), and service diversity (control variable).

Table 1. Descriptive Statistics of Research Constructs

Construct	Theoretical Range	Actual Range	Mean	Std. Deviation	t-Statistic	Significance Level
MAN	(1–7)	(2.375–6.750)	5.197	1.040	30.826	0.000
SMAP	(1–8)	(2.083–6.667)	4.843	0.909	5.508	0.000
ISQ	(1–7)	(2.4–7)	4.269	1.135	16.323	0.000
IC	(1–7)	(1.6–6.8)	4.557	1.100	20.657	0.000
OC	(1–7)	(1.4–6.8)	4.835	0.992	26.992	0.000
PEU	(1–7)	(1.75–6.75)	4.771	0.964	26.798	0.000
Com	(1–7)	(2.2–7)	5.235	1.183	27.570	0.000
PD	(1–7)	(1.5–7)	4.279	1.411	13.232	0.000

According to the data in Table 1, the highest mean among the research constructs belongs to the competition variable, indicating a significant level of competition among healthcare organizations in the country. The descriptive statistics related to the strategic management accounting techniques variable show that in some healthcare organizations, the level of adoption of these techniques is very low, while in others it is relatively high (based on the minimum and maximum values of the actual range). Overall, the level of adoption of these techniques is approximately moderate. The highest standard deviation among the constructs belongs to the service diversity variable, indicating that the range of services provided by the studied organizations varies considerably from the perspective of management accountants and financial managers. This variation is natural, as some hospitals specialize in specific areas (e.g., burn centers, psychiatric hospitals, and maternity hospitals), while others provide a wide range of medical services. The t-statistic values for all constructs indicate that their means differ significantly from the midpoint (value 4, which represents the theoretical midpoint, and for SMA techniques, value 4.5), implying that most constructs are at a desirable level.

Before testing the research models and running the structural equation model, the factor loadings for each indicator (questionnaire item) of the constructs were calculated. Factor loadings below 0.40 were considered unsuitable, and such indicators were removed from the analysis to preserve convergent validity.

As shown in the corresponding table and figure, all calculated factor loadings exceeded 0.40; therefore, the indicators were satisfactory, and none required elimination.

