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**IMPROVING THE METHODOLOGY FOR INTEGRATING VALUE CHAIN
PERFORMANCE INDICATORS INTO THE BALANCED SCORECARD SYSTEM
WITHIN STRATEGIC MANAGEMENT ACCOUNTING**

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The contemporary business environment is characterized by technological transformation, intensified competition, supply-chain complexity, changing customer expectations, and increasing requirements for organizational efficiency. These conditions have increased the need for performance measurement systems capable of connecting strategic objectives with value-creating activities. Traditional management accounting systems, which primarily emphasize historical financial information, may provide insufficient information about the operational and interorganizational factors influencing future performance. Strategic Management Accounting (SMA) addresses this limitation by providing strategically relevant financial and non-financial information for planning, performance evaluation, resource allocation, and decision-making. Recent research confirms that SMA increasingly encompasses strategic costing, performance management, customer and competitor analysis, and strategic decision-making (Nik Abdullah et al., 2022).

Value chain analysis provides an important perspective for understanding how organizations create value through interconnected activities. Procurement, production, logistics, marketing, distribution, customer service, innovation, and supplier relationships may all influence organizational performance. Consequently, evaluating these activities separately may prevent managers from understanding how operational improvements contribute to customer and financial outcomes. Recent empirical research demonstrates that management accounting tools applied across different value-chain stages can influence internal operational value, customer value, and financial value (Sha, 2024).

The Balanced Scorecard (BSC) provides a framework for translating organizational strategy into multidimensional performance measures. Contemporary research indicates that BSC scholarship has expanded toward strategic performance management, systems thinking, sustainability, technology, and integrated performance measurement (Kumar et al., 2024). However, the effective integration of value chain performance indicators into the BSC remains insufficiently developed. Organizations may collect numerous indicators related to suppliers, procurement, production, inventory, logistics, customers, and innovation without establishing clear strategic relationships among them.

Therefore, the objective of this research is to improve the methodology for integrating value chain performance indicators into the Balanced Scorecard system within Strategic Management Accounting. The study focuses on systematic indicator selection,

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strategic alignment, prioritization, causal integration, and continuous evaluation. The proposed methodology is intended to strengthen the connection between value-creating activities and strategic objectives while improving the usefulness of management accounting information for managerial decision-making.

Recent literature demonstrates the increasing strategic orientation of management accounting. Nik Abdullah et al. (2022), through a systematic review of Strategic Management Accounting practices, identified strategic costing, performance management, customer accounting, competitor accounting, and strategic decision-making as important areas of contemporary SMA research. Their findings indicate that SMA is increasingly concerned with providing information that supports organizational strategy rather than merely reporting historical financial performance.

Value chain-oriented management accounting represents an important dimension of this development. Sha (2024) examined management accounting tools across different value-chain links and demonstrated that their effects differ according to the stage of the value chain in which they are applied. The study also identified significant relationships between internal operational value, customer value, and financial value. These findings support the need to integrate value-chain indicators rather than treating operational measures as isolated performance statistics.

Recent research by Shil and Chowdhury (2024) further emphasizes the importance of management accounting practices in supporting organizational governance and value creation. Their review highlights the continuing need to integrate management accounting information with broader organizational processes and strategic requirements.

Contemporary BSC research also supports an integrated approach. Kumar et al. (2024), based on a systematic and bibliometric review of 1,294 BSC studies, identified strategic performance management, systems thinking, sustainability, integrated reporting, technology, and customer orientation as major contemporary research areas. Their findings demonstrate that the BSC has developed beyond a simple classification of financial and non-financial indicators and is increasingly viewed as an integrated strategic management framework.

Kheit and Khadim (2024) specifically examined the integration of the BSC and sustainable value chain analysis for evaluating strategic performance. Their findings indicate that combining multidimensional performance measurement with value-chain analysis can provide a more comprehensive understanding of strategic performance.

Sorooshian and Mad Ali (2024) examined BSC applications from a system-dynamics perspective and emphasized relationships between leading and lagging indicators. Their research supports the importance of identifying causal relationships between operational performance drivers and organizational outcomes.

Krylov (2025) further developed integrated business analysis based on BSC indicators and emphasized the importance of comparing actual and target values, identifying deviations, and analyzing their causes. This approach reinforces the idea that



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BSC indicators should support managerial analysis rather than simply provide descriptive information.

Despite these developments, a methodological gap remains. Recent literature provides evidence concerning SMA, value chain management accounting, and BSC implementation, but comparatively limited attention has been given to a systematic methodology for selecting, prioritizing, mapping, and integrating value chain performance indicators into the BSC within SMA. In particular, further development is required regarding the allocation of indicators to BSC perspectives, identification of causal relationships, indicator weighting, and integration of value-chain information into strategic management decisions. The present study addresses this gap.

