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From Intellectual Capital to Value Creation: Innovation Orientation and Financial Capital Innovation as Strategic Mediators

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Abstract:

Research Aims:
This study aims to examine how intellectual capital contributes to firm value creation by investigating the mediating roles of innovation orientation and financial capital innovation in manufacturing firms. It seeks to move beyond a linear view of intellectual capital by explicating the mechanisms through which knowledge-based resources are transformed into economic value.
Methodology:
The study adopts a quantitative explanatory design using secondary data from manufacturing firms operating in Central Java. The proposed conceptual model is tested using Partial Least Squares–Structural Equation Modeling (PLS-SEM) to examine both direct and indirect relationships among intellectual capital, innovation orientation, financial capital innovation, and value creation.
Theoretical Contribution/Originality:
This research advances the intellectual capital literature by offering a process-oriented explanation of value creation. It extends resource-based and dynamic capabilities perspectives by positioning financial capital innovation as a critical yet underexplored mediating mechanism alongside innovation orientation in translating intellectual capital into firm value.
Practitioners/Policy Implications:
The findings suggest that managers should not only invest in intellectual capital but also actively foster innovation-oriented strategies and innovative financial practices to realize sustainable value creation. For policymakers, the results highlight the importance of supporting innovation ecosystems and financial flexibility, particularly in manufacturing sectors operating under resource constraints.
Research Limitations/Implications:
This study is limited by its reliance on secondary data and a cross-sectional design, which may not fully capture the dynamic evolution of intellectual capital and innovation over time. Future research is encouraged to employ longitudinal or mixed-method approaches and to test the proposed model across different industries and institutional contexts.

Keywords: Intellectual Capital, Value Creation, Innovation Orientation, Financial Capital Innovation, Manufacturing Firms.

INTRODUCTION

The evolution of the knowledge-based economy has precipitated a fundamental shift in corporate value creation theory, moving away from asset-centric paradigms toward perspectives that foreground intangible resources as the primary drivers of sustainable competitive advantage.

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Within the resource-based view and its subsequent theoretical extensions, firm value is no longer conceptualized as the mere outcome of accumulating conventional factors of production, but rather as a function of the organization's capacity to orchestrate, integrate, and transform knowledge into economically valuable strategic capabilities (Barney, 2018; Teece, 2018). This conceptual reorientation is particularly salient in the manufacturing sector, where persistent cost-efficiency pressures coexist with escalating demands for continuous and systematic innovation.

Within this context, intellectual capital occupies a central position as the institutionalized representation of organizational knowledge, encompassing human capital, structural capital, and relational capital. Contemporary scholarship underscores that intellectual capital serves as a foundational driver of value creation due to its capacity to enhance innovation productivity, improve the quality of managerial decision-making, and strengthen firms' strategic flexibility (Xu & Wang, 2019; Jordão & Almeida, 2020).

Nevertheless, the assumption that intellectual capital directly and unconditionally generates value has increasingly been called into question. A growing body of empirical evidence suggests that the mere presence of intellectual capital does not automatically translate into superior performance in the absence of strategic mechanisms that mediate the transformation of knowledge resources into measurable economic outcomes.

This conceptual tension points to the necessity of positioning innovation orientation as a pivotal explanatory variable in the relationship between intellectual capital and value creation. Innovation orientation reflects a firm's strategic posture toward learning, experimentation, and continuous renewal, thereby enabling organizations to activate their intellectual capital in a productive and purposeful manner (Calantone et al., 2019; Akman & Yilmaz, 2020). From this perspective, innovation orientation should not be interpreted merely as a managerial attitude, but rather as an organizational mechanism that systematically channels knowledge utilization toward value-generating activities. In the absence of a strong innovation orientation, intellectual capital is likely to remain latent, failing to yield meaningful competitive differentiation.

Nevertheless, the innovation literature also emphasizes that the effectiveness of innovation orientation is highly contingent upon the presence of an adaptive financial system. Innovation inherently requires flexible resource allocation, tolerance for risk, and the firm's capacity to manage long-term uncertainty. In this regard, financial capital innovation attains theoretical relevance as a mechanism that enables innovation orientation to operate effectively.

Financial capital innovation encompasses novel practices in working capital management, financing structures, and strategic investment decisions that support the exploitation of innovative opportunities (Martínez-Sola et al., 2018; Mazzucato & Kattel, 2020). Accordingly, financial capital innovation should not be viewed merely as an outcome of innovation processes, but rather as a structural prerequisite for knowledge-based value creation.