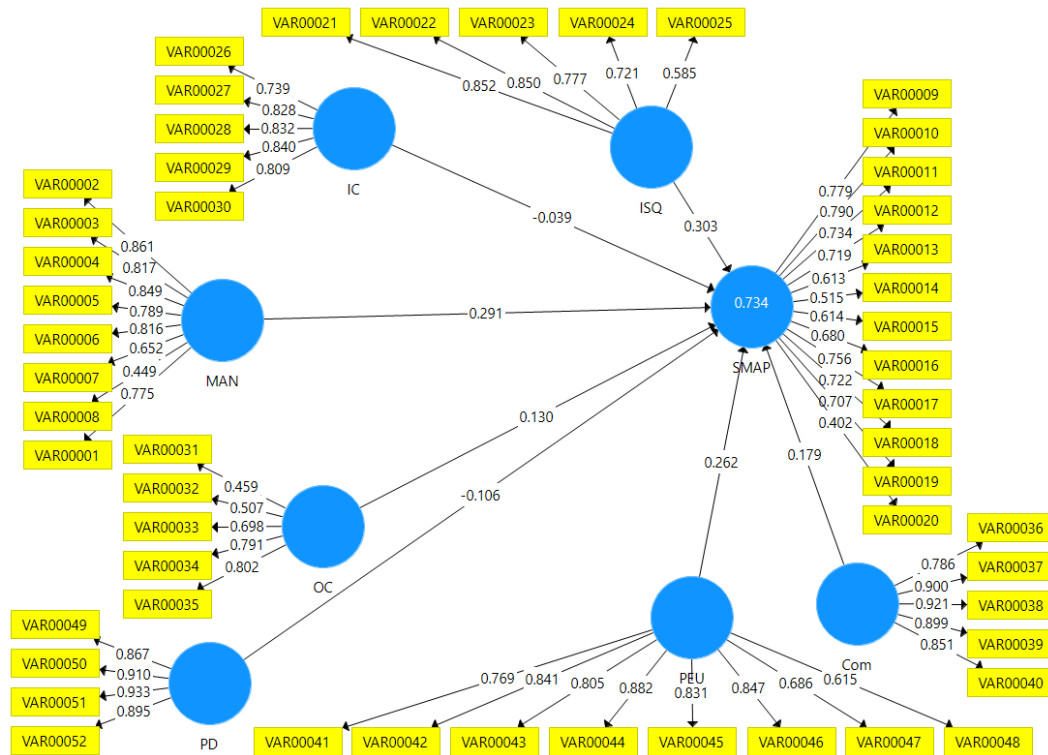


Figure 1. Results of Confirmatory Factor Analysis (CFA) for Research Constructs

After assessing the factor loadings of each indicator, the validity and reliability of the studied constructs were examined to ensure the dependability of the findings. In addition to the factor loadings of each indicator, the composite reliability coefficient (ρ_c) for each construct is reported. According to Hair et al. (2011), if the composite reliability coefficient exceeds 0.70, there is no reliability issue. Based on the obtained data, the composite reliability scores for all eight constructs in this study are greater than 0.70, indicating satisfactory reliability. Therefore, based on this index, it can be concluded that there are no issues concerning convergent validity.

Table 2. Results of Confirmatory Factor Analysis and Composite Reliability of Research Constructs

Constructs / Indicators	Factor Loading	Composite Reliability	Constructs / Indicators	Factor Loading	Composite Reliability
Management Accountants' Networking		0.915	Innovation-Oriented Organizational Culture		
MAN-1	0.775		IC-1	0.739	
MAN-2	0.861		IC-2	0.828	
MAN-3	0.817		IC-3	0.832	
MAN-4	0.849		IC-4	0.840	
MAN-5	0.789		IC-5	0.809	
MAN-6	0.816		Result-Oriented Organizational Culture		0.792
MAN-7	0.652		OC-1	0.459	
MAN-8	0.449		OC-2	0.507	
Strategic Management Accounting Techniques		0.909	OC-3	0.698	
SMAP-1	0.779		OC-4	0.791	
SMAP-2	0.790		OC-5	0.802	
SMAP-3	0.734		Competition		0.941
SMAP-4	0.719		Com-1	0.786	
SMAP-5	0.613		Com-2	0.900	

SMAP-6	0.515	Com-3	0.921	
SMAP-7	0.614	Com-4	0.899	
SMAP-8	0.680	Com-5	0.851	
SMAP-9	0.756	Perceived Environmental Uncertainty		0.929
SMAP-10	0.722	PEU-1	0.769	
SMAP-11	0.707	PEU-2	0.841	
SMAP-12	0.402	PEU-3	0.805	
Information System Quality	0.873	PEU-4	0.882	
ISQ-1	0.852	PEU-5	0.831	
ISQ-2	0.850	PEU-6	0.847	
ISQ-3	0.777	PEU-7	0.686	
ISQ-4	0.721	PEU-8	0.615	
ISQ-5	0.585	Service Diversity		0.946
		PD-1	0.867	
		PD-2	0.910	
		PD-3	0.933	
		PD-4	0.895	

In Table 2, the results related to Cronbach's alpha, composite reliability (Q_a), and average variance extracted (AVE) tests are presented to evaluate the reliability and convergent validity of the research constructs. Cronbach's alpha was used to assess the internal consistency of the constructs. Based on the data presented, the Cronbach's alpha values for all constructs are greater than 0.70, indicating a very satisfactory level of reliability.

Furthermore, the composite reliability (Q_a) and average variance extracted (AVE) tests were used to assess convergent validity. According to the results shown in Table 3, since the values of composite reliability (Q_a) exceed 0.70 and the AVE values are greater than 0.50, it can be concluded that the model possesses appropriate convergent validity and measurement adequacy.

Table 3 Results of Reliability and Convergent Validity Analysis of Research Constructs

Constructs	Cronbach's Alpha	Q_a	AVE
Management Accountants' Networking	0.890	0.896	0.581
Strategic Management Accounting Techniques	0.890	0.903	0.560
Information System Quality	0.815	0.825	0.583
Innovation-Oriented Organizational Culture	0.869	0.872	0.657
Result-Oriented Organizational Culture	0.766	0.782	0.545
Service Diversity	0.923	0.926	0.813
Perceived Environmental Uncertainty	0.912	0.920	0.623
Competition	0.921	0.924	0.761

To assess discriminant validity, both the Fornell and Larcker (1981) matrix and the HTMT (Heterotrait-Monotrait ratio) criterion were used in this study. Table 4 presents the results of the Fornell and Larcker (1981) matrix. According to this table, the square roots of the AVE values, represented on the diagonal, are greater than the correlations among the constructs (the off-diagonal elements in each column). This finding confirms the discriminant validity of the constructs based on the Fornell and Larcker (1981) criterion.

