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ORIGINAL STUDY

Administering Sustainability: How Trust in Government and Managerial Support Strengthen Green Core Competence and Organizational Advantage

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ABSTRACT

This study examines how green core competence contributes to competitive advantage in Iraqi firms, and how this relationship depends on both organizational and governance conditions. Drawing on the Resource-Based View, the Job Demands–Resources model, and stakeholder theory, the study tests a mediation–moderation model in which positive mental health mediates the effect of green core competence on competitive advantage, while trust in government and top management support strengthen key links in the process. Using survey data from top-management respondents in Iraq and partial least squares structural equation modeling, the results show that green core competence is positively associated with competitive advantage, and that positive mental health partially mediates this effect. The findings further indicate that greater trust in government and stronger top management support amplify the benefits of green competence by reinforcing the capability-to-well-being and well-being-to-advantage links. Overall, the study extends sustainability and management research by demonstrating that the competitive returns to green capability are shaped not only by firm resources but also by human well-being and the credibility of the institutional environment.

Keywords: Green core competence, Positive mental health, Trust in government, Top management support, Resource-based view (RBV), Job demands-resources (JD-R)

1. Introduction

The contemporary sustainability agenda is no longer driven only by markets or consumer preferences; it is increasingly shaped by the administrative state—through regulation, enforcement capacity, public investment priorities, and the credibility of long-term policy signals. As governments tighten environmental expectations and embed sustainability into development plans, firms are pushed to move beyond symbolic “green” messaging toward organizational capabilities that can withstand scrutiny and produce measurable results. In this environment, competition is not only about price and innovation,

but also about aligning with evolving public standards and societal expectations while maintaining performance and legitimacy.

A capability that has gained growing attention in this regard is green core competence, defined as a firm’s capacity to integrate environmental responsibility into strategy, routines, and operations in ways that become embedded and difficult to imitate [20, 55]. This competence is not simply a bundle of environmental practices; it is a capability-building process that often requires sustained learning, resource reallocation, and organizational coordination. From a public administration perspective, green competence matters because it is a key channel through which

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public sustainability goals are translated into organizational behavior across the economy, particularly when governments rely on regulation, incentives, and partnerships rather than direct provision.

Stakeholder pressures help explain why green competence is increasingly strategic. Consumers and investors reward credible sustainability performance, while regulators and public authorities demand compliance, transparency, and alignment with national priorities [52]. However, in many emerging settings, the government is not merely one stakeholder among others; it is also a rule-setter, purchaser, funder, and coordinator of development priorities. In other words, firms do not build green capabilities in a governance vacuum; they build them within the boundaries—and signals—created by public institutions.

This logic makes Iraq a critical context. Iraq faces significant climate and environmental risks, while also pursuing development and institutional strengthening. International diagnostics, most notably the World Bank's *Iraq: Country Climate and Development Report*, emphasize the interdependence between climate vulnerability, institutional capacity, and economic transformation, which shapes both the feasibility and payoff of private sustainability investments [70]. At the policy level, Iraq's *National Strategy for the Protection and Improvement of the Environment (2024–2030)* positions environmental action as a pillar within national development policy, reinforcing the steering role of public administration in setting priorities, coordinating implementation, and sustaining policy credibility [66]. At the international level, Iraq has communicated its climate commitments through the UNFCCC process via its nationally determined contribution (including the 2021 submission), with its NDC profile also reflected in international tracking databases ([67]; Climate Change Laws of the World, 2021).

However, the relationship between green core competence and competitive advantage is not automatic. Even when firms invest in sustainability capabilities, the strength of the payoff depends on whether the surrounding governance environment provides credible rules, predictable enforcement, and trustworthy policy direction. This is where trust in government becomes central from a public administration lens. Trust in government reflects whether firms believe public institutions will act competently, reasonably, and consistently, an assessment that influences willingness to invest in long-horizon capabilities such as green transformation [62, 75]. Where trust is higher, firms are more likely to interpret sustainability policy as stable rather than temporary, and to view compliance and green investment as strategically rational

rather than risky, especially in contexts where the state substantially influences markets and investment climates [8].

At the organizational level, policy signals alone are insufficient if firms lack internal governance support. Sustainability transitions require executive prioritization, resource commitment, and cross-unit coordination, which places top management support at the center of implementation. When senior leaders actively support green initiatives, green competence is more likely to become embedded in routines, reflected in performance metrics, and protected during short-term shocks [33, 34]. This leadership commitment can also shape the internal legitimacy of sustainability work and reduce resistance to change [45].

