

SUSTAINABLE STRATEGIES AND COMPETITIVE ADVANTAGE IN
MULTINATIONAL CORPORATIONS: THE MEDIATING ROLES OF
KNOWLEDGE SHARING AND EMPLOYEE COMMITMENT WITH THE
MODERATING EFFECT OF ORGANIZATIONAL CULTURE

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Abstract

This study investigates the role of sustainable strategies in shaping competitive advantage, with a particular focus on the mediating effects of knowledge sharing and employee commitment, and the moderating role of organizational culture. Drawing on the knowledge-based view and social exchange perspectives, a quantitative, cross-sectional design was employed, and data were collected from firms in Pakistan. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to test the hypothesized relationships. The results reveal that sustainable strategies have a positive but statistically insignificant direct effect on competitive advantage. However, when mediated through knowledge sharing and employee commitment, the effects become significant, indicating that these internal mechanisms are essential channels for translating sustainability initiatives into firm-level performance outcomes. In contrast, organizational culture does not moderate the relationships between sustainable strategies and competitive advantage, employee commitment, or knowledge sharing. These findings suggest that while sustainability orientation is crucial, its benefits are realized primarily through fostering knowledge exchange and employee dedication rather than relying on culture to strengthen the effects.

INTRODUCTION

In today's fast-changing business environment, organizations are under mounting pressure to not only survive but to thrive sustainably over time. Many firms now recognize that long-term success

depends less on one-off advantages and more on continuous renewal, learning, and adaptability. Within this discourse, scholars and practitioners increasingly view internal capabilities especially how

knowledge is created, shared, and mobilized as central to sustaining advantage. The shift from resource-based thinking to knowledge-based thinking underscores that intangible assets are key to maintaining performance in volatile markets (see the knowledge-based view). Moreover, the way a firm configures its internal environment through values, norms, and relationships can either facilitate or hinder that knowledge flow. As a result, attention has turned to how organizational systems such as culture and employee attitudes support or block knowledge dynamics. At the same time, many firms pursue sustainable strategies to balance economic, environmental, and social goals and wonder how these strategic orientations mesh with internal behavioral and cultural processes. Understanding how these elements interconnect has become a pressing question in both theory and practice.

In recent years, empirical studies have emphasized that knowledge sharing is a critical mechanism by which organizations convert intellectual capital into performance outcomes. For example, one line of work links knowledge sharing to organizational adaptability and performance in sustainable organizations (Marjerison et al., 2022). Other research shows that organizational culture is a strong antecedent of knowledge sharing: cultures emphasizing collaboration, psychological safety, and adaptability tend to enable more sharing (Ng, 2022; Abdelrahman et al., 2025). Some studies also reveal that knowledge management and culture jointly influence competitive advantage, with culture shaping how knowledge systems are adopted and used (Abdelrahman et al., 2025; Ratnasari et al., 2023). Yet, these findings are not entirely consistent: certain cultural elements may enable knowledge sharing in one context but pose barriers in others. Thus, while the broad linkages among culture, knowledge, and performance are fairly well established, how these relationships play out under sustainable strategic orientations remains less settled. From a global to a local scale, many organizations are struggling to align their sustainability goals with internal capabilities. For instance, firms committing to ESG (environmental, social, governance) objectives cannot afford internal silos or rigid cultures that block knowledge flows. In many emerging economies, including Pakistan,

organizational inertia, hierarchical structures, and low employee commitment pose serious barriers to knowledge sharing and innovation. Empirical reports highlight that even when firms state sustainability ambitions, the internal culture often remains unchanged, limiting real impact. Moreover, with increasing disruption from climate change, technology shifts, and social pressures, firms that cannot adapt internally risk falling behind. In Pakistan, industrial firms face resource constraints, regulatory pressures, and stiff competition making sustainable strategies essential. Yet, the extent to which internal cultural and behavioral mechanisms support those strategies is often inadequately understood in the local context. These challenges underscore the need for a deeper examination of how organizational culture and employee commitment shape knowledge practices under sustainability agendas.

Although existing literature demonstrates associations among organizational culture, knowledge sharing, and competitive advantage, several gaps remain. First, much of the prior work treats sustainable strategy as a background condition or simply as another performance outcome, rather than integrating it as a driving strategic orientation whose effectiveness may depend on internal culture and behavior. In other words, we know less about how sustainable strategies interact with culture and knowledge sharing to yield competitive advantage. Second, empirical studies often focus on pairs of variables (e.g., culture, knowledge sharing; knowledge sharing, performance), but fewer studies adopt a more holistic model that includes mediators such as employee commitment or moderators like cultural alignment. Third, many studies are conducted in Western or developed-country settings; there is a relative dearth of research in emerging economies, especially in South Asia, where institutional and cultural dynamics differ. This raises questions about external validity. Fourth, while theoretical perspectives like the knowledge-based view are often referenced, few studies explicitly embed a guiding theoretical frame that links sustainable strategy, culture, behavior, and advantage in one coherent model. Most prior work is cross-sectional and quantitative, limiting insight into directional causality or longitudinal effects.