Additionally, the table provides information on the correlations among constructs, as the values below the diagonal represent the correlation matrix of the research variables. As shown, there are generally positive and relatively strong correlations among most variables. The highest correlation is observed between strategic

management accounting techniques and perceived environmental uncertainty ($r = 0.771$), while the lowest correlation is found between competition and result-oriented organizational culture ($r = 0.363$).

Table 4. Results of Discriminant Validity Analysis Using the Fornell and Larcker (1981) Matrix

	Com	IC	ISQ	MAN	OC	PD	PEU	SMAP
Com	0.873							
IC	0.521	0.810						
ISQ	0.412	0.558	0.764					
MAN	0.651	0.501	0.549	0.762				
OC	0.363	0.624	0.615	0.448	0.738			
PD	0.452	0.585	0.724	0.474	0.583	0.902		
PEU	0.769	0.603	0.640	0.634	0.639	0.628	0.789	
SMAP	0.673	0.546	0.675	0.729	0.593	0.580	0.771	0.748

In addition to the Fornell and Larcker (1981) matrix, the HTMT criterion was also employed to assess discriminant validity. This index, introduced by Henseler et al. (2015), is one of the most recent and robust measures for evaluating discriminant validity. Table 5 presents the results of the HTMT index. Since the calculated HTMT values are below the threshold of 0.90, it can be concluded that the measurement instrument used in this study demonstrates adequate discriminant validity.

Table 5. Results of Discriminant Validity Assessment Using the HTMT Criterion

	Com	IC	ISQ	MAN	OC	PD	PEU
IC	0.588						
ISQ	0.469	0.659					
MAN	0.719	0.574	0.647				
OC	0.457	0.787	0.858	0.574			
PD	0.490	0.642	0.833	0.525	0.751		
PEU	0.812	0.684	0.767	0.694	0.836	0.716	
SMAP	0.725	0.579	0.785	0.817	0.758	0.624	0.835

It is noteworthy that, to enhance the trustworthiness of the findings, the model was estimated and evaluated using 500 bootstrap samples.

After establishing the reliability and validity of the constructs in the research model, the structural model and its related hypotheses were tested. These tests are reported in three sections. In the first section, all main variables (management accountants' networking, information system quality, innovation-oriented organizational culture, and result-oriented organizational culture) along with the control variables (competition, service diversity, and perceived environmental uncertainty) were included in the model. Additionally, moderating roles were examined in a separate model. Overall, two tested models are reported in this section. In the second section, supplemental tests are presented; here, the research model is examined by considering the mediating role of organizational culture. In total, two tested models are also reported in this section. In the third section, partial models are tested; specifically, the relationship between management accountants' networking and strategic management accounting techniques is examined once by including information system quality and its moderating role, and once by including result-oriented and innovation-oriented organizational culture and their moderating and mediating roles together with the control variables. Notably, six tested models are reported in the third section.

This section presents the results for the conceptual research model including all main variables and the control variables.

