Examining the Role of Networking, Organizational Culture, and Information System Quality in the Implementation of Strategic Management Accounting Methods Using Structural Equation Modeling

Reza Pezeshkizadeh[1], Ali Mahmoudi[2]*, Ahmad Kaab Omeir[3], Fariborz Avazzadeh Fath[4]

[1.]PhD student, Department of Accounting, Ahvaz Branch, Islamic Azad University, Ahvaz, Iran.
[2.]Assistant Professor, Department Of Accounting, Ahvaz Branch, Islamic Azad University, Ahvaz, Iran (Corresponding author).
[3.]Assistant Professor, Department of Accounting, Ahvaz Branch, Islamic Azad University, ahvaz, Iran.
[4.]Assistant Professor, Department of Accounting, Gachsaran Branch, Islamic Azad University, Gachsaran, Iran.

*** Corresponding author email address**: mahmoodi60@yahoo.com

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Abstract

This research examines the factors influencing the implementation of strategic management accounting methods. Based on library research and statistical analyses, this study investigates the role of three variables—networking, organizational culture, and information system quality—in the implementation of these methods. The study is applied in terms of its outcome and is classified as descriptive-survey research in terms of its goal. The statistical population consists of manufacturing and industrial companies listed on the Tehran Stock Exchange in 2022, totaling 287 companies, with 166 questionnaires used for the analysis. Hypothesis testing was performed using Partial Least Squares Structural Equation Modeling (PLS-SEM), along with t-statistics, significance levels, and path coefficients. The research utilized Excel 2016, SmartPLS 3, and SPSS 26 software. The results indicate that networking, innovation-based culture, results-based culture, and information system quality significantly influence the implementation of strategic management accounting methods. Furthermore, information system quality significantly affects the role of networking and the implementation of these methods. While innovation-based culture has a significant indirect effect on the implementation of strategic management accounting methods through the mediating role of networking, this indirect effect was not confirmed for results-based culture. Based on the findings, it can be stated that the implementation of strategic management accounting methods is more likely in organizations with effective and extensive communication networks, high-quality information systems, and an innovation- and results-driven culture. Additionally, the use of effective communication networks, coupled with a quality information system, and supported by an innovation-based culture, facilitates the implementation of these methods. In results-based cultures, managers will continue to study and gather the necessary information to achieve strategic organizational goals, even in the absence of effective communication networks.

Keywords: *Organizational culture, Information system quality, Networking, Strategic management accounting*.

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1. Introduction

Economic units and organizations are currently operating in a complex and highly competitive environment. This environment is characterized by highly variable conditions, and business units must utilize all available tools to compete and survive under such circumstances. Therefore, most organizations are moving toward adopting and utilizing various strategic concepts [1-3]. Strategic Management Accounting (SMA) is one of the most important features of contemporary accounting, enabling organizations to adapt to environmental variables and subsequent changes in economic systems. SMA can be defined as the use of management accounting systems to support strategic decision-making [4, 5]. Decisions that must be made to ensure the effective allocation of resources require various types of accounting information, which only management accounting can provide for managers. The survival of companies in today's global competitive markets may largely depend on the performance of management accounting, as it facilitates the successful evaluation of strategic positions [6-8].

In recent years, traditional management accountants primarily focused on providing the information needed for decision-making. However, recent studies highlight the undeniable role of contemporary management accounting in strategic decisions within organizations. In fact, strategic management accounting aims not only to shift the perspective of management accounting from an inward-looking view (such as historical and internal perspectives) to an outward-looking perspective (such as external organizational and market-oriented information) but also seeks to connect management accounting and the strategic position of the organization [3, 9, 10].

Simons (1981) defined strategic management accounting as the provision and analysis of management accounting data about a business and its competitors to be used in developing and monitoring a business strategy. Following Simons' 1981 study, literature related to strategic management accounting significantly expanded, and various approaches were introduced. Since then, interest in implementing such approaches in business units and determining their impact on company performance has increased [11-13]. In recent years, a large number of studies have been conducted regarding SMA approaches and their impact on business unit performance [14]. While some empirical studies have demonstrated that the correct and optimal use of strategic management accounting methods leads to significant improvements in business performance and competitive ability [3, 5, 9-11, 14-21], many studies and actual results indicate that despite the implementation of strategic management accounting methods, no significant positive impact on business performance has been observed [5, 18, 21-24]. Therefore, these results have been largely unpredictable for many researchers who expected that attention to and implementation of strategic management accounting methods would not only improve business performance but also provide managers with a successful path through informed strategic decision-making in the face of intense competition and environmental uncertainty [21, 25].

