

From Policy to Practice: Understanding the Challenges of Middle Management in Embedding ESG Targets into Daily Operations in the Manufacturing Industry

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Abstract

In recent years, manufacturing organizations have increased their dedication to Environmental, Social, and Governance (ESG) objectives as part of their overall sustainability initiatives. Yet, it is difficult to translate these commitments into operational practice. Based on the evidence of recent research from manufacturing firms such as Jeong et al. (2025) on the variation in ESG performance across managerial levels and Barletta et al. (2021) on the importance of organizational readiness as a prerequisite for the implementation of sustainability, this paper takes a narrative and conceptual approach to investigate the role of middle managers in bringing ESG targets to life in day-to-day operations. The abstract is still too descriptive and lengthy, and does not clearly state the research gap and specific theoretical contributions. It is recommended to sharpen the focus on conceptual novelty and explicitly state the article's main contributions to ESG literature and the role of middle management. (2022). Complemented by Corporate Sustainability and the organizational integration perspectives, the literature reveals that although institutional pressures steer firms toward ESG alignment, actual operational embedding depends strongly on internal structures, managerial competence, and organizational readiness. Middle managers are required to translate top-down commitments, to apportion resources, and to balance production needs with sustainability demands in environments that are often marked by workforce complexity and resource constraints. This paper concludes with a conceptual model that shows how institutional forces interact with organizational support ecosystems and middle management capability, offering insights into why ESG integration is deep in some manufacturing firms and shallow in others. The study provides a basis for understanding the ESG implementation gap and directions for future empirical research in the manufacturing sector.

Keywords: corporate sustainability, ESG implementation, institutional theory, manufacturing industry, middle management

Introduction

The need to maintain sustainability and ethical accountability has become a strategic demand in the manufacturing industry, driven by increasingly high levels of regulatory control, investor pressure, and the dominance of global sustainability regimes, such as the Global Reporting Initiative (GRI), the United Nations Sustainable Development Goals (SDGs), and the Task Force on Climate-Related Financial Disclosures (TCFD). In line with this, many manufacturers have made a formal commitment to Environmental, Social, and Governance (ESG) goals in their corporate strategies. However, despite the spread of ESG requirements and reporting frameworks, a growing spectrum of literature highlights a fundamental conflict between top-tier ESG promises and their practical application in the daily manufacturing processes.

Most of the previous literature has focused on ESG adoption through a macro-strategic perspective, which highlights the external pressures of the institution, governance tools, or performance indicators at the firm level. An example of such theoretical approaches is the institutional theory that assumes that organizations are coerced, normed, and mimed into complying and being legitimate in ESG. Even though this literature has been useful in explaining the motives behind the adoption of ESG, it provides limited information on the translational processes involved in entrenching such policies in the daily realities of operations of complex manufacturing settings. As a result, the implementation of ESG is often pushed to a top-down or structural formulation with limited attention to the organizational actors responsible to execute sustainability imperatives into the operational praxis.

Recent manufacturing-oriented studies have shown that ESG efficacy differs significantly between the levels of management, hence demonstrating that official statements cannot ensure operational integration. Specifically, middle managers are placed at a structurally central, but under-researched nexus between strategic intent and operational implementation, charged with the responsibility of decoding ESG directives, resource allocation, balancing sustainability objectives with production demands, and integrating the concept of ESG into day-to-day operations.

This paper aims at filling this gap by defining a conceptual framework that predetermines the role of middle management to bridge the ESG implementation gap in manufacturing companies. Based on the Institutional Theory and Corporate Sustainability Theory, the paper argues that ESG integration is not only dependent on external pressures or organizational structures, but on the convergence of institutional forces, internal support systems, and competencies and sustainability-oriented mindsets of middle managers.

The theoretical contribution of the paper is to place middle managers on the center stage of the transformation of ESG policies into operational practice in the context of manufacturing. Instead of viewing ESG implementation as a linear or strictly structural process, the suggested framework approaches the conceptualization of the ESG embedding as a multilevel and dynamic process influenced by institutional pressures, organizational preparedness, and managerial agency.

In that way, the research provides a more refined description of the varying levels of ESG integration, such as deeply embedded, tokenistic, or fragmented, in manufacturing companies, and sets a conceptual basis for the future empirical study of the application of ESG at the operational level.