The results demonstrate that integrating value chain performance indicators into the BSC can strengthen the strategic role of Strategic Management Accounting. The analysis indicates that value-chain performance should be evaluated as an interconnected system rather than as separate departmental activities.

The proposed methodology begins with the identification of strategic objectives. The organization subsequently identifies the value-chain activities that contribute to these objectives, including procurement, supplier management, production, inventory, logistics, distribution, marketing, customer service, and innovation. Appropriate performance indicators are then selected to measure the contribution of these activities to strategic outcomes.

Value chain indicators can be distributed across the four BSC perspectives. Financial indicators may include value-chain cost efficiency, profitability, working-capital efficiency, and value creation. Customer indicators may include customer satisfaction, retention, delivery reliability, and service quality. Internal-process indicators may include supplier quality, procurement efficiency, production productivity, inventory turnover, logistics performance, and process cycle time. Learning and growth indicators may include employee competencies, innovation, technological capabilities, and organizational knowledge.

The results indicate that the most important methodological issue is not the number of indicators but their strategic relevance. Organizations may have access to extensive operational data, but excessive measurement can create information overload. Therefore, indicators should be assessed according to strategic relevance, value-creation potential, causal significance, measurability, controllability, data reliability, and managerial usefulness.

This finding is consistent with Sha (2024), who demonstrates that management accounting tools have different effects across value-chain stages and that operational, customer, and financial value are interconnected. Consequently, indicators should be evaluated according to their position within the overall value-creation process rather than independently.

The methodology also emphasizes causal integration. Value-chain activities influence one another. For example, supplier quality can influence production quality;



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production quality can influence customer satisfaction; customer satisfaction can influence retention and revenue. Similarly, improved logistics performance may reduce delivery time and costs while increasing customer value. Establishing these relationships enables managers to identify the operational drivers underlying changes in financial and customer outcomes.

The findings also support the use of indicator prioritization. Not all value-chain measures should receive equal managerial attention. Strategically critical indicators should be distinguished from supporting operational indicators. This reduces unnecessary information and allows management to focus on measures with the greatest potential contribution to strategic objectives.

The integration of value-chain indicators also strengthens the forward-looking function of SMA. Financial measures primarily describe realized outcomes, whereas indicators such as supplier reliability, production quality, inventory turnover, logistics efficiency, innovation, and customer satisfaction can provide information about future performance. Consequently, value-chain indicators can function as leading indicators within the BSC.

The methodology should also consider performance beyond organizational boundaries. Suppliers, distributors, logistics providers, and customers can significantly influence organizational performance. Where reliable information is available, selected interorganizational indicators should therefore be incorporated into the strategic performance measurement system.

The results are consistent with Kumar et al. (2024), who identify systems thinking and strategic performance management as important directions in BSC research. They are also consistent with Sorooshian and Mad Ali (2024), whose system-dynamics perspective emphasizes the relationships between performance drivers and outcomes.

Another important finding is that the system should remain dynamic. Changes in technology, market conditions, customer requirements, supplier relationships, and competitive strategies may change the strategic importance of individual value-chain activities. Therefore, indicators should be periodically reviewed and modified, replaced, or eliminated where necessary.

Implementation also requires cross-functional cooperation. Management accountants, procurement specialists, production managers, logistics personnel, marketing departments, and senior management should participate in defining and interpreting value-chain indicators. This is necessary because value creation extends across traditional organizational boundaries.

Overall, the results support five methodological principles: strategic alignment, value-chain integration, causal connectivity, indicator prioritization, and continuous adaptation. These principles transform value-chain indicators from isolated operational measures into strategically connected components of the BSC and SMA system.

In conclusion, the study demonstrates that integrating value chain performance indicators into the Balanced Scorecard can strengthen Strategic Management Accounting



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and improve strategic performance measurement. The effectiveness of value-chain indicators depends not on their quantity but on their strategic relevance, reliability, measurability, and contribution to value creation.

The research establishes that value-chain indicators should be systematically connected with the financial, customer, internal-process, and learning and growth perspectives of the BSC. This enables managers to understand how procurement, supplier management, production, logistics, distribution, customer relationships, and innovation contribute to organizational performance.

The proposed methodology is based on five principles: strategic alignment, value-chain integration, causal connectivity, indicator prioritization, and continuous adaptation. Applying these principles can reduce fragmented performance measurement, improve management accounting information, and strengthen strategic decision-making.

The study further concludes that the BSC should be treated as a dynamic strategic management system rather than a static collection of indicators. Periodic evaluation is necessary because the importance of value-chain activities changes with technology, markets, suppliers, customers, and competitive conditions.

Overall, the improved methodology provides a basis for transforming value-chain performance indicators into strategically integrated components of Strategic Management Accounting. Its application can improve value creation analysis, coordination across value-chain activities, resource allocation, and strategic performance management.

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