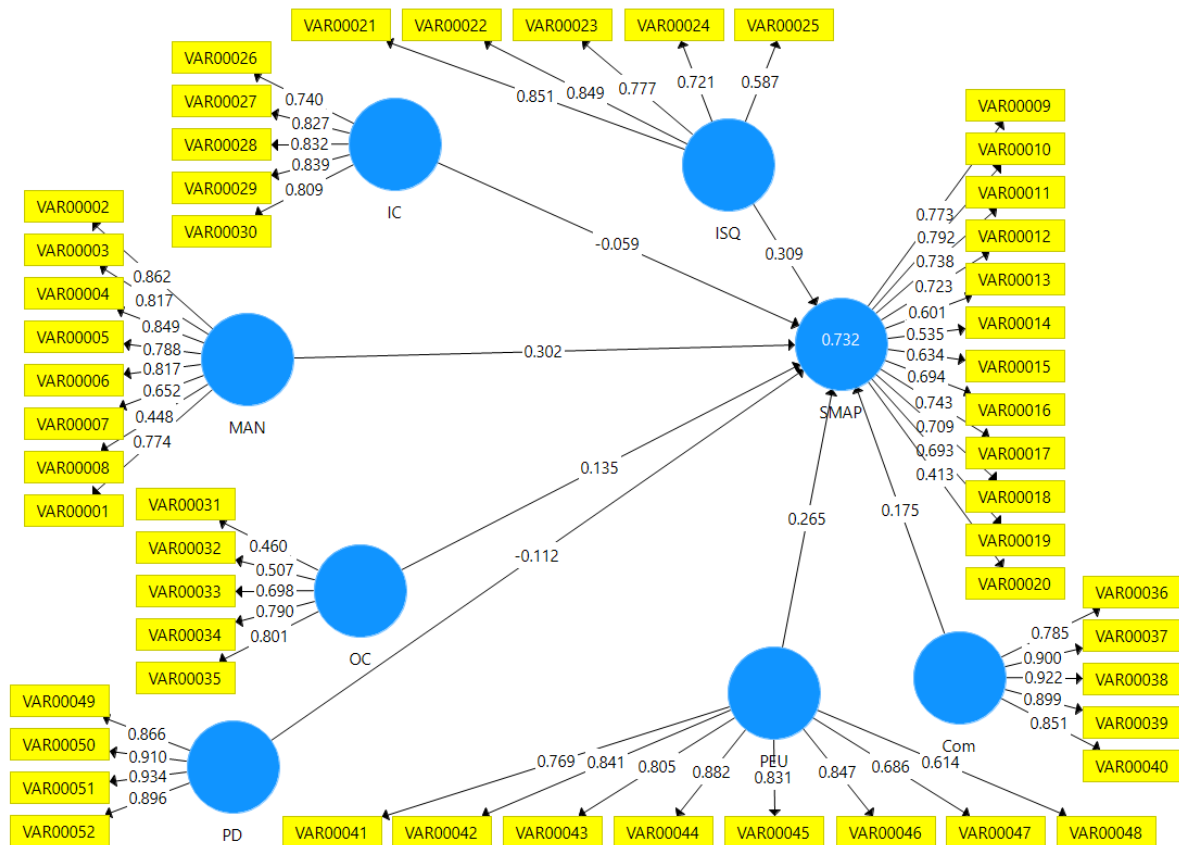


Figure 2. Path Coefficients of the Structural Equation Model Without Moderating Roles

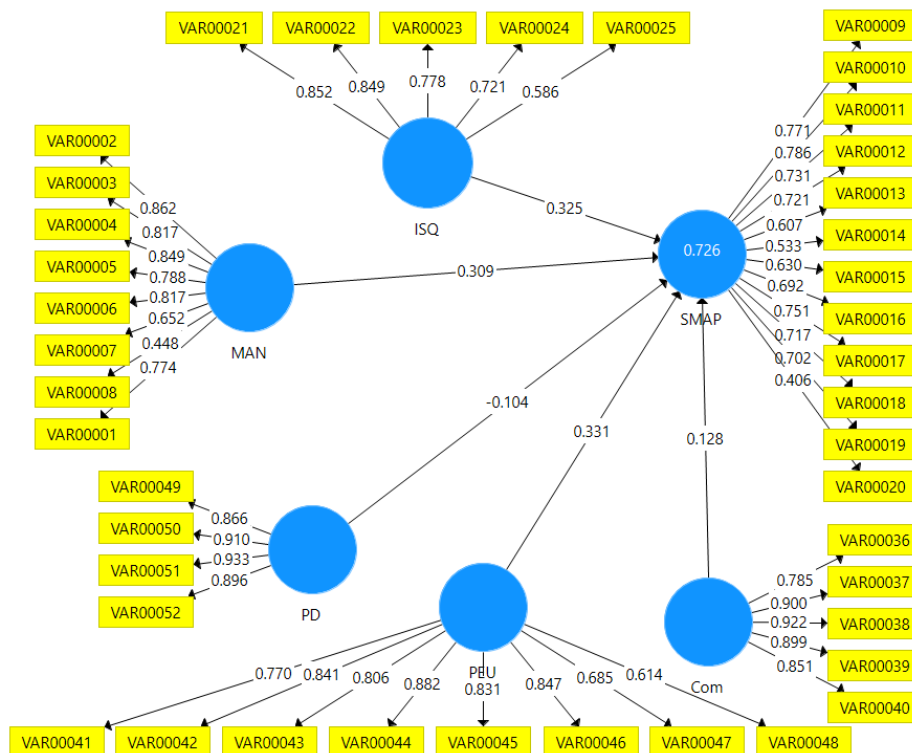
The reported R^2 (R^2_{adj}) for this model in Table 6 is 0.732 (0.723); these values indicate that the variables proposed in this study explain a substantial portion of the variance in the implementation of strategic management accounting techniques in healthcare organizations (about 73%). This explained variance exceeds that reported in prior studies, such as Emsley (2005) ($R^2 = 21\%$), Cinquini and Tenucci (2010) ($R^2 = 16\%$), Pavlatos and Kostakis (2018) ($R^2 = 29\%$), and Hadid and Al-Sayyed (2021) ($R^2 = 49\%$). Moreover, the variance inflation factor (VIF) results in Table 6 indicate no multicollinearity issues among the explanatory variables. When VIF is below 5, multicollinearity is not considered problematic; although some researchers have suggested thresholds of 8 or even 10, this study adopted the more conservative threshold of 5 to ensure robustness in model estimation.