Outley (2016) concluded that a major limitation in such research (in identifying specific contexts and conditions) led to the failure to implement strategic management accounting methods, because SMA cannot be implemented in isolation without considering the related conditions and contexts. To overcome this limitation, Outley (2016) recommended that SMA be conceptualized and examined within a broader organizational context, taking into account various related organizational resources, capabilities, conditions, contexts, and subsystems (e.g., resources, climate, structure, culture, information systems, etc.) [3].

Research related to strategic management accounting and the identification of its specific contexts has faced limitations from various perspectives. First, most studies focused only on one or two SMA methods, such as Activity-Based Costing/Management [26, 27], Balanced Scorecard [13], or Life Cycle Costing [28], but these efforts failed to provide conclusive evidence regarding the identification of specific contexts for the implementation of strategic management accounting methods. Second, due to insufficient attention to the full set of strategic management accounting methods and the lack of research examining a comprehensive set of SMA methods, it has been difficult to definitively identify the factors and contexts that affect the optimal implementation of SMA methods [18]. Third, in most studies, despite testing reduced models introduced in previous research, only the direct and independent relationships between variables were examined, without considering moderating or mediating relationships between other variables and the main variable. As a result, either nonsignificant or inconclusive results were obtained. Additionally, some studies, rather than focusing on the conditions and contexts that facilitate or hinder the implementation of SMA methods, primarily examined the rate and quantity or quality of SMA implementation in

different business units. Consequently, such inconclusive and scattered results have led to a lack of reasonable certainty among researchers regarding the identification of the specific elements and contexts that either facilitate or hinder the implementation of strategic management accounting methods.

In this regard, previous research agrees that for a management accounting activity to be beneficial in developing and evaluating strategy, and thus be recognized as a strategic management accounting activity, it must have two key characteristics: a) a long-term orientation and b) an external focus [18, 20]. Therefore, researchers such as Cadez & Guilding (2008) acknowledge the limitations and shortcomings of the model examined in their study and, in addition to calling for further research in this area, have requested that future studies focus on developing a broader, more comprehensive model that considers the direct, moderating, and mediating effects of variables and contexts that can meaningfully and relatively conclusively contribute to the understanding and improvement of SMA implementation [18].

Therefore, based on the discussions above and a review of the relevant literature and various sources, we aimed to identify the specific contexts and factors that affect the implementation of strategic management accounting methods. We sought to examine the potential roles of four variables: the networking of management accountants, information system quality, and organizational culture. These variables have either been underexplored or have not been simultaneously included in SMA literature models. Additionally, the relationships between these variables will be explained in detail in the theoretical framework. To address some of the limitations mentioned, we expanded our investigation by examining a relatively larger set of strategic management accounting methods (twelve methods), rather than focusing solely on a few. By integrating and complicating the model, we not only assessed the direct effects but also examined the potential moderating and mediating effects to better understand how these four main variables impact SMA implementation. Furthermore, we considered the potential effects of several other control variables, such as competition, product diversification, environmental uncertainty, company size, and organizational performance, to provide a more robust model for the research.

2. Methodology

This research is applied in terms of its outcome, and descriptive-survey in terms of its objective. In this type of research, the researcher uses tools such as questionnaires or interviews to gather information about the beliefs, attitudes, knowledge, and perceptions of individuals regarding a particular subject. On the other hand, from the perspective of the research process, this study is considered a quantitative research, and from the perspective of its execution logic, it can be regarded as a mixed-method approach (deductive-inductive). This is because, for gathering data on the theoretical foundations and literature review, as well as to identify the theoretical relationships between the variables and examine past research, a library research method was used, which includes reviewing articles, journals, and databases (library method). Subsequently, a questionnaire was used to collect data related to each of the research variables, and the relationships between the variables were analyzed (field method). Additionally, from a temporal perspective, the research is categorized as cross-sectional since the study was conducted at a single point in time.