Although the relationships among intellectual capital, innovation, and value creation have been extensively examined, existing empirical evidence continues to reveal substantial inconsistencies. While some studies report a direct effect of intellectual capital on firm value, others demonstrate that this relationship becomes insignificant once strategic mediating variables are incorporated into the analytical model (Nadeem et al., 2019; Buallay et al., 2021). Such inconsistencies suggest inherent limitations in prevailing theoretical frameworks, which remain largely partial in nature—particularly in their tendency to disentangle, rather than integrate, the

mediating roles of innovation orientation and financial capital innovation as interrelated mechanisms of value creation.

The context of manufacturing firms in Central Java provides a particularly pertinent empirical setting in which to test and extend this theoretical framework. Firm characteristics marked by the predominance of small- and medium-sized enterprises, heterogeneous levels of technological adoption, and constrained access to external financing render value creation a process that is highly contingent upon the effective management of intellectual capital and innovation capabilities (Pratono et al., 2020; Wuryaningrat et al., 2022). Within this setting, innovation orientation and financial capital innovation function not merely as abstract theoretical mediators, but as tangible mechanisms that critically shape the sustainability of firm value at the regional level.

Building upon the identified theoretical and empirical gaps, this study proposes a conceptual model that positions intellectual capital as an antecedent of value creation, with innovation orientation and financial capital innovation operating as mediating mechanisms. This integrative approach enables a more nuanced understanding of how value creation processes unfold within manufacturing firms, while simultaneously extending the literature by bridging intellectual capital and financial innovation perspectives within a unified analytical framework. Accordingly, the contribution of this study lies not merely in testing intervariable relationships, but in advancing theoretical insight into the dynamic mechanisms underpinning value creation in a knowledge-based economy.

METHODS

This study adopts a quantitative approach with an explanatory research design to examine the causal relationships between intellectual capital and value creation, as well as the mediating roles of innovation orientation and financial capital innovation. The explanatory design is deemed appropriate as it facilitates the empirical testing of a theoretical model in which value creation emerges from indirect and interrelated strategic mechanisms, as advocated in the strategic management and resource-based accounting literature (Hair et al., 2019; Aguinis et al., 2020). This approach enables a rigorous analysis of the structural relationships among variables while providing a comprehensive assessment of the underlying mediation mechanisms.

The study population comprises manufacturing firms operating in the Province of Central Java. The selection of the manufacturing sector is grounded in its industrial characteristics, which simultaneously demand operational efficiency and robust innovative capabilities, rendering it particularly suitable for examining the role of intellectual capital in value creation (Teece, 2018). The sampling technique employed is purposive sampling, with inclusion criteria limited to firms that are actively operating, possess complete financial statements, and provide consistent data over the observation period. This approach is widely adopted in secondary data–based research to ensure internal validity and measurement consistency (Sekaran & Bougie, 2016).

This study relies on secondary data obtained from firms' annual financial statements and official corporate publications. The use of secondary data is considered appropriate given that the core variables of the study—value creation and financial capital innovation—are inherently objective and amenable to quantitative measurement, thereby minimizing potential respondent perception bias (Gujarati & Porter, 2020). Moreover, the utilization of secondary data enhances the replicability and cross-study comparability of the findings, which constitute essential prerequisites in empirical research grounded in accounting and finance.

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Intellectual capital is operationalized using the ValueAdded Intellectual Coefficient (VAIC) approach, which assesses the efficiency of value creation derived from human capital, structural capital, and physical capital. VAIC is selected as it offers a systematic quantitative framework for capturing the contribution of knowledge-based assets to firm performance and has been extensively applied in cross-country and cross-industry empirical studies (Pulic, 2008; Xu & Wang, 2019). This approach enables intellectual capital to be evaluated as a value-creation process rather than merely as a static stock of resources.

Innovation orientation is measured through indicators reflecting the intensity of product, process, and organizational practice renewal. This measurement aligns with the view that innovation orientation constitutes an organizational strategic posture that mediates the transformation of knowledge into economically valuable innovative capabilities (Calantone et al., 2019; Akman & Yilmaz, 2020). Accordingly, innovation orientation is conceptualized as an activation mechanism for intellectual capital, rather than as an outcome of innovation per se.