Addressing these gaps, this study proposes to examine how sustainable strategies exert influence on competitive advantage through knowledge sharing and employee commitment and how organizational culture shapes those pathways.

Understanding these linkages has importance on multiple levels. Academically, integrating sustainable strategy with micro-level behavioral mechanisms helps bridge strategic management and organizational behavior literatures. From a policy and societal perspective, aligning internal firm processes with sustainability goals is key to achieving national commitments (e.g., Sustainable Development Goals). Practically, managers seeking sustainable advantage will benefit if they know which cultural levers and commitment processes to strengthen to make knowledge flows effective. In resource-constrained settings, misalignment between declared sustainability ambitions and internal capabilities may lead to “greenwashing” or superficial efforts. As firms in Pakistan and other developing economies intensify their pursuit of sustainable growth, the ability to internally mobilize knowledge and commitment becomes a critical differentiator. Thus, the problem is not only theoretically interesting, but also of pressing relevance to firms navigating sustainability transitions.

This study contributes by proposing and testing an integrated framework that links sustainable strategy with competitive advantage through knowledge sharing and employee commitment, while positioning organizational culture as a boundary condition. Its distinctiveness lies in embedding sustainable strategy as a central driver, rather than a peripheral outcome, and in exploring its behavioral and cultural pathways. In doing so, it refines both strategic and organizational theory. Theoretically, the model draws primarily on the knowledge-based view (KBV), which sees knowledge as a key strategic resource (granting advantage when effectively shared and applied). The framework also integrates social exchange and commitment theories to explain how employee commitment fosters knowledge behaviors under supportive culture. By linking sustainable strategy to culture, behavior, and performance, the study aspires to yield actionable insights for managers and inform policy on organizational transformation under sustainability imperatives.

Theoretical Foundation

The Knowledge-Based View (KBV) of the firm became the extension of the Resource-Based View (RBV) with its accent on knowledge as the most strategically significant resource to maintain competitive advantage. Grounded in early RBV (Wernerfelt, 1984; Barney, 1991) work, the KBV took off when Grant (1996) announced his seminal formulation that knowledge, and not physical or financial capital, was the leading driver of organizational performance. This theory is based on the fact that knowledge is heterogeneous, complex and hard to imitate and thus a source of sustained advantage when properly combined and utilized in firms. KBV has also shifted its original emphasis on knowledge as a fixed resource as it has developed over time to incorporate dynamic views of knowledge creation, sharing, and integration as processes (Muller et al., 2022). The modern literature calculates KBV into transformations like digitalization, sustainability, and organizational resilience with effects of an appreciation that knowledge is not merely a transportation, but also an undertaking that makes organizations respond to turbulence and pursue opportunities (Curado and Teles, 2023). More recent research further develops KBV with an increased focus on the role of culture, trust, and employee engagement in the development of the flow of knowledge across organizational boundaries (Cheng et al., 2022).

Relevance of KBV to this study is the fact that it has the capacity to describe how firms translate strategic intentions into performance results through the use of knowledge as one of the key mechanisms. The implementation of the strategies, regardless of the context in which organizations are striving towards sustainability, are not enough; what makes them effective is the willingness and capability of the employees to share and implement knowledge towards achieving the organizational objectives. KBV emphasizes that such a process is rooted in a society, which depends on cultural norms and attitudes of employees that facilitate or prevent knowledge flows (Ali et al., 2024). Placing the sustainable strategies in the KBV frame of reference, the study locates knowledge sharing and employee commitment as channels within which the strategic orientations are implemented and finally, culture serves as an enabler

in context. KBV has since become a common use in modern studies on the topic of innovation, digitalization, and sustainable development, with many researchers noting the ability of integrating knowledge to enhance competitive advantage. An example of this is that knowledge-oriented cultures develop sustainable innovation potentials, and Ratnasari et al. (2023) verify the mediation role of knowledge processes in the relationship between strategic practices and the performance of firms.

These results support the relevance of KBV as a guiding model in the connection of sustainability-oriented strategies and competitive performance. KBV therefore offers the intellectual foundation of this research and has provided a logical theoretical prism through which to examine the impact of knowledge resources, which are culturally and behaviorally determined, to produce sustainable competitive advantage.