The statistical population of the research includes the CEOs and financial managers working in manufacturing and industrial companies active in the Tehran Stock Exchange. According to the Stock Exchange Information System, the total number of these companies is 230. Assuming that at least one CEO and one financial manager from each company respond to the questionnaires, the statistical population would consist of 460 individuals. Therefore, the sample size, based on Cochran's formula, is 210 individuals. The questionnaires were then prepared online, and the related link was sent to the sample participants. Additionally, explanations regarding the techniques of strategic management accounting were also sent alongside the questionnaire. It is worth noting that all the questionnaires were standardized, and their reliability and validity were confirmed in previous studies, which will be explained in detail in the section on variable assessment. Furthermore, the questionnaires were localized, and their content validity was reviewed and approved by several university professors. After receiving the completed questionnaires and conducting a qualitative review of the responses, we proceeded to quantify the responses using SPSS software. The questionnaires used a 7-point Likert scale, with the lowest score being 1 and the highest score being 7. To assess convergent validity, we used the Average Variance Extracted (AVE), introduced by Fornell and Larcker in 1981. The AVE index represents the average variance shared

between each construct and its indicators. Fornell and Larcker (1981) suggest that convergent validity exists when AVE is greater than 50%. To ensure discriminant validity, we compared the AVE of each construct with the shared variance between it and other constructs, which is the squared value of the correlation coefficients between constructs. Finally, to assess the reliability of the indicators, we used the average factor loadings and Composite Reliability (CR), which should be greater than 0.40 and 0.70, respectively. After confirming the reliability and validity, we used Partial Least Squares Structural Equation Modeling (PLS-SEM) to test the proposed model and hypotheses, a variance-based technique that enables simultaneous testing of multiple relationships using multi-item measurement tools. The tools used in this research to collect data were questionnaires, and for data quantification and analysis, SPSS and Smart PLS2 software were employed.

2.1. Variable Assessment

2.1.1. Strategic Management Accounting Methods

Following the research by Cadez and Guilding (2012, 2008) and Baird et al. (2004), we asked the respondents to indicate, on a 7-point scale (1 = Not at all; 7 = To a great extent), the extent to which each of the 13 strategic management accounting activities is implemented in their business unit [18, 26, 27].

2.1.2. Independent Variables

Management Accounting Networking

To assess the extent of network communication in management accounting, following the research of Newell et al. (1998), we asked the respondents to indicate, on a 7-point scale (1 = Never; 7 = To a great extent), how and through which communication channels they utilize to understand, learn, and stay informed about new and updated ideas and approaches in management accounting.

Organizational Culture

Following the studies by Baird et al. (2018), Zhang et al. (2015), Baird et al. (2007, 2004), we assessed organizational culture based on two dimensions: innovation-based culture and result-based culture. For each dimension, five components were considered, and in the questionnaires, we asked participants to indicate, using a 7-point Likert scale (1 = Not valuable at all; 7 = Extremely valuable), which of these components are emphasized and considered valuable in their business unit [26, 27].

Quality of Information System

Following the study by Kramvid (1998), we used a 5-item questionnaire to measure the quality of the information system. The respondents were asked to express their opinions on a 7-point scale (1 = Strongly disagree; 7 = Strongly agree) regarding five statements that reflect the quality of the information system.

2.1.3. Control Variables

Competitive Intensity

Competitive intensity reflects the competitive situation and conditions of the business unit within the organizations in a given group. Following the research by Khandwala (1977), we asked the respondents, using a 7-point scale (1 = Low; 7 = High), to indicate the level of competition for their business unit concerning raw materials, technical personnel, sales and distribution, quality, prices, and product variety.

Perceived Environmental Uncertainty

Following the research by Khandwala (1972, 1977), Abdul Qadir and Later (2008), and Goevendarajan (1984), using a questionnaire, we asked the respondents, based on a 7-point Likert scale (1 = Highly predictable; 7 = Highly unpredictable), to indicate how predictable each of the factors mentioned is in their business unit: production technology, competitors' activities, market demand, product characteristics and design, raw material inventory, raw material prices, government regulations affecting company activities, and activities of trade associations and labor unions.