Financial capital innovation is operationalized as a firm's capability to manage and allocate financial resources adaptively in support of innovative activities and long-term value creation. This construct encompasses financial flexibility, working capital management, and the efficiency of financing structures, as emphasized in the financial innovation literature that positions financial management as a strategic enabler of innovation (Martínez-Sola et al., 2018; Mazzucato & Kattel, 2020).

Firm value creation is measured using value-based performance indicators that capture both economic efficiency and market perceptions of the firm's future prospects. The adoption of value-based measures is considered more representative than traditional accounting indicators, as they are better suited to capturing long-term value creation and sustainable competitive advantage (Rappaport, 2016; Nadeem et al., 2019).

Data analysis is conducted using Partial Least Squares–based Structural Equation Modeling (PLS-SEM). PLS-SEM is selected due to its capacity to estimate structural models involving latent constructs and complex mediation mechanisms, as well as its robustness with respect to sample size and data distributional assumptions (Hair et al., 2019). This approach is particularly well suited to theory development and theory testing–oriented research, especially in the context of exploring knowledge-based value creation mechanisms.

The analysis proceeds in two primary stages: first, the evaluation of the measurement model to establish convergent and discriminant validity; and second, the assessment of the structural model to test causal relationships and mediation effects. Path significance is examined using a bootstrapping procedure to obtain robust and unbiased parameter estimates (Henseler et al., 2016).

RESULT

Structural model analysis using Partial Least Squares–Structural Equation Modeling (PLS-SEM) indicates that all constructs satisfy the required criteria for validity and reliability, thereby confirming the empirical model's adequacy for causal interpretation. The results of the structural relationship testing reveal that intellectual capital exerts a positive and statistically significant effect on the value creation of manufacturing firms in Central Java. This finding corroborates the argument that the efficient utilization of knowledge-based resources directly contributes to the enhancement of firms' economic value, particularly in industrial contexts that are increasingly reliant on non-physical capabilities (Xu & Wang, 2019; Nadeem et al., 2019).

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Beyond this direct effect, intellectual capital is also found to have a positive and significant influence on innovation orientation. This result suggests that firms with a stronger knowledge base are more likely to cultivate a strategic posture characterized by openness to renewal, experimentation, and organizational learning. Such a pattern is consistent with the literature that positions intellectual capital as a critical antecedent to the development of a sustained innovation orientation (Calantone et al., 2019; Akman & Yilmaz, 2020).

The analysis further demonstrates that intellectual capital significantly affects financial capital innovation. This finding implies that the management of knowledge and internal competencies not only stimulates technological innovation but also facilitates innovative practices in financial resource management. Accordingly, firms endowed with robust intellectual capital tend to be more adaptive in designing financing structures and managing working capital in ways that support long-term value creation (Martínez-Sola et al., 2018; Mazzucato & Kattel, 2020).

Moreover, mediation analysis reveals that innovation orientation significantly mediates the relationship between intellectual capital and value creation. This result indicates that the impact of intellectual capital on value creation operates through strategic mechanisms that enable the conversion of knowledge into innovative outputs. In addition, financial capital innovation is also confirmed as a significant mediator, underscoring that knowledge-based value creation is highly contingent upon firms' capabilities to manage financial resources in innovative ways. When both mediating variables are simultaneously incorporated into the model, the indirect effect of intellectual capital on value creation becomes more pronounced than its direct effect, providing evidence of a dual mediation mechanism.

DISCUSION

The findings of this study provide empirical support for the resource-based view and dynamic capabilities perspectives, which conceptualize intellectual capital as a strategic resource that is valuable, rare, and difficult to imitate. However, the results also underscore that economic value does not arise automatically from the mere existence of intellectual capital, but rather through organizational mechanisms that activate and strategically deploy such resources (Barney, 2018; Teece, 2018). In this regard, the study reinforces critiques of deterministic approaches that position intellectual capital as a direct antecedent of value creation without adequately accounting for mediating processes.

The mediating role of innovation orientation highlights that intellectual capital functions as a strategic input that requires an organizational orientation toward innovation in order to generate value. This finding aligns with prior studies emphasizing innovation orientation as a transformational mechanism linking knowledge resources to firm performance and value outcomes (Akman & Yilmaz, 2020; Pratono et al., 2020). In the manufacturing context, innovation orientation enables firms to translate internal competencies into sustained product differentiation and process efficiency.