According to Table 6 and Figure 2, the results support Hypothesis 1. More precisely, the tested model shows that management accountants' networking has a positive and significant effect on the implementation of strategic management accounting techniques ($\beta = 0.302$, $p < .01$). In addition, the results show positive and significant effects for information system quality ($\beta = 0.309$, $p < .01$) and result-oriented organizational culture ($\beta = 0.135$, $p < .05$) on the implementation of strategic management accounting techniques. However, although innovation-oriented organizational culture has a negative coefficient, it is not statistically significant ($\beta = -0.059$, $p > .10$). The results for the control variables indicate that perceived environmental uncertainty ($\beta = 0.265$, $p < .01$) and competition ($\beta = 0.175$, $p < .05$) have positive and significant effects on the implementation of strategic management accounting techniques, whereas service diversity does not have a significant effect ($\beta = -0.112$, $p > .10$).

Table 6. Path Coefficients for the Structural Equation Model Without Moderating Roles

Constructs	Coefficients (β)	t-Statistic	Significance	VIF
Management Accountants' Networking	0.302	6.069	0.000	2.133
Information System Quality	0.309	4.176	0.000	3.859
Innovation-Oriented Organizational Culture	-0.059	1.019	0.309	2.104
Result-Oriented Organizational Culture	0.135	2.313	0.021	2.366
Service Diversity	-0.112	1.613	0.107	3.467
Perceived Environmental Uncertainty	0.265	2.833	0.005	4.362
Competition	0.175	2.316	0.021	3.324
R ²	0.732	R ² _adj	0.723	

Next, the results for the partial research model including information system quality are presented. According to the table, the reported R² (R²_adj) for this model is 0.726 (0.719); these values indicate that the variables proposed in this study explain a substantial portion of the variance in strategic management accounting techniques in the tested partial model (about 73%). The VIF results in Table 6 also indicate no multicollinearity issues among the explanatory variables in this partial model.

**Figure 3. Path Coefficients of the Structural Equation Model Considering the Role of Information System Quality**

According to the results, the effects of management accountants' networking and information system quality remain unchanged. Specifically, the findings indicate that management accountants' networking ($\beta = 0.309$, $p < .01$) and information system quality ($\beta = 0.325$, $p < .01$) have positive and significant effects on the implementation of strategic management accounting techniques. The results related to the control variables also show that perceived environmental uncertainty ($\beta = 0.331$, $p < .01$) and competition ($\beta = 0.128$, $p < .05$) have positive and significant effects on the implementation of strategic management accounting techniques, whereas service diversity has no significant effect ($\beta = -0.104$, $p > .10$).

Table 7. Path Coefficients of the Structural Equation Model Considering the Role of Information System Quality

Constructs	Coefficients (β)	t-Statistic	Significance	VIF
MAN $\rightarrow$ SMAP	0.309	5.931	0.000	2.106
ISQ $\rightarrow$ SMAP	0.325	4.310	0.000	3.800
PD $\rightarrow$ SMAP	-0.104	1.617	0.107	3.332
PEU $\rightarrow$ SMAP	0.331	4.051	0.000	3.610
Com $\rightarrow$ SMAP	0.128	1.810	0.071	3.002
R ²	0.726	R ² _{adj}	0.719	

The reported R² (R²_{adj}) for this model in Table 8 is 0.739 (0.732). These values indicate that management accountants' networking and information system quality, together with their interaction term and the control variables, explain a substantial portion of the variance in strategic management accounting techniques among healthcare organizations (about 74%). Furthermore, the variance inflation factor (VIF) results in Table 8 indicate that there are no multicollinearity issues among the explanatory variables.

Additionally, after including the interaction term between management accountants' networking and information system quality in the model, the main effects of management accountants' networking and information system quality remain unchanged. Moreover, the interaction term (MAN * ISQ) is statistically significant and meaningful ($\beta = -0.126$, $p < .01$).