Product Diversification

Following the studies by Abdul Qadir and Later (2008), Brown et al. (2004), and Kramvid (1998), we used a 4-item questionnaire, and asked respondents to indicate their level of agreement or disagreement with four statements in the questionnaire that reflect the complexity and diversification in the production lines of their business unit, using a 7-point Likert scale (1 = Strongly disagree; 7 = Strongly agree).

Company Size

Based on the research by Shote (2011), Brown et al. (2004), and Alamiri & Derwari (2007), Kramvid (1998), we measured the company size based on the number of employees and annual sales turnover [15, 16]. The respondents were asked to indicate the approximate number of employees and the approximate annual sales turnover of their business unit for the previous fiscal year in their responses.

3. Findings and Results

Table 1 presents the descriptive statistics related to strategic management accounting methods:

Table 1. Descriptive Statistics

Row	Method	Mean	Standard Deviation
1	Customer Profitability Analysis	3.84	1.87
2	Economic Value Added	3.71	1.97
3	Competitive Position Monitoring	3.59	1.75
4	Benchmarking	3.51	1.62
5	Value Chain Costing	3.47	1.96
6	Target Costing	3.39	1.92
7	Life Cycle Costing	3.24	1.81
8	Quality Costing	3.18	1.62
9	Strategic Pricing	2.93	1.79
10	Strategic Costing	2.86	1.69
11	Balanced Scorecard	2.63	1.73
12	Competitor Performance Evaluation	2.55	1.59
13	Mean of SMA Techniques	47%	

The descriptive statistics are arranged in descending order by mean (from top to bottom), as shown in the table. The high mean scores for customer profitability analysis, economic value added, and competitive position monitoring indicate the increasing importance of customers, managerial performance, and better performance relative to competitors in the strategic goals and plans of the sample companies. Furthermore, the higher mean for the benchmarking method reflects an increasing awareness and willingness of companies to implement this method compared to previous years. Based on the results, the highest mean is related to the customer profitability analysis method, and the lowest mean is associated with the competitor performance evaluation method. Additionally, the overall mean execution of strategic management accounting (SMA) methods is 47%, suggesting a relatively favorable implementation status of SMA methods in the sample companies. This indicates that companies have a good understanding and outlook on the benefits of implementing SMA methods, compared to past years. In the research by Yeganeh et al. (2011), the average implementation of management accounting methods in manufacturing companies was low (around 25%). However, subsequent studies showed a relative improvement in the implementation of SMA methods in Iranian companies, reflecting the growing awareness of business units regarding financial performance improvement and competitive advantage through the use of strategic management accounting methods.

To analyze the data and assess model fit, we use composite reliability, convergent validity, and discriminant validity. In the first step, we examine the reliability of the indicators (internal consistency) through confirmatory factor analysis (mean factor loadings of the items) and composite reliability. Factor loadings are calculated through the correlation between an indicator's items and the corresponding factor. This means that the variance between the factor and its indicators should be greater than the measurement error variance. Additionally, in the PLS method, a composite reliability (CR) index is used, which is considered a better criterion than Cronbach's alpha, because in CR, indicators with higher factor loadings are given more weight. In contrast, Cronbach's alpha treats all indicators with equal importance in calculations. Factor loadings of 0.40 or higher and composite reliability greater than 0.70 indicate adequate construct reliability, internal consistency, and appropriate measurement precision. To ensure convergent validity, we evaluate the average variance extracted (AVE). If the AVE of each variable is greater than or equal to 0.50, it indicates acceptable convergent validity (Forner & Larker, 1981). The results for factor loadings, composite reliability, and AVE are presented in below tables. For ease of presentation, abbreviations are used for the variables: Innovation-Oriented Culture (CLN), Outcome-Oriented Culture (CLO), Information System Quality (ISQ), Management Accounting Networking (NTW), Institutional Ownership (ISO), CEO Risk-Taking

(CER), Competition Intensity (COM), Product Diversity (DVR), and Company Size (SIZE).