Theoretical Review

Institutional Theory

Institutional Theory guides on how forces from the environment - coercive, normative, and mimetic influence decisions made by manufacturers. More recent research still shows the important influence of institutional forces on industrial adoption of ESG (Horn et al., 2009). For example, Alinda and Kaawaase (2025) show that various forms of institutional pressure lead to

environmental innovation in manufacturing establishments, highlighting the roles of forces like regulatory enforcement, industry standards, and attentiveness to market stakeholders that drive organizations to pursue legitimacy. Such external expectations affect strategic decision-making as well as operational-level procedures and practices that middle managers need to interpret and carry into effect on the fly.

Similarly, Hariyani et al. (2022), while institutional pressures push manufacturing companies towards sustainability, most organizations face structural and cultural barriers when trying to successfully operationalize those ideals. These barriers often manifest themselves at the level of middle management, who must balance external pressures with production possibilities, resource limitations, and workforce capabilities. This resonates with the general premise that institutional pressures are not a standalone force, but have to be internalized and translated by organizational structure and managerial agency. It is in this sense that middle managers are institutional interpreters negotiating the requirement for legitimacy with operational floor realities.

Corporate Sustainability and Organizational Integration

Corporate Sustainability Theory calls for organizations to combine environmental, social, and economic performance in one set of integrated strategies and aligned internal systems. This connection between the two is especially important in the manufacturing industry, where production processes have an immediate impact on the environment and supply-chain networks are complex. Barletta et al. (2021) argue that organizational readiness, including leadership commitment, clear communication channels, and supportive governance mechanisms, is necessary to transform sustainability strategies into daily routines in manufacturing companies. This shows that the sustainability outcome is not just a function of strategic intent but also hinged on the underlying internal setup.

In addition, Jeong et al. (2025) show that the effects of ESG management activities on organizational performance are different between managerial levels of manufacturing companies. Their research strengthens the importance of middle managers as functional leaders who act as the implementers of ESG policies, resource allocation, and impact employee engagement. These observations echo the view that Corporate Sustainable practices need to be consolidated in strong mechanisms such as training, performance measurement, and cross-functional coordination so that sustainability stimulus becomes an integral part of everyday work. Thus, successful organizational integration is dependent on the alignment between structural, cultural, and managerial aspects that facilitate manufacturing companies in integrating and implementing environmental, social, and governance-related initiatives.

Integrating Theories for the ESG Implementation Gap

Institutional Theory and Corporate Sustainability integration provides strong grounds to explain the longstanding gulf dimensionality on ESG policy vs. operational adoption on manufacturing firms. Institutional pressures are the external motivation for the adoption of ESG, and Corporate Sustainability focuses on the internal structures and managerial competencies required to turn these pressures into reality. This combination shows the important function of middle management in interpreting and converting the external demands into internal capabilities.

Recent literature supports this synthesis: Alinda and Kaawaase (2025) demonstrate that institutional forces stimulate environmental innovation but require support from organizational capability; Barletta et al. (2021) highlight the need for readiness and systemic alignment; while Hariyani et al. (2022) emphasized the challenges that stand in the way of operational-level sustainability practices becoming entrenched. These results jointly indicate that ESG integration gaps are not only due to low regulatory pressures or weak strategic orientation but also from the mismatch between external pressures, internal systems, and managerial actions.

This integration is the theoretical basis for this research. It claims that the Institutional Pressures, Organizational Support and Structure, and Managerial Competence and Mindset collectively influence the embeddedness of ESG goals in the day-to-day operations of manufacturing. Middle managers are at the heart of this dynamic, turning policy into practice, bridging institutional imperatives and organizational practices, and making the promise of sustainability real in manufacturing.

Conceptual Framework and Propositions

This section is an attempt to describe how these three Institutional Pressures, Organizational Support & Structure, and Managerial Competence and Mindset interact with one another to shape the incorporation of ESG goals into day-to-day manufacturing operations. Building on Institutional Theory and Corporate Sustainability Theory, the framework assumes that the ability of middle managers to translate policy into practice is based on the congruence between external pressures, internal resources, and management's discretion. Learnings from the latest manufacturing research - in particular, including that of Jeong, Sung, and Shin (2025), Barletta et al. (2021), Hariyani et al. (2022), and Alinda and Kaawaase (2025) support the need to include these factors in a model for understanding why there are differences in ESG adoption between manufacturing contexts.

The theoretical framework developed in this study builds on the combination of Institutional Theory and Corporate Sustainability Theory, demonstrating the role of middle management in the translation of ESG policies to actual operational activities in manufacturing organizations. Institutional Theory explains the processes that manufacturing firms follow to comply with external drivers such as legislation, customer demands, and benchmarks set by the industry. For example, Alinda and Kaawaase (2025), point out that manufacturing firms are under a powerful coercive and normative pressure to go in the direction of environmental innovations, and they are also predisposed to embrace ESG according to initiatives, motivated by legitimacy and competitive reasons.