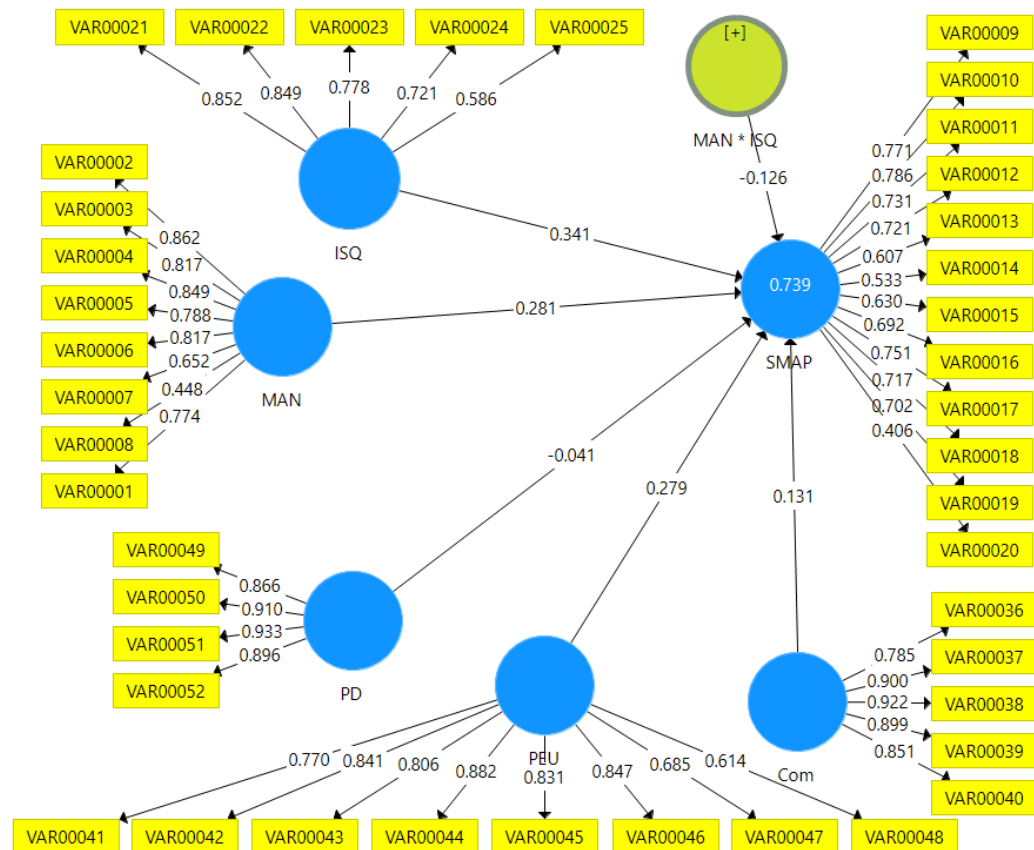
**Figure 4. Path Coefficients of the Structural Equation Model Considering the Moderating Role of Information System Quality**

Table 8. Path Coefficients of the Structural Equation Model Considering the Moderating Role of Information System Quality

Constructs	Coefficients (β)	t-Statistic	Significance	VIF
MAN $\rightarrow$ SMAP	0.281	5.985	0.000	2.165
ISQ $\rightarrow$ SMAP	0.341	5.018	0.000	3.821
MAN * ISQ $\rightarrow$ SMAP	-0.126	3.694	0.000	1.283
PD $\rightarrow$ SMAP	-0.041	0.599	0.550	3.625
PEU $\rightarrow$ SMAP	0.279	3.224	0.001	3.808
Com $\rightarrow$ SMAP	0.131	1.872	0.062	3.002
R ²	0.739	R ² _adj	0.732	

4. Discussion and Conclusion

The results of the present study confirm that management accountants' networking exerts a positive and significant effect on the implementation of strategic management accounting (SMA) techniques in healthcare organizations. This finding indicates that the extent and quality of professional relationships among management accountants facilitate the transfer of knowledge, diffusion of best practices, and collective problem-solving capabilities, all of which enhance the adoption and effective execution of SMA tools. The evidence suggests that when accountants engage in both intra-organizational and inter-organizational networks, they gain access to shared experiences, innovative approaches, and strategic insights that improve their ability to align financial practices with organizational objectives [1, 7, 8]. The positive and statistically significant path coefficient ($\beta = 0.302$, $p < .01$) underscores the central role of collaborative interaction in shaping strategic accounting behavior. This finding aligns with earlier research emphasizing that networked collaboration among accounting professionals enhances strategic responsiveness and decision accuracy [1, 2].

Consistent with the network theory of management accounting, the results illustrate that professional interaction extends beyond internal communication channels to include partnerships, supplier relations, and cross-sectoral alliances, which improve access to strategic information and reinforce the execution of SMA practices [6, 8]. In healthcare settings—characterized by multidisciplinary operations and complex governance structures—these networks serve as information bridges that reduce knowledge asymmetries between clinical and financial departments [9, 10]. The findings corroborate prior studies showing that strong professional ties among management accountants support better integration between financial systems and strategic control mechanisms, enabling adaptive responses to market volatility [3, 7]. Moreover, network-based collaboration encourages the co-creation of performance indicators and benchmarking tools, enhancing strategic visibility and accountability across decision levels [1, 5].