Table 2. Confirmatory Factor Analysis

Variable	Abbreviation	Mean Factor Loading of Items
Strategic Management Accounting	SMA	0.668
Innovation-Oriented Culture	IC	0.641
Outcome-Oriented Culture	OC	0.703
Information System Quality	IS	0.582
Management Accounting Networking	CN	0.714
Competition Intensity	CPA	0.655
Product Diversity	PD	0.573
Company Size	SIZE	0.628
Environmental Uncertainty	EU	0.559

Table 3. Composite Reliability and Convergent Validity Report

Variable	Title in Model	CR ≥ 0.7	AVE ≥ 0.5
Strategic Management Accounting	SMA	0.876	0.702
Innovation-Oriented Culture	IC	0.855	0.673
Outcome-Oriented Culture	OC	0.841	0.629
Information System Quality	IS	0.796	0.571
Management Accounting Networking	CN	0.869	0.648
Competition Intensity	CPA	0.854	0.732
Product Diversity	PD	0.775	0.621
Company Size	SIZE	0.778	0.655
Environmental Uncertainty	EU	0.819	0.598

Based on the above results, the mean factor loadings of the indicators are greater than 0.40, and the composite reliability values for all dimensions of the model under study are greater than 0.70. Thus, it can be concluded that the questionnaires demonstrate acceptable reliability and internal consistency. Additionally, the average variance extracted (AVE) for all variables and dimensions of the study exceeds 0.50, indicating that the measurement model is well-fitting and that convergent validity is established.

Divergent validity indicates how much the questions of a construct differ from the questions of other constructs. This criterion is one of the main indicators for assessing the fit of measurement models in the PLS method. Divergent validity refers to the low correlation of a latent variable's indicators with indicators of unrelated variables (from the researcher's perspective). To examine divergent validity, the square root of the average variance extracted (AVE) for each construct is compared with its correlation with other constructs. Fornell and Larcker (1981) stated that divergent validity is acceptable when the AVE of each construct exceeds the shared variance between that construct and other constructs (i.e., the square of the correlation coefficients between the constructs). Based on the findings, the divergent validity of the model can be concluded at the component level according to Fornell-Larcker's criteria.

Table 4. Divergent Validity

Variable	1	2	3	4	5	6	7	8	9
Strategic Management Accounting	0.746	-	-	-	-	-	-	-	-
Innovation-Based Culture	0.344	0.820	-	-	-	-	-	-	-
Outcome-Based Culture	0.246	0.719	0.856	-	-	-	-	-	-
Information System Quality	0.256	0.515	0.144	0.774	-	-	-	-	-
Communication Networking	0.294	0.484	0.172	0.518	0.756	-	-	-	-
Competitive Intensity	0.244	0.464	0.182	0.448	0.422	0.720	-	-	-
Product Diversity	0.355	0.504	0.127	0.309	0.409	0.119	0.770	-	-
Company Size	0.235	0.555	0.244	0.308	0.404	0.180	0.304	0.732	-

Environmental Uncertainty	0.194	0.494	0.134	0.109	0.290	0.080	0.204	0.072	0.794

Table 5 presents the results of the hypothesis tests in the form of path coefficients along with their significance levels. In this study, a 95% confidence level is considered, as is standard in most research. If the significance level is less than 5%, it can be stated that the path and the corresponding path coefficient are significant, and thus, the related hypothesis is confirmed. Otherwise, the hypothesis is rejected. After ensuring the significance, the direction of the changes between the two variables is examined by analyzing the sign of the path coefficient between the variables. A positive sign indicates a direct and same-direction relationship, while a negative sign indicates an indirect, opposite-direction relationship. In the initial model fit, to find meaningful relationships between variables for the final model, the moderating effect of innovation-based culture and results-oriented culture on the relationship between management accounting network building and SMA methods was not significant. Therefore, based on the observed significant correlation between these two variables and management accounting network building, we hypothesized that these two cultures have an indirect effect through the mediating variable of management accounting network building on the implementation of SMA methods. The results of the hypothesis testing are shown in Table 5.