Meanwhile, Corporate Sustainability Theory focuses on internal structures, leadership integration, and operational systems to internalize sustainability in the manufacturing process. Barletta et al. (2021) highlight that organizational readiness, underpinned by governance, training, and clear communication, is vital to ensure sustainability is integrated at the factory level. The intermediary function of middle managers is especially important given that, as Jeong et al. (2025) show, ESG management practice effectiveness varies by managerial levels in manufacturing companies, suggesting middle management plays a role in translating sustainability objectives into action.

Taken together, these findings offer a multilevel account of ESG integration in manufacturing: subject to exogenous institutional pressures and endogenous organizational factors within the company, the middle managers can act as a linchpin between those two.

While this is a conceptual and narrative-based study, the framework plays an important role in organizing the discussion. Unlike empirical studies that test hypotheses, the conceptual framework here serves as a guide to structure ideas, integrate theories, and interpret the way that middle managers bridge the gap between ESG policies and day-to-day manufacturing operations. The model shows how institutional pressures, internal organizational support systems, and managerial competencies interact sequentially to determine the degree to which ESG targets are embedded into day-to-day activities on the factory floor. This helps to explain why some manufacturing firms are successful in making sustainability part of their routine, while others have greater difficulty moving beyond token compliance.

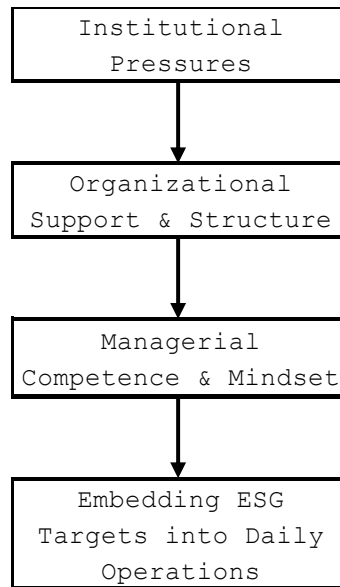


Figure 1: Conceptual framework

Proposition 1: Institutional Pressures

According to Institutional Theory, external pressures affect the degree of legitimacy and compliance to legislation by manufacturing companies, as well as guidelines or industry norms. Alinda and Kaawaase (2025) find that the institutional pressures, coercive, normative, and mimetic, have a significant influence on some aspects of environmental innovation decisions among manufacturing firms. But the degree to which firms are able to operationalize ESG commitments is conditional on the interpretation and playing out of these pressures by internal stakeholders, especially middle managers.

P1: Strong institutional pressures are positively related to the embedding of ESG targets in manufacturing operations.

Proposition 2: Organizational Support

The organizational systems, such as governance, communication pathways, and resource allocation, are pivotal to translating ESG objectives into a workable reality on the factory floor. Barletta et al. (2021) noted that manufacturing organizations need organizational readiness and to be responsible for leadership and systemic sustainability practice adoption into routine. Institutional pressures alone may only result in symbolic compliance without such internal support. In a manufacturing environment, there are also operational constraints such as space, time for materials, and limited resources that make the need for a robust organizational structure even more important.

P2: Strong organizational support and structure have a positive moderating effect on the relationship between institutional pressures and ESG embedding in manufacturing operations.

Proposition 3: Managerial Competence and Mindset

Middle managers play a key role in the translation and implementation of ESG goals in the day-to-day production operations. Jeong, Sung, and Shin (2025) found that the management level plays a major role in the implementation of ESG activities at manufacturing companies because the ability of middle managers to adapt, sustainability knowledge, and leadership orientation determine whether ESG values are integrated into workplace rituals. Moreover,

Hariyani et al. (2022) highlight that organizational barriers such as cultural resistance and poor training impede the effectiveness of middle managers in implementing sustainability initiatives.

P3: Managerial competence and a sustainability-oriented mindset have a positive impact on the integration of ESG targets into the day-to-day manufacturing operations.