The findings further demonstrate that information system quality (ISQ) has a positive and significant influence on the implementation of SMA techniques ($\beta = 0.309$, $p < .01$). This confirms that high-quality information systems—characterized by reliability, accessibility, and accuracy—serve as critical enablers for effective SMA practices. Consistent with the DeLone and McLean model, which associates system quality with improved user satisfaction and decision performance, this study affirms that advanced information systems foster the effective execution of strategic accounting activities [11, 13]. The robustness of information systems enhances the precision of cost analysis, forecasting, and performance measurement, enabling accountants to provide decision-makers with comprehensive insights into organizational performance [12, 14].

The synergy between ISQ and SMA implementation also supports the technological contingency perspective, which posits that management control systems must adapt to the technological infrastructure of the organization [2, 3]. In organizations where information systems are well-integrated, management accountants can access real-time data to evaluate financial outcomes, model strategic scenarios, and align resource allocation with long-term objectives [15, 17]. This finding aligns with studies showing that superior information quality enhances strategic decision-making and contributes to better financial and operational outcomes [10, 16]. In healthcare organizations, where data volume and complexity are exceptionally high, ISQ becomes a determinant of SMA success, improving coordination among departments and reducing information silos [12, 14].

The moderating role of ISQ between management accountants' networking and SMA implementation was also statistically significant ($\beta = -0.126$, $p < .01$), suggesting that ISQ strengthens the relationship between networking and the execution of SMA techniques. Although the coefficient is negative, its significance indicates an interactive effect, meaning that when ISQ is high, the marginal benefit of networking may become more specialized and concentrated within structured digital processes. This implies that in technologically mature organizations, informal networking may gradually evolve into formalized digital collaboration supported by enterprise systems [2, 7]. This dynamic reflects the transition from human-driven knowledge exchange to data-driven decision frameworks, where digital platforms mediate collaboration and performance control [18, 20].

Furthermore, this moderating relationship demonstrates that ISQ enhances the informational value of networked interactions by reducing redundancy and ensuring that exchanged data are timely and relevant. When system quality is low, networking may lead to inconsistent interpretations or fragmented data; conversely, high ISQ ensures that network-based communication is anchored in shared and validated information sources [11, 13]. This interpretation aligns with the view that ISQ not only supports the technical dimension of management accounting but also reinforces its social and collaborative dimensions [1, 6]. In this sense, ISQ functions as a catalyst that converts networked relationships into strategic insights, thus advancing organizational learning and dynamic capability formation [3, 5].

The results regarding control variables further enrich the understanding of SMA implementation dynamics. Both perceived environmental uncertainty ($\beta = 0.265$, $p < .01$) and competition ($\beta = 0.175$, $p < .05$) had positive and significant effects, suggesting that external pressures encourage organizations to adopt and apply SMA techniques more actively. This aligns with contingency theory, which posits that management accounting systems must adapt to the organization's external environment [3, 5]. Under high uncertainty, decision-makers rely more on strategic accounting tools for scenario analysis, risk assessment, and performance forecasting [2, 6]. Likewise, in competitive markets, organizations employ SMA practices to gain cost leadership or differentiation advantages [9, 10].

The non-significant relationship between service diversity and SMA implementation suggests that heterogeneity in service offerings may not necessarily influence strategic accounting behavior. This result may be attributed to the standardized nature of financial performance indicators in healthcare organizations, which rely on consistent data structures regardless of service variety [12, 14]. Another possible explanation is that diversification effects are mediated by organizational learning mechanisms rather than direct structural variables [1, 2].

Comparing these findings with international studies reveals both convergence and contextual nuances. For instance, similar to findings from European and Asian healthcare institutions, this study shows that SMA adoption depends heavily on the quality of information infrastructure and accountants' collaborative capabilities [10, 17]. However, unlike research in more industrialized contexts, the moderating influence of ISQ observed here is more pronounced—likely reflecting the transitional stage of digital maturity in healthcare organizations of developing

economies [14, 15]. This contextual variation underscores that while networking and ISQ are universally critical, their interaction may differ according to technological readiness and institutional norms.