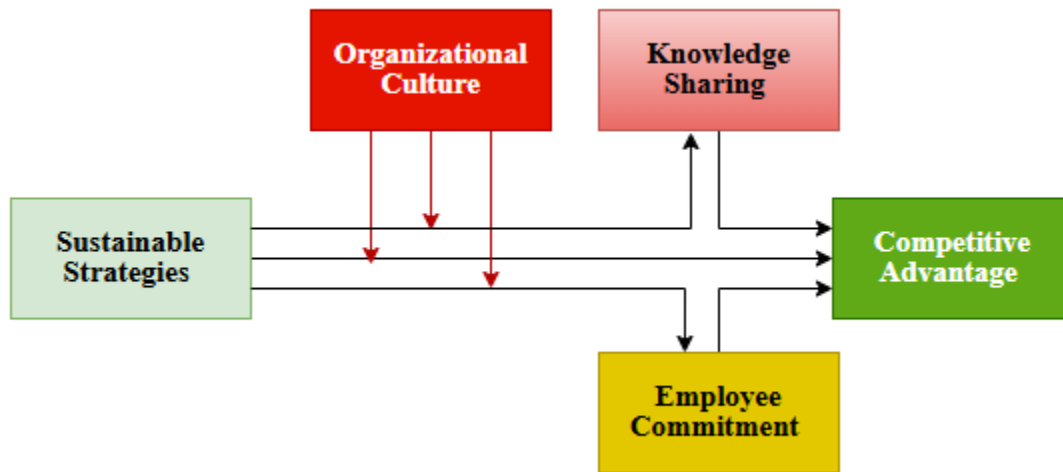


Figure 1: Research Model

Hypotheses Development

The issue of long-term competitiveness is becoming more and more problematic to multinational corporations operating in rapidly globalizing, digitalizing, and sustainability-based environments. Although the classical approaches are based on cost leadership or differentiation, researchers note that the sustainability-related goal should be ingrained in the fundamentals of strategic leanings in modern markets in order to become sustainable (Curado and Teles, 2023). The knowledge-based view (KBV) emphasizes that these strategies can only be effective when organizations are capable of mobilizing knowledge as a core asset in their organizations and can turn sustainability objectives into practicable activities (Muller et al., 2022). The latest empirical data indicate that the success of firms that implement sustainability-based practices is not only in raising the likelihood of strong stakeholder trust but also in making such a company more flexible in the constantly changing markets (Ali et al., 2024).

However, the extent of these strategies into competitive results seems to be dependent on the extent to which the organization operates on the cross-border and cross-business unit level of integrating knowledge, a task that seems to be especially difficult in multinationals where cultural and institutional differences can complicate flows of knowledge (Cheng et al., 2022).

Drawing upon these observations, the KBV offers a conceptual justification that sustainable strategies are a source of long-term benefit because they use knowledge as both an asset and a resource. Previous researchers have found positive correlations between sustainability efforts and firm performance (Abdelrahman et al., 2025; Ratnasari et al., 2023), but there have also been reports of differences in sustainability efforts and performance across industries and regions, indicating a need to look at such relationships through context-adjusted analysis. In the case of multinational corporations’

sustainability is not merely a reaction to regulatory or societal forces, but also a differentiation and value creation tool in a variety of markets. Knowledge-based capabilities allow these firms to position themselves better in attaining resilient competitive advantages by aligning sustainability to knowledge-based capabilities. Therefore, it is hypothesized that:

H1: Sustainable strategies positively influence competitive advantage in multinational corporations.

Sustainability in multinational companies goes beyond creating strategies, it demands transformation of plans into practices that can be disseminated, modified and institutionalized at different layers of the organization. Knowledge sharing is one of the most important bridges of this process because it helps to spread sustainability-related knowledge, experience, and innovations that will improve the competitiveness together (Muller et al., 2022). The KBV assumes that knowledge is the most attractive asset, however, its strategic potential is only realised when knowledge moves effectively between people and between units (Grant, 1996). The empirical research indicates that the organizations that focus on knowledge exchange can more easily turn the sustainability-oriented strategies into the reality of the practical performance results (Cheng et al., 2022; Abdelrahman et al., 2025). In contrast, inadequate sharing may lead to silos, loss of alignment and dilute the effects of sustainability initiatives. This implies that the sharing of knowledge is not merely a spinoff of strategy but rather a mediating process by which the sustainable orientations become competitive advantage. Therefore, it is hypothesized that:

H2: Knowledge sharing mediates the relationship between sustainable strategies and competitive advantage in multinational corporations.