Proposition 4: Incorporating ESG Targets into Day-to-Day Operations

Leveraging on both theoretical views, our framework implies a sequential influence, rather than a simple end-mediated relationship. Institutional pressures create the initial external motive for ESG integration. Organizational support and structure - the internal processes by which this pressure is translated into activities, systems, and resources. Finally, middle managers - being competent and having a sustainability mind-set can significantly enable in implementing the ESG practices at the manufacturing level. This cascading sequence is in accordance with the conclusions reached by Alinda and Kaawaase (2025), Barletta et al. (2021), and Hariyani et al. (2023), who all stress that sustainability embedding needs to be aligned at an institutional, organizational, and managerial level.

P4: Institutional pressures affect the embedding of ESG by a sequential process with organizational support and managerial competence as progressive enablers.

Research Methods

This study uses a conceptual and narrative-based methodological approach aimed at developing theoretical insights into the ways in which middle managers embed ESG targets into daily manufacturing operations. Given the exploratory nature of the research and the fact that the research is more about synthesizing existing knowledge rather than generating empirical data, a conceptual methodology offers the best foundation for understanding the interplay between institutional pressures, organizational readiness, and managerial capabilities.

The approach starts with a detailed review of the current literature on ESG implementation, sustainable manufacturing, and related organizational theories, with a special focus on recent contributions that emphasize the increasing role of middle management in the operationalization of sustainability strategies. Through this review, the study identifies critical themes, conceptual tensions, and explanatory mechanisms that contribute to the ESG implementation gap in manufacturing firms.

These themes are analytically integrated using Institutional Theory and Corporate Sustainability as overarching lenses for the study to interpret the convergence of drivers from the external and the internal dynamics of the organization in the role of middle managers. The process includes iterative comparison of findings across studies, conceptual clustering of repeated insights, and theoretical mapping of relationships among key variables.

This methodological approach supports the construction of a conceptual framework and propositions that articulate a sequential pathway through which institutional forces, organizational structures, and managerial competence shape ESG embedding. This approach is especially appropriate for furthering theoretical development in fields where empirical research is still in its infancy and where a basis for future qualitative or quantitative research to test, refine, or extend the proposed framework can be established.

Results and Discussion

This theoretical work contributes to the current knowledge of ESG application in manufacturing by overcoming the description of institutional pressures and organizational preparedness and determining how ESG policies can be converted into functional practice. Instead of perceiving ESG integration as a progressive result of external compliance or strategic purpose, the suggested framework emphasizes the concept of ESG embedding as a multilevel

and interpretive process, which is conditioned by managerial agency in the context of organizational limitations.

The most important conceptual point of this framework is that institutional pressures, though needed, are not sufficient to generate significant ESG integration at the operational level. Current literature tends to believe that regulatory requirements, stakeholder pressure, and industry standards will automatically trickle down into organizational activities. The framework that has been created in this paper, however, indicates that these pressures merely provide a situation where implementation is possible, but do not ensure it. These ESG targets can only be operationally relevant when they are processed by organizational support systems and implemented by middle managers who must balance the sustainability goals with the production needs.

The framework also contributes to the existing knowledge by conceptualizing middle managers as not just the implementers of the ESG policies but as participants in the process of interpretation. This throws a spanner into the unspoken belief in a lot of sustainability literature that sustainability failure or success is mostly stipulated at the strategic or governance level. Middle managers in manufacturing settings that are typified by operational rigidity, cost pressures, and workforce heterogeneity use discretion in prioritizing, adapting, and even reinterpreting ESG initiatives. Their effectiveness and sustainable-mindedness thus determine either the integration of ESG practices into routine practices or symbolic performances.

The other key element of the analysis is the sequential logic that the framework suggests. In contrast with the current models, where the organizational readiness or managerial capacities are viewed as the parallel antecedents to the ESG performance, in this study, the conceptualization of the ESG embedding is viewed as a progressive process. The establishment of ESG is triggered by institutional pressures, which are then converted by organizational structures into systems and resources, and managerial competence is what defines how far ESG is implemented in day-to-day operations. Such sequencing can be used to understand why manufacturing companies operating in similar regulatory contexts tend to have significantly diverging degrees of ESG integration.

The framework also reveals a serious conflict between efficiency in operations and the goals of sustainability. Although ESG policies often focus on the long-term value creation, short-term productivity goals often guide manufacturing operations. The discussion indicates that in the absence of proper organizational support, including aligning performance metrics, training, and resource allocation, middle managers are most likely to prioritize ESG over production continuity. This revelation extends the theory of corporate sustainability by directly connecting the sustainability performance to the dynamics of operations decision-making instead of abstract strategic alignment.