The results are also consistent with the emerging literature on digital transformation in management accounting, which highlights how digitalization reshapes the accountant's role from information provider to strategic advisor [18-20]. The integration of intelligent systems, big data analytics, and IoT platforms enhances SMA capabilities by enabling predictive analysis, real-time control, and strategic foresight [21, 22]. These technologies support evidence-based decisions and mitigate cognitive bias in managerial judgment, thereby strengthening the strategic function of management accountants [23, 29]. Accordingly, the results of this study affirm that the effectiveness of networked management accounting increasingly depends on digital system quality, suggesting that technological infrastructure and human collaboration are complementary, not substitutive, components of SMA effectiveness.

From a theoretical perspective, this study contributes to extending the contingency and resource-based views of management accounting. It supports the notion that organizational capabilities, such as ISQ and professional networking, represent strategic resources that enhance accounting performance [2, 5]. When effectively integrated, these resources allow firms to reconfigure their management accounting systems in response to environmental changes, thus sustaining competitive advantage [1, 3]. This insight aligns with the strategic adaptation theory, which emphasizes that flexibility in accounting practices—supported by advanced information systems and collaborative networks—drives organizational resilience and innovation [24, 25].

In terms of sectoral implications, the study offers valuable evidence for healthcare organizations, where accurate cost management, service efficiency, and accountability are essential [2, 10]. The findings demonstrate that building strong professional networks among management accountants and enhancing ISQ can significantly improve the quality of strategic financial decisions and operational coordination. This integration supports healthcare institutions in addressing challenges such as resource constraints, regulatory complexity, and stakeholder accountability [12, 14]. Furthermore, as public sector reforms increasingly emphasize performance-based management, integrating SMA with networked information systems can lead to greater transparency and value creation [4, 16].

This research also aligns with recent regional studies that emphasize developing SMA frameworks suited to emerging markets. Iranian and Middle Eastern research has shown that strengthening ISQ, digital literacy, and accountant collaboration enhances organizational performance and productivity [21, 24, 26]. Similarly, studies on resilience-based accounting frameworks argue that the integration of SMA with quality information systems leads to sustainable decision-making in volatile environments [25, 27]. These contextual studies reinforce the external validity of the present findings, indicating that network-based collaboration and technological competence are key drivers of SMA adoption and effectiveness across diverse sectors.

Finally, by empirically validating the moderating role of ISQ, this study advances understanding of the mechanisms linking social and technological dimensions in management accounting. It shows that the benefits of professional networking depend on the reliability of the information infrastructure supporting communication and decision-making. This integrative view echoes calls from recent scholarship advocating for the convergence of human and digital intelligence in accounting practices [18-20]. The convergence ensures that SMA not only reflects financial accuracy but also captures strategic foresight and adaptability—key attributes in the era of digital governance and sustainability [22, 29].

Despite its contributions, the study has several limitations. First, the research design is cross-sectional, which restricts the ability to infer causal relationships between variables over time. Longitudinal data would provide a

deeper understanding of how networking and ISQ influence SMA adoption as organizations evolve technologically. Second, the study focused exclusively on healthcare organizations, which may limit the generalizability of results to other sectors with different operational and information structures. Third, data were collected via self-reported questionnaires, potentially introducing response bias or social desirability effects. Finally, the study examined only a limited set of moderating and control variables, suggesting that other factors such as leadership style, digital literacy, or regulatory environment may also play important roles in shaping SMA implementation.

Future studies should explore longitudinal or mixed-method designs to capture the evolving interaction between networking, ISQ, and SMA practices across different time frames. Comparative cross-sectoral analyses could reveal how contextual differences in technological maturity and institutional culture affect these relationships. Further research should also consider integrating behavioral and cognitive dimensions, examining how accountants' digital competencies and strategic mindsets mediate the influence of ISQ. In addition, future models could expand to include sustainability metrics, artificial intelligence adoption, and digital trust as moderating variables, providing a broader understanding of SMA in the era of digital transformation.

Organizations—especially in the healthcare sector—should invest in both technological infrastructure and human networks to maximize SMA effectiveness. Strengthening ISQ through integrated platforms, data governance, and real-time analytics will ensure reliable information flows for strategic decisions. Simultaneously, fostering professional communities of practice among management accountants can enhance knowledge sharing, collaborative problem-solving, and innovation in financial management. Management training programs should emphasize digital literacy, cross-functional collaboration, and strategic thinking to enable accountants to act as proactive partners in strategic planning and control. Ultimately, organizations that successfully combine high-quality information systems with strong professional networks will be better positioned to achieve sustained strategic performance and organizational resilience.

Authors' Contributions

Authors equally contributed to this article.

Ethical Considerations

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

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Conflict of Interest

The authors report no conflict of interest.

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