Sustainability efforts usually depend on how much employees are committed to the organizational objectives. Commitment is a desire to exceed the contractual entitlements that promote proactive actions that sustain the sharing of knowledge and implementation of strategic goals (Ali et al., 2024). Under the KBV view, such commitment improves combination of tacit and explicit knowledge whereby

firms can translate sustainability strategies into unique capabilities. Recent studies emphasize that the organizations that are more committed to their employees can attain a better execution of sustainability-related practices and better performance results (Ratnasari et al., 2023; Curado and Teles, 2023). Meanwhile, low commitment could obstruct the flow of knowledge, diminish involvement, and compromise strategic playing fields especially in multinational firms dealing with multi-culturally composed work forces across geographic boundaries. It is against this light that employee commitment plays a crucial mediating role and by so doing, the sustainability-focused strategies are internalized and implemented across all levels of the organization. Therefore, it is hypothesized that:

H3: Employee commitment mediates the relationship between sustainable strategies and competitive advantage in multinational corporations.

Although sustainable strategies provide a platform upon which long term value can be generated, they are influenced by the macro-organizational environment within which their application occurs. One of the most essential contextual conditions is organizational culture that establishes the values, norms, and expectations of behavioral patterns that people follow and interpret to act according to strategic directions (Cheng et al., 2022). An organizational culture that values cooperation, transparency and innovation will foster in employees a culture that promotes open knowledge sharing among employees which will enhance the effects of the sustainability focused initiatives. On the other hand, cultures that are rigid or hierarchical can kill communication, inhibit transfer of knowledge relating to sustainability as well as lowering strategic performance. As an expansion of the KBV, which stresses the sociality of knowledge resources and the cultural specificity thereof, it is reasonable to infer that culture reinforces the correlation between sustainable strategies and knowledge sharing. Therefore, it is hypothesized that:

H4: Organizational culture positively moderates the relationship between sustainable strategies and knowledge sharing in multinational corporations.

Culture also plays an important role in employee commitment. Organizations with a culture of inclusiveness, trust, and participation will be more likely to encourage emotional connections between employees and the organization and, in such a way, sustainability-related strategies will become aligned with personal and professional values (Ali et al., 2024). In cultures that support it, employees are more inclined to achieve sustainability goals but in less supportive environments, strategic aims cannot be converted into authentic participation. This echoes the KBV argument that the social environment that employees work in has the ability to condition knowledge integration and application (Muller et al., 2022). Therefore, it is hypothesized that:

H5: Organizational culture positively moderates the relationship between sustainable strategies and employee commitment in multinational corporations.

Cultural alignment is also the determining factor of ultimate effectiveness of sustainability initiatives towards creating competitive advantage. Research indicates that even sustainability strategies crafted well might not result in performance improvement, in case an organization culture fights against change or pursues short-term financial profits based on long-term sustainability objectives (Abdelrahman et al., 2025; Ratnasari et al., 2023). A culture that facilitated the sustainability values, in turn, strengthens the strategic alignment and provides a platform in which the mobilization of knowledge resource would be directed to sustained differentiation. In the context of KBV, this means that culture increases the ability of sustainable strategies to create competitive advantage through the internalization of the use of knowledge in daily activities. Therefore, it is hypothesized that:

H6: Organizational culture positively moderates the relationship between sustainable strategies and competitive advantage in multinational corporations.**Methodology**

This study employs a quantitative, cross-sectional research design, which is particularly suited for examining the hypothesized relationships among sustainable strategies, knowledge sharing, employee commitment, organizational culture, and competitive advantage within multinational corporations. Quantitative designs allow for the systematic testing of theoretical models through statistical analysis, offering precision and generalizability when supported by large samples (Creswell & Creswell, 2022). The cross-sectional approach, wherein data are collected at a single point in time, is widely applied in organizational and management research because it enables the capture of employees' perceptions and behaviors in real-world settings without requiring longitudinal tracking (Queirós et al., 2022). This design is appropriate given the study's aim of testing mediating and moderating effects within a structural model, as it allows for the efficient testing of multiple relationships simultaneously.

The target population for this research consists of middle- and senior-level employees working in multinational corporations operating in Pakistan's manufacturing sector, including textile, food processing, and consumer goods industries. These industries are strategically important to Pakistan's economy and are increasingly pressured by global supply chains and regulatory frameworks to adopt sustainable strategies. Employees in these organizations play a critical role in translating corporate sustainability initiatives into operational practices, making them appropriate respondents for this study. The sampling method follows a stratified random sampling approach, ensuring representation across industries and organizational levels, thereby reducing sampling bias and enhancing generalizability (Taherdoost, 2022). Sample size determination is guided by recommendations for structural equation modeling, where at least 10 responses per observed item are suggested (Hair et al., 2022). Based on the number of items in the survey instrument, a minimum of 400 responses is

considered sufficient, though oversampling is pursued to account for incomplete or invalid responses.