This paper is a more refined explanation of the ESG implementation gap by combining institutional theory with the concept of corporate sustainability using the prism of middle management. It redefines ESG integration as a socially constructed organizational process that is managerially interpreted and realized in daily practices. This view can be used to explain the reason why certain manufacturing companies go beyond compliance to deeply rooted sustainability and the reason why others are languishing in the symbolic adoption of sustainability despite the same pressures.

Discussion

Recent research for the manufacturing industry is now making clear that successful ESG implementation goes beyond strategic commitment or compliance; a coordinated, behavioral, and operational transformation of the business will be required. While there is pressure from institutions for manufacturers to adopt ESG strategies, this doesn't immediately translate into tangible changes on the production line. Alinda and Kaawaase (2025) reveal that manufacturing firms are highly influenced by institutional pressures as regards coercive, normative, and

mimetic pressures; however, the extent to which these are acted upon to achieve environmental innovations depends on internal readiness and managerial action.

In manufacturing environments, middle managers are in a very complex position. They are responsible for making sense of top-down sustainability directives, while at the same time, they are trying to meet production targets and manage production constraints, as well as direct frontline employees. Jeong et al. (2025) found that there is a significant difference in the ESG performance between the different managerial levels in manufacturing companies, highlighting the key role of middle managers in shaping participation in the workplace and responsiveness to ESG. These findings are consistent with the view that middle managers serve as the organizational "translators" who translate sustainability intentions into the routines of the day.

But the production environment is a special case. Hariyani et al. (2022) also found a number of organizational obstacles, such as operational inflexibility, scarce resources, and cultural opposition to carrying out sustainable manufacturing in practice. These hurdles often reduce the ability of middle managers to incorporate ESG targets into operations. Meanwhile, Barletta et al. (2021) emphasize that, for manufacturing firms to effectively align sustainability with their operational routines, a planned organizational readiness with constant leadership support, productive communication channels, and well-designed training is necessary.

Taken together, these studies support the case that middle managers are not merely implementers of ESG policies but rather strategic actors who influence the understanding, implementation, and maintenance of sustainability in manufacturing environments. Their role is especially critical where institutional pressures, organizational systems, and workforce expectations intersect.

Theoretical Implications

This study adds to the growing body of literature on Institutional Theory, Corporate Sustainability, and ESG implementation by integrating these perspectives within the specific context of manufacturing.

Traditional interpretations of Institutional Theory tend to view organizations as being responsive in a uniform way to external pressures to maintain legitimacy. However, findings from manufacturing companies, Alinda & Kaawaase (2025) and Hariyani et al. (2022) indicate that responses may differ depending on the level of operational complexity, resource sufficiency, and managerial perception. This underlines the significance of human agency, in particular at the middle management level, as to how institutional expectations are implemented on the ground.

Governance and strategic alignment have been given priority in Corporate Sustainability research. This research adds to this discussion by bringing the conversation down to operational integration and suggesting that sustainability is only perceived as a real issue when it gets incorporated into everyday manufacturing operations. Findings by Barletta et al. (2021) and Jeong et al. (2025) further justify that sustainability been enabled by internal systems, coherence of leadership, and management capacity.

By integrating Institutional Theory and Corporate Sustainability, the framework provides an overall explanation of why ESG embedding is successful in some manufacturing firms, but is merely symbolic in others. This synthesis supports the need for alignment between the external institutional drivers and internal organizational conditions, with middle managers serving as the mechanism that binds these forces together.

Practical Implications

This paper outlines a set of operationally-based implications to manufacturing companies that aim to transform ESG commitments into practice, especially the role of the middle managers.

To begin with, the manufacturing organizations must clearly identify middle managers as central agents of ESG implementation, but not as passive recipients of sustainability directives. Practically, this requires that the ESG responsibilities are enshrined in the job scope, job performance standards, and the decision-making authority of the middle managers. To illustrate, the production supervisors and plant managers must be allowed some discretionary powers to modify the workflows, maintenance schedules, or sourcing decisions in such a manner that they enhance the ESG goals without affecting the continuity of the operations.

Second, the ESG targets should be operationalized into production-relevant metrics that can be taken action by the middle managers. Manufacturing companies should not just use corporate-level ESG indicators, but should translate sustainability objectives into shop-floor KPIs, e.g., the energy intensity per unit of production, waste-reduction metrics, safety incidents, or labor stability metrics. By aligning these metrics with the current production dashboards, the middle managers would be able to incorporate the considerations of ESG in the normal operational decision-making process.