Table 5. Hypothesis Testing

Hypothesis	Path Coefficient (β)	T-Statistic (t-value)	Significance Level (p-value)	Result	VIF
1. Communication networking has a significant impact on the implementation of strategic management accounting methods.	0.487	8.854	0.000	Hypothesis Accepted	1.17
2. Information system quality significantly impacts the implementation of strategic management accounting methods.	0.256	3.538	0.000	Hypothesis Accepted	1.14
3. Information system quality significantly impacts the role of communication networking and the implementation of strategic management accounting methods.	0.687	3.742	0.000	Hypothesis Accepted	1.19
4. Innovation-based culture significantly impacts the implementation of strategic management accounting methods.	0.522	1.996	0.037	Hypothesis Accepted	1.1
5. Innovation-based culture significantly impacts the implementation of strategic management accounting methods through the mediating role of communication networking.	0.450	2.243	0.009	Hypothesis Accepted	1.25
6. Results-oriented culture significantly impacts the implementation of strategic management accounting methods.	0.233	2.919	0.002	Hypothesis Accepted	1.34
7. Results-oriented culture significantly impacts the implementation of SMA methods through the mediating role of communication networking.	0.306	1.929	0.064	Hypothesis Rejected	1.17
Adjusted R-squared	0.682				
Normed Fit Index	0.068				
Root Mean Square Residual	0.905				

The results from Table 5 show that 6 hypotheses of the model were confirmed. Additionally, hypothesis testing reveals that while the results-oriented culture has a significant positive impact on the implementation of strategic management accounting methods, it does not have a significant indirect impact on SMA implementation through management accounting network building. Therefore, Hypothesis 7 is rejected. Regarding the coefficient of determination, Chin (1998) defined three values—0.19, 0.33, and 0.67—as the benchmarks for weak, moderate, and strong model fit using the R^2 criterion. Thus, the model's R^2 is 0.69, and other indices also indicate a good model fit and the reliability of the hypothesis testing results.

Based on

Table 6, considering the significance and indirect effect of innovation-based culture on the implementation of strategic management accounting methods through the mediating role of management accounting network building, VIF is used to determine the strength of the mediating variable. The VIF value ranges from 0 to 1, and the closer it is to 1, the more effective the mediating variable. In fact, this index indicates the indirect effect as a proportion of the total effect.

Table 6. VIF Index

Path	VIF	Indirect Effect
Innovation-based culture, management accounting network building, SMA implementation	23%	23% of the effect of innovation-based culture on SMA implementation is explained through the mediating role of management accounting network building.