Measurement instruments are drawn from validated scales established in prior literature to ensure construct validity and reliability. Sustainable strategies are measured using a six-item scale (Abdelrahman et al., 2025), knowledge sharing with a five-item scale (Cheng et al., 2022), employee commitment with a seven-item scale (Ali et al., 2024), organizational culture with a six-item scale (Ratnasari et al., 2023), and competitive advantage with a five-item scale (Curado & Teles, 2023). All constructs are assessed using a seven-point Likert scale ranging from strongly disagree (1) to strongly

agree (7), consistent with contemporary management research practices that capture nuanced perceptions. Data analysis will employ SPSS for descriptive and inferential statistics, ensuring accuracy in data screening, normality checks, and preliminary analyses. SmartPLS will be used for structural equation modeling, including measurement model assessment and path analysis, as it is robust for analyzing complex models with mediating and moderating effects and does not require strict normality assumptions (Sarstedt et al., 2022). The combined use of SPSS and SmartPLS enhances analytical rigor, supporting both reliability and validity of the findings.

Data analysis

Table 1: Regression weights

Variables	Items	CA	EC	KS	OC	SS
Competitive Advantage	CA2	0.806				
	CA3	0.799				
	CA5	0.863				
	CA6	0.751				
	CA7	0.820				
Employee Commitment	EC1		0.816			
	EC2		0.819			
	EC3		0.809			
	EC4		0.868			
	EC5		0.860			
	EC6		0.803			
Knowledge Sharing	KS1			0.857		
	KS2			0.906		
	KS3			0.870		
	KS4			0.908		
	KS5			0.844		
	KS6			0.865		
Organizational Culture	OC1				0.888	
	OC2				0.906	
	OC3				0.889	
	OC4				0.900	
	OC5				0.899	
	OC6				0.937	
	OC7				0.877	
	OC8				0.917	

Sustainable Strategies	SS1					0.888
	SS2					0.865
	SS3					0.853
	SS4					0.821
	SS5					0.867
	SS6					0.892
	SS7					0.821
	SS8					0.910

The measurement model demonstrates strong reliability and validity, as all item loadings exceed the recommended threshold of 0.70 (Hair et al., 2022). For Competitive Advantage, items range from 0.751 to 0.863, confirming that the construct consistently reflects firms’ performance outcomes. Employee Commitment items load between 0.803 and 0.868, indicating reliable measurement of employees’ psychological attachment to their organizations (Meyer & Allen, 1997). Knowledge Sharing shows very high loadings (0.844–0.908), supporting the construct’s ability to capture employees’ willingness to exchange and integrate knowledge (Nonaka & Takeuchi, 1995). Organizational Culture presents excellent loadings between 0.877 and 0.937, reflecting the shared norms and values that guide behavior within organizations (Schein, 2017). Similarly, Sustainable Strategies items load strongly between 0.821 and 0.910, showing reliable representation of firms’ sustainability-oriented practices (Papadas et al., 2022). Overall, these results confirm convergent validity, as all constructs meet established criteria for measurement quality (Fornell & Larcker, 1981; Hair et al., 2022).

Table 2: Reliability analysis

Variables	Cronbach’s alpha	(rho_c)	Average variance extracted (AVE)
Competitive Advantage	0.867	0.904	0.654
Employee Commitment	0.909	0.930	0.688
Knowledge Sharing	0.939	0.952	0.766
Organizational Culture	0.967	0.972	0.813
Sustainable Strategies	0.952	0.960	0.749

The reliability and validity statistics confirm that all constructs in the model are measured robustly. Cronbach’s alpha values range from 0.867 to 0.967, exceeding the 0.70 benchmark, which indicates strong internal consistency across items (Nunnally & Bernstein, 1994). Composite reliability (rho_c) values are also very high, ranging from 0.904 to 0.972, surpassing the recommended 0.70 threshold and further confirming measurement reliability (Hair et al., 2022). The average variance extracted (AVE) for all constructs lies between 0.654 and 0.813, exceeding the 0.50 cutoff, which establishes convergent validity by showing that each construct explains more than half of the variance in its indicators (Fornell & Larcker, 1981). Together, these results demonstrate that the constructs of competitive advantage, employee commitment, knowledge sharing, organizational culture, and sustainable strategies are measured with both reliability and validity, providing a solid foundation for structural model testing.

Table 3: HTMT Ratio

Variables	CA	EC	KS	OC	SS
Competitive Advantage					
Employee Commitment	0.508				
Knowledge Sharing	0.474	0.625			
Organizational Culture	0.151	0.050	0.100		

Sustainable Strategies	0.449	0.614	0.570	0.146	
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The correlation matrix indicates meaningful associations among the study variables. Competitive Advantage shows moderate positive correlations with Employee Commitment ($r = 0.508$), Knowledge Sharing ($r = 0.474$), and Sustainable Strategies ($r = 0.449$), suggesting that firms achieve stronger competitive positions when employees are committed, knowledge is effectively shared, and sustainability-oriented strategies are adopted. Employee Commitment is strongly correlated with both Knowledge Sharing ($r = 0.625$) and Sustainable Strategies ($r = 0.614$), highlighting the role of sustainability practices in fostering commitment and collaboration among employees. Similarly, Knowledge Sharing is moderately correlated with Sustainable Strategies ($r = 0.570$), indicating that sustainability initiatives may stimulate knowledge exchange within firms. In contrast, Organizational Culture shows very weak correlations with all other constructs (ranging from 0.050 to 0.151), implying that, in this context, culture does not strongly align with strategies, behaviors, or outcomes. Overall, the results underscore the central role of sustainable strategies, commitment, and knowledge sharing in driving competitive advantage, while organizational culture appears less influential in this sample.