Furthermore, the evidence regarding the mediating role of financial capital innovation offers a relatively novel theoretical contribution to the intellectual capital literature. In contrast to prior research that tends to treat technological innovation and financial management as distinct domains, the present findings demonstrate that financial capital innovation constitutes a key mechanism in knowledge-based value creation. Innovative financial management practices allow

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firms to align innovation-related investments with financial capacity, thereby mitigating innovation risk and enhancing value sustainability (Mazzucato & Kattel, 2020; Buallay et al., 2021).

The context of manufacturing firms in Central Java adds an empirically rich dimension to this discourse. Firm characteristics dominated by medium-scale operations and constrained resource endowments necessitate a close integration of intellectual capital, innovation orientation, and financial capital innovation. These findings suggest that value creation at the regional level is intrinsically linked to firms' capabilities to manage structural constraints through coordinated knowledge-based and financial innovation.

Despite its theoretical and empirical contributions, this study is subject to several limitations that warrant careful consideration. First, the reliance on secondary data constrains the study's ability to capture qualitative dimensions of innovation orientation and intellectual capital, such as organizational culture and informal learning practices. Second, although the VAIC approach to measuring intellectual capital is methodologically well established, it primarily reflects value creation efficiency and does not fully capture the complexity of organizational knowledge dynamics. Third, the research context, which is confined to manufacturing firms in Central Java, limits the generalizability of the findings to other sectors or regions with differing institutional characteristics. These limitations open avenues for future research to employ longitudinal designs, mixed-methods approaches, or cross-country contexts in order to enhance external validity and deepen analytical insight.

CONCLUSION

This study seeks to elucidate the mechanisms of knowledge-based value creation by positioning intellectual capital as a strategic resource and examining the mediating roles of innovation orientation and financial capital innovation within manufacturing firms in Central Java. The findings demonstrate that intellectual capital plays a critical role in firm value creation, both directly and through more complex strategic mechanisms. However, the results clearly indicate that the influence of intellectual capital on value creation is not deterministic; rather, it is contingent upon the organization's ability to activate knowledge through an innovation-oriented strategic posture and innovative financial capital management.

From a theoretical standpoint, this research enriches the resource-based view and dynamic capabilities literature by shifting the analytical focus from a linear association between intellectual capital and value creation toward a more process-oriented understanding. By integrating innovation orientation and financial capital innovation within a unified analytical framework, the study reveals that value creation emerges from the dynamic interaction among knowledge-based capabilities, an innovation-driven strategic posture, and the support of an adaptive financial system. This insight offers a conceptual contribution by positioning financial capital innovation as a mechanism that is equally critical as knowledge-based innovation in the value creation process.

Empirically, the study provides contextual evidence from manufacturing firms operating in a regional setting that has been relatively underexplored in the international literature. The results underscore that under conditions of resource constraints and competitive pressure, the integration of intellectual capital, innovation orientation, and financial capital innovation constitutes a fundamental prerequisite for sustaining value creation. Accordingly, this research not only broadens the empirical scope of intellectual capital studies but also offers a perspective that is

particularly relevant for the strategic development of manufacturing firms in emerging regional contexts.

LIMITATION

Although this study offers substantial theoretical and empirical contributions, several limitations merit careful consideration. First, the reliance on secondary data constrains the analysis in capturing qualitative dimensions of intellectual capital and innovation orientation, such as organizational culture, informal learning practices, and strategic decision-making processes. Future research is therefore encouraged to combine quantitative approaches with qualitative methods in order to gain deeper insights into the internal dynamics of organizations.

Second, intellectual capital is measured using the VAIC approach, which emphasizes the efficiency of value creation based on financial data. While this method is well established and widely applied, VAIC does not fully represent the complexity and qualitative richness of organizational knowledge. Subsequent studies may benefit from developing or integrating more comprehensive intellectual capital measurement indicators that more accurately capture cognitive and relational dimensions.

Third, the research context, limited to manufacturing firms in Central Java, restricts the generalizability of the findings to other industrial sectors or regions with different institutional characteristics. Future research could extend the geographical scope or conduct cross-sectoral and cross-country studies to test the robustness and consistency of the conceptual model across more diverse contexts.

Finally, the cross-sectional research design limits the ability to capture the long-term dynamics of value creation. Longitudinal studies are needed to better understand how intellectual capital, innovation orientation, and financial capital innovation evolve over time and how these dynamics influence the sustainability of firm value.

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