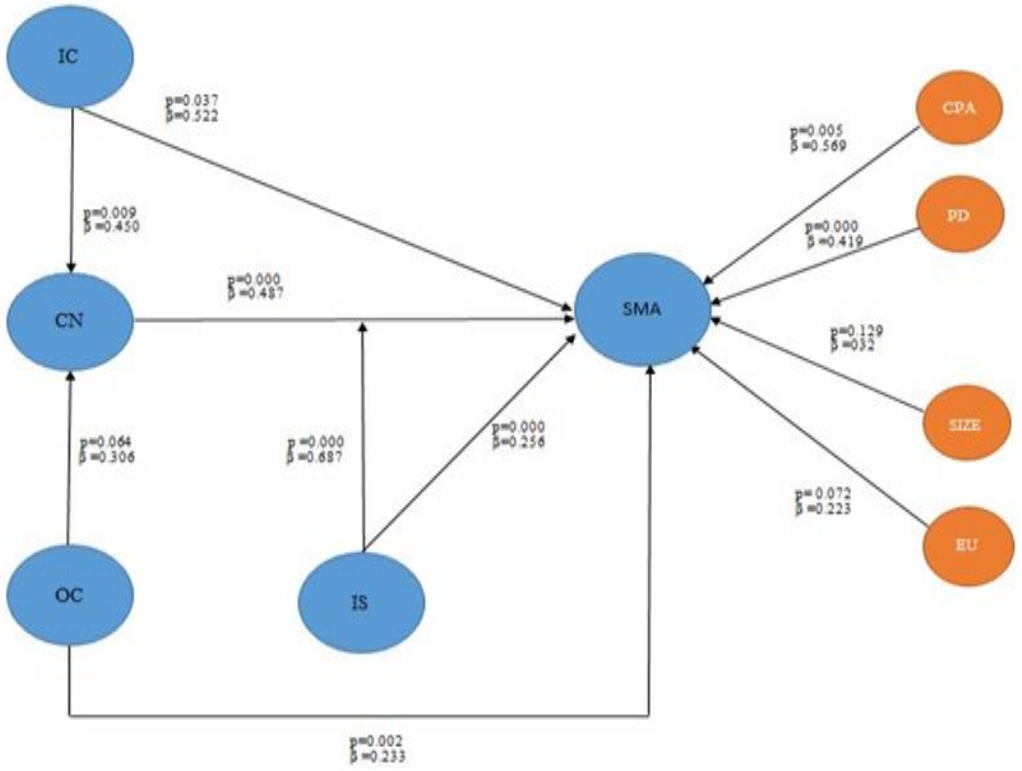

Figure 1. Final Structural Model of the Research

On the other hand, as shown in Figure 1, the control variables, company size (β = 0.032, p = 0.129) and environmental uncertainty (β = 0.223, p = 0.072), do not have a significant effect on the implementation of strategic management accounting methods. However, the results indicate a significant positive effect of two control variables: competitive intensity (β = 0.569, p = 0.005) and product diversity (β = 0.419, p = 0.000) on the implementation of strategic management accounting methods. These results suggest that the implementation of these methods is more likely in organizations operating in highly competitive markets with diverse product offerings.

4. Discussion and Conclusion

In this research, an attempt was made to enrich the relevant literature on strategic management accounting by using a comprehensive theoretical model. It also aimed to reliably identify the factors and contexts through which the implementation of strategic management accounting (SMA) methods can be influenced. The findings of the study highlight the importance of communication networking in management accounting in enhancing the ability of accountants to design and implement SMA methods. This result is consistent with prior findings [3, 11, 18, 20]. Therefore, financial managers and accountants in various business units are expected to create extensive and active communication networks with both internal and external colleagues. This will enable them to stay informed about the latest SMA methods, understand the obtained information, identify the informational needs of decision-makers within their organization, and thus propose and implement the most suitable and useful SMA methods to assist decision-makers in achieving efficient performance.

Furthermore, the results indicated that the quality of the information system not only directly facilitates the implementation of SMA methods but also confirms the findings of prior studies [15, 16]. Additionally, the quality of the information system influences the relationship between management accounting communication networking and the implementation of SMA methods. In fact, it seems that accountants who interact and communicate with others within and outside the organization through communication

networks may find it easier to implement SMA methods in companies with high-quality information systems. Moreover, a high-quality information system assists decision-makers in accessing detailed and transparent information for various goals by collecting and storing the different functions of the organization [3, 13, 14].

The findings also indicated that an innovation-based culture (innovation-oriented culture) has a positive impact on the implementation of SMA methods. Moreover, it has a significant indirect effect on the implementation of strategic management accounting methods through communication networking, although this effect is not direct. This suggests that an innovation-oriented culture provides a motivational and conducive environment for management accountants to create communication networks both within and outside the organization. As explained earlier, this communication networking enables financial managers, accounting experts, and management accountants to acquire the necessary knowledge and skills to identify the latest ideas and solutions and implement the most relevant methods, including SMA techniques [9, 19, 20].

Regarding a result-oriented culture (outcome-oriented culture), the results confirmed a positive and significant effect on the adoption and implementation of SMA methods. This outcome is consistent with the prior findings [17, 26, 27]. However, in contrast to the innovation-oriented culture, no significant indirect effect was observed for the outcome-oriented culture on the implementation of SMA methods through management accounting communication networking. This suggests that, in outcome-oriented companies, the implementation of SMA methods may not necessarily depend on communication networking in management accounting. Moreover, there is no direct effect of the quality of SMA methods on the relationship between SMA methods and management accounting communication networking. Managers in outcome-oriented companies are generally highly motivated to achieve success and desired outcomes [17, 26, 27, 29]. Therefore, their performance is likely to be evaluated based on this motivation. In companies with an outcome-oriented culture, managers typically gather the necessary information for implementing SMA methods to achieve their expected goals and outcomes, even if the financial unit and management accountants do not actively participate in this process or make efforts to create and establish communication networks (to obtain the latest information and SMA methods). For instance, some studies have emphasized the competitive role of operational managers (e.g., production and marketing) in taking initiatives to gather information through SMA methods [11, 21, 25, 30]. Therefore, the findings of this study suggest that the lack of participation from management accountants and the competitive role of operational managers may be more pronounced in companies with an outcome-oriented culture.

Authors' Contributions

Authors equally contributed to this article.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

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

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