Table 4: R SQUARE

	R-square	R-square adjusted
Competitive Advantage	0.276	0.265
Employee Commitment	0.338	0.332
Knowledge Sharing	0.296	0.289

The R-square values indicate that the model explains 27.6% of the variance in competitive advantage, 33.8% in employee commitment, and 29.6% in knowledge sharing. These moderate values suggest that sustainable strategies and related constructs account for a meaningful but not exhaustive portion of variance, leaving room for other influencing factors.

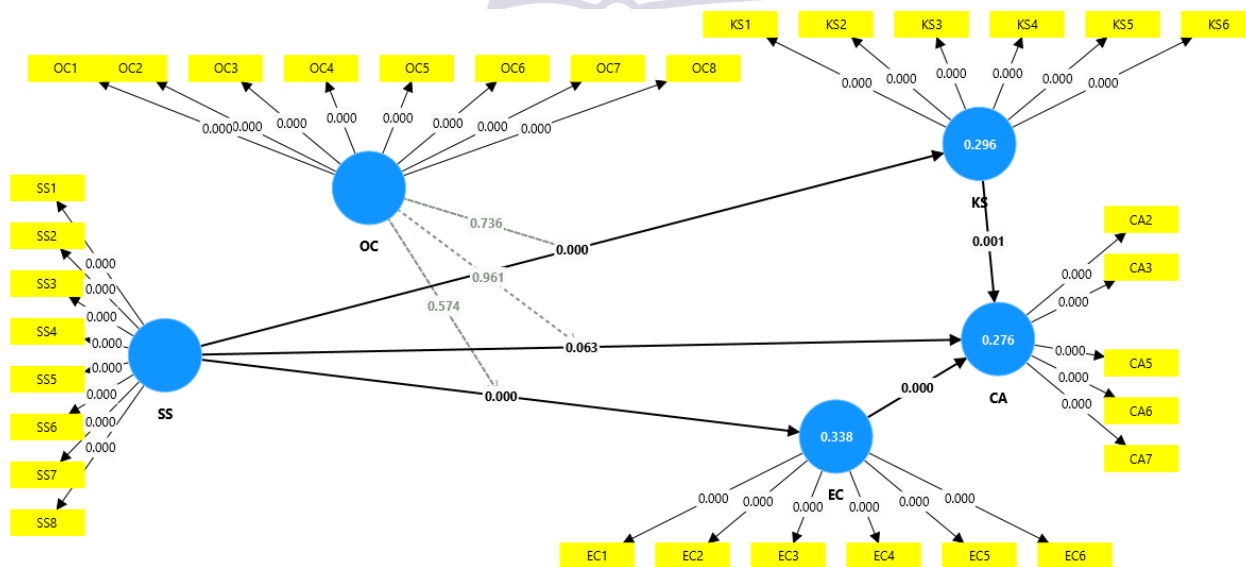


Figure 2: Structural Equation Modelling

Table 5: Hypotheses Results

	Original sample	Standard deviation	T statistics	P values
Sustainable Strategies -> Competitive Advantage	0.141	0.076	1.860	0.063
Sustainable Strategies -> Knowledge Sharing -> Competitive Advantage	0.112	0.036	3.105	0.002
Sustainable Strategies -> Employee Commitment -> Competitive Advantage	0.148	0.045	3.284	0.001
Organizational Culture x Sustainable Strategies -> Competitive Advantage	-0.003	0.066	0.049	0.961
Organizational Culture x Sustainable Strategies -> Employee Commitment	0.025	0.044	0.563	0.574
Organizational Culture x Sustainable Strategies -> Knowledge Sharing	0.018	0.053	0.337	0.736