Third, there should be specific capability development. Middle managers often do not have formal sustainability training, even though they are the ones who are to undertake the implementation. In this respect, manufacturing companies are advised to offer useful ESG education on operational problem-solving, trade-off management, and continuous improvement methods like lean and process optimization. This will provide the middle managers with the skills that would help them balance between sustainability objectives and productivity demands within the actual manufacturing environment.

Fourth, the organizational support structures should be modeled in such a manner that it minimizes the implementation friction at the operational level. This comprises the setting aside of time, financial resources, and inter-departmental assistance of ESG-related projects, and the assurance that sustainability goals are not overridden by the short-term production motives. Without this alignment, middle managers might have to focus on output goals at the cost of ESG integration, leading to symbolic and not substantive adoption.

Lastly, the top management ought to put in place feedback systems that enable the middle managers to report on the implementation problems upwards. Constant sustainability strategy refinement can be achieved by holding regular ESG review meetings at the departmental level or the plant level to bring operational constraints that can be reviewed and improved according to ground realities. This bottom-up feedback contributes to organizational learning and increases the sustainability of the ESG practices in the manufacturing settings.

Taken together, these implications are transforming the practice of ESG implementation as a move beyond abstract corporate commitment to operational practice, which is part of daily decisions in manufacturing. Empowering middle managers with power, resources, and tools of practice can allow manufacturing companies to go beyond compliance-based ESG implementation to long-term and significant integration.

Policy and Societal Implications

The findings of this study have broader implications than for individual firms. These findings have implications for policymakers when developing ESG policies for the manufacturing industry by considering operational limitations, limited capacity, and the importance of middle managers in implementing them. Promoting transparency, information sharing, and industry collaboration can help create an atmosphere that promotes ESG initiatives. Consumer demand for responsible manufacturing practices will continue to grow, and parallelism between policy design and organizational realities becomes imperative for the sustainable transformation of industry.

Future Research Directions

Given the conceptual and narrative nature of this study, future research may extend this work by using qualitative or quantitative methods. For example, qualitative interviews could be conducted to explore how middle managers overcome barriers to implementing ESG in different sub-sectors of manufacturing. Quantitative empirical studies can further examine mediating or moderating effects of organizational readiness, managerial capability, and cultural influence on ESG performance in manufacturing. Comparisons between developed and emerging manufacturing economies may also help to identify different institutional dynamics and organizational reactions.

Conclusion

The study aims to further enhance the understanding of how Environmental, Social, and Governance (ESG) commitments can be transformed in terms of corporate policy to operational daily practice in manufacturing companies. In filling a long-standing gap in the sustainability literature, the paper builds an imaginary framework that predicts the central role of middle management as the key channel between the extrinsic institutional pressures and the intrinsic organizational systems and operational realities.

The main contribution of this article is the theoretical one. By integrating the concepts of Institutional Theory and Corporate Sustainability Theory, the paper goes beyond the compliance-based explanations of ESG adoption and redefines ESG implementation as a multilevel, sequential, and interpretive process. The framework shows that ESG integration in manufacturing is driven not only by regulatory pressure or strategic intent, but also by the interplay between institutional forces, organizational support structures, as well as competencies and sustainability-oriented mindsets of middle managers. In this sense, the paper identifies middle managers as agents who interpret and act, whose actions make ESG initiatives either an embedded routine or a symbolic gesture.

One of the secondary contributions is the location of the ESG implementation to the operational limitations inherent to manufacturing environments. Unlike previous literature, which considers sustainability integration as a generic organizational issue, the article explains how the pressures of production, resource constraints, and complexity of human resources influence the implementation of ESG at the shop-floor level. This view provides a reason as to why there is a variation in the outcomes of ESG between manufacturing companies that are subject to similar institutional environments and a more realistic view of the sustainability practice.

Being a conceptual and narrative-based research, this study has a number of limitations. The offered framework is yet to be empirically tested and is based on the synthesis of the existing literature; therefore, causal relations and boundary conditions are to be proven after the future qualitative and quantitative research. Besides, though the framework is specific to manufacturing organizations, the differences between manufacturing sub-sectors and institutional contexts between different countries are not explicitly analyzed.

Despite these shortcomings, the study has a clear research agenda. Empirical studies have the potential to probe the sequential associations that are assumed within the framework, determine the mediating position of organizational support and managerial competence, and examine the interaction of institutional pressures and operational realities in a wide range of manufacturing settings. Shifting the analysis toward the middle management and operational embedding, this article helps to develop a more refined and practical perception of the ESG implementation, thus providing a starting point to both theoretical development and practical improvement in sustainable manufacturing.

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