The structural model results provide nuanced insights into how sustainable strategies influence competitive advantage. The direct path from sustainable strategies to competitive advantage was positive but not statistically significant ($\beta = 0.141$, $t = 1.860$, $p = 0.063$). This suggests that while sustainability-oriented strategies may create a foundation for performance, they do not by themselves guarantee competitive advantage, highlighting the need for internal mechanisms to convert strategic intent into outcomes. The mediation results provide stronger evidence. Sustainable strategies significantly enhance knowledge sharing (indirect effect $\beta = 0.112$, $t = 3.105$, $p = 0.002$), which in turn contributes to competitive advantage. This underscores the role of knowledge flows as a key channel through which sustainability creates value. Similarly, the mediation through employee commitment was also significant (indirect effect $\beta = 0.148$, $t = 3.284$, $p = 0.001$), indicating that sustainability efforts that foster loyalty and engagement among employees directly strengthen a firm's ability to achieve and sustain competitive gains. By contrast, organizational culture failed to moderate any of the hypothesized paths. The interaction with competitive advantage ($\beta = -0.003$, $t = 0.049$, $p = 0.961$), employee commitment ($\beta = 0.025$, $t = 0.563$, $p = 0.574$), and knowledge sharing ($\beta = 0.018$, $t = 0.337$, $p = 0.736$) were all nonsignificant, suggesting that culture does not

amplify the effects of sustainable strategies in this sample.

Discussion:

The pattern of results points to an important story: sustainable strategies in this sample exerted their influence on competitive advantage indirectly through internal, behavioral mechanisms rather than through a strong direct effect. Both hypothesized mediation paths via knowledge sharing and via employee commitment were statistically significant (H2: indirect effect, $t = 3.105$, $p = .002$; H3: indirect effect, $t = 3.284$, $p = .001$), whereas the direct path from sustainable strategies to competitive advantage was not significant at the conventional 0.05 level (H1: $t = 1.860$, $p = .063$). The moderation hypotheses involving organizational culture (H4-H6) were not supported (all interaction paths nonsignificant). The discussion that follows interprets these results hypothesis by hypothesis, grounding each interpretation in the study's theoretical frame and prior empirical work.

The nonsignificant direct effect of sustainable strategies on competitive advantage (H1) suggests that simply adopting sustainability-oriented strategic statements or programs is not by itself sufficient to produce competitive gains in the observed firms. From the knowledge-based view, strategy creates potential only when knowledge is mobilized to implement and adapt that strategy in day-to-day

work; without effective processes to convert strategic intent into usable knowledge and coordinated action, strategy remains a latent resource (Grant, 1996; Müller et al., 2022). Empirically, scholars have found that the link between sustainability orientation and performance is often contingent on internal capabilities or dynamic processes (Curado & Teles, 2023; Rehman et al., 2024). In this study the marginal direct effect ($p = .063$) is consistent with a model in which the substantive effect of sustainable strategy on advantage is realized primarily through internal mechanisms rather than via a straightforward, immediate payoff. Practically, this means sustainability commitments must be translated into collective know-how and sustained employee effort before competitive benefits emerge (Papadas et al., 2022; Singh & Aggarwal, 2022).

The significant mediation via knowledge sharing (H2) affirms that sustainable strategies advance competitive advantage when they stimulate the exchange, integration, and application of relevant knowledge. This finding aligns squarely with KBV logic: knowledge sharing is the mechanism by which distributed insights, routines, and best practices flow across units and become combinable assets that create inimitable value (Grant, 1996; Marjerison et al., 2022). Prior empirical work similarly shows that firms that pair sustainability orientation with effective knowledge processes achieve superior adaptive capability and market outcomes (Cheng et al., 2022; Abdelrahman et al., 2025). Several plausible mechanisms can explain the observed mediation: sustainability initiatives generate new technical and organizational knowledge (for example about resource efficiency or regulatory compliance) that must be disseminated; knowledge sharing accelerates organizational learning and reduces redundant experimentation; and cross-unit knowledge flows enable the standardization and scaling of sustainability practices that yield cost and reputational advantages. In multinational settings, where practices must travel across geographic and institutional boundaries, these knowledge processes are especially salient (Cheng et al., 2022; Zhang et al., 2024).

The mediation through employee commitment (H3) indicates that sustainable strategy becomes effective when employees internalize and support it. Social

exchange and commitment theories help explain this path: employees who feel psychologically and emotionally invested in the organization are more likely to expend discretionary effort, adopt pro-environmental behaviors, and persist in implementing sometimes complex sustainability routines that produce long-term advantage (Ali et al., 2024; Ojo & Fauzi, 2023). Empirical evidence has linked commitment to higher fidelity in strategy execution and to behaviors (e.g., knowledge application, process improvement) that convert strategic initiatives into competitive outcomes (Ratnasari et al., 2023; Curado & Teles, 2023). In practical terms, sustainability programs that fail to cultivate employee buy-in risk becoming symbolic rather than substantive; by contrast, committed employees sustain the learning and adaptation necessary for strategies to translate into performance gains.

The failure to find support for organizational culture as a moderator (H4–H6) requires careful unpacking because prior literature often portrays culture as a powerful boundary condition (Kim et al., 2022; Shah et al., 2023). There are several, not mutually exclusive, explanations. First, measurement and conceptual issues may matter: organizational culture in this study was operationalized as a broad construct, but moderation effects often emerge from specific cultural dimensions (for example, clan-type trust and support versus hierarchical control) rather than from a global index (Ng, 2022). If culture's moderating role is dimension-specific, a global measure can dilute detectable interaction effects. Second, statistical and design considerations make interaction effects harder to detect: interaction terms typically require larger samples and greater variance to achieve statistical power, and cross-sectional, single-source designs can further reduce sensitivity to moderation (Hair et al., 2022; Queirós et al., 2022). Third, contextual characteristics of the sampled firms may reduce observable moderation: if many participating subsidiaries of MNCs share similar formal procedures, or if culture is relatively homogeneous across units (for example due to corporate integration or strong centralized policies), there will be limited variance in culture to support moderation. Finally, theory suggests alternative roles for culture: rather than moderating, culture may

operate as an antecedent that directly shapes knowledge sharing and commitment (Abdelrahman et al., 2025; Kim et al., 2022). In other words, culture might channel strategy into internal mechanisms rather than altering the strength of those links in an interactional sense. Empirical work has produced mixed evidence on whether culture amplifies, substitutes for, or is subsumed by other organizational capabilities (Shah et al., 2023), so the null moderation here is consistent with a complex, context-dependent picture.

These findings have several theoretical and practical implications. Theoretically, they reinforce the central claim of the KBV: strategy becomes valuable through knowledge-based processes and motivated actors who instantiate that knowledge (Grant, 1996; Müller et al., 2022). The results extend prior work by showing that in this sample sustainable strategy's impact on advantage is almost entirely channeled through knowledge sharing and employee commitment rather than by a direct strategic premium. Practically, managers intent on deriving competitive returns from sustainability should prioritize investments that build knowledge infrastructures (systems, incentives, cross-unit routines) and that foster employee commitment (leadership communication, training, participation, and reward structures) rather than relying on declarative strategic commitments alone (Marjerison et al., 2022; Ali et al., 2024; Curado & Teles, 2023).

At the same time, the lack of moderation by culture cautions against simplistic prescriptions such as "change culture and performance will follow." Instead, practitioners should treat culture as a multi-faceted phenomenon; targeted cultural interventions that reinforce collaboration and psychological safety may be necessary to strengthen knowledge flows and commitment, but such changes take time and may need to be accompanied by structural and managerial actions (Ng, 2022; Abdelrahman et al., 2025). For policy and practitioners in emerging-market manufacturing contexts, the message is clear: ensure that sustainability initiatives include explicit mechanisms for knowledge transfer and employee engagement, and evaluate culture at a more granular level before assuming it will amplify strategic effects (Ratnasari et al., 2023; Papadas et al., 2022).

The study's design and the present results point to several avenues for future research. Longitudinal and multi-source designs would help establish causal ordering and reduce common-method concerns about self-reported culture, commitment, and performance (Queirós et al., 2022). Future studies should disaggregate culture into theoretically meaningful subdimensions (for example supportiveness, innovation orientation, or control) to test whether particular cultural profiles condition the strategy, mechanism and advantage pathways (Ng, 2022; Kim et al., 2022). Testing moderated mediation and employing multilevel methods would also clarify whether culture operates at the unit or corporate level and whether its influence unfolds indirectly through employee attitudes or directly through practices (Sarstedt et al., 2022). Methodologically, researchers should ensure sufficient power to detect interaction effects and consider alternative operationalizations of competitive advantage (including objective performance indicators) to complement perceptual measures. Addressing these issues will sharpen theoretical claims about when and how sustainable strategies produce competitive value.

Limitations and future directions

This study is not without limitations. The cross-sectional design restricts causal inferences, as the observed relationships between sustainable strategies, knowledge sharing, employee commitment, and competitive advantage may evolve over time. The reliance on self-reported measures also raises the possibility of common method bias, despite procedural remedies. Additionally, the sample was drawn from firms operating in Pakistan, which may limit the generalizability of the findings to other cultural or institutional contexts. The broad operationalization of organizational culture may have obscured the effects of specific cultural dimensions, contributing to the nonsignificant moderation results.

Future research should adopt longitudinal and multi-source designs to strengthen causal claims and reduce method bias. Scholars may also benefit from exploring cultural dimensions more granularly to determine whether certain orientations, such as collaboration or innovation, moderate the strategy-

outcome link more effectively. Comparative studies across industries and countries could clarify the contextual boundaries of the observed mechanisms. Finally, incorporating objective measures of performance and employing multilevel analysis would deepen understanding of how sustainable strategies unfold across organizational levels and over time.

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