In addition to these institutional and leadership conditions, this study introduces a mechanism that is often underemphasized in sustainability research but is essential for implementation: positive mental health. Capability-building involves learning, adaptation, and behavior change—processes that draw on employee energy, creativity, and resilience. Positive mental health is linked to stronger coping capacity and productive performance outcomes, including creativity and sustained engagement [50, 64]. Accordingly, green core competence may contribute to competitive advantage partly by shaping a more meaningful and supportive work environment, strengthening well-being, and enabling the human execution required to implement green routines effectively [43].

Bringing these arguments together, this study positions sustainability advantage as an outcome of governance credibility, organizational capability and human execution. Drawing on the resource-based view, the job demands–resources model, and stakeholder theory, it examines whether green core competence enhances competitive advantage directly and indirectly through positive mental health, and whether these links are strengthened when trust in government and top management support are high. In doing so, the study contributes to public administration-oriented sustainability scholarship by clarifying how public institutional credibility and internal leadership jointly condition the private-sector returns to green transformation in a high-uncertainty setting.

2. Literature review

2.1. Green core competence and competitive advantage

Green core competence reflects a firm's ability to embed environmental responsibility into its strategic

intent, managerial routines, and operational systems, thereby shaping day-to-day decisions and long-term investment priorities [17]. In this sense, green competence is not simply an extension of corporate social responsibility; it represents a capability-building process that can influence how firms allocate resources, coordinate activities, and innovate under environmental constraints. Classic arguments in strategy suggest that environmental improvements can generate efficiency gains, stimulate innovation, and strengthen competitiveness rather than merely adding costs, especially when firms redesign processes and products rather than treating sustainability as compliance alone [53].

This capability perspective aligns strongly with the Resource-Based View (RBV), which argues that competitive advantage is grounded in firm-specific resources and capabilities that are valuable, rare, inimitable, and non-substitutable [11, 12]. From an RBV lens, green core competence becomes strategically relevant because it is often built through cumulative learning, cross-functional integration, and path-dependent routines that competitors cannot easily replicate. It is valuable because it can reduce waste and risk, improve process reliability, open environmentally sensitive markets, and build stakeholder legitimacy. It can be rare because many firms adopt superficial environmental practices, while fewer develop deep operational capabilities that persist over time. It can be not easy to imitate because it depends on tacit knowledge, embedded culture, and unique combinations of skills and processes. Finally, it is hard to substitute because there are limited alternatives that deliver the same bundle of legitimacy, efficiency, innovation, and regulatory fitness as mature green competence [22, 48].

A public administration perspective adds an important layer to this argument: green competence is developed and rewarded within a governance environment shaped by policy design, regulatory enforcement, public investment priorities, and administrative credibility. Governments are not merely external stakeholders; they act as rule-setters, implementers, and sometimes market-makers whose signals determine whether sustainability investments are interpreted as strategic opportunities or uncertain costs. This is consistent with stakeholder reasoning that firm performance depends on managing critical stakeholder expectations and securing legitimacy in the institutional environment [25, 61]. Accordingly, green core competence can strengthen competitive advantage not only by improving internal efficiency and innovation, but also by positioning firms more favorably in environments where public policy and regulatory expectations are becoming more salient.

Despite these theoretical foundations, empirical evidence remains uneven, particularly in settings where institutional conditions and administrative credibility may powerfully shape organizational behavior. Much of the existing evidence is concentrated in relatively stable contexts. At the same time, fewer studies examine how green core competence translates into competitive advantage in higher-uncertainty environments, such as Iraq, where firms may face shifting policy signals, variable enforcement, and resource constraints. This gap matters because the same “green capability” may yield different competitive returns depending on the credibility and supportiveness of the governance context. Therefore, this study extends prior work by examining green core competence and competitive advantage in Iraq while explicitly incorporating governance- and leadership-related boundary conditions that can shape the strength of this relationship [6, 16].

2.2. Positive mental health as a mediator

Workplace mental health has increasingly been recognized as a strategic resource because it influences attention, learning, creativity, and resilience, capabilities that are essential for implementing change and sustaining performance over time. Positive mental health is commonly defined as a state of well-being in which individuals can realize their abilities, cope with everyday stresses, and function productively [49]. In organizational settings, higher psychological well-being has been associated with improved job performance and more constructive work behaviors, particularly where work requires problem-solving and adaptation [69].

This study argues that positive mental health can help explain *how* green core competence becomes a source of competitive advantage. Sustainability capability-building typically requires training, experimentation, cross-department coordination, and behavioral change—processes that may succeed when employees experience sufficient psychological resources to cope with demands and sustain engagement. The Job Demands-Resources (JD-R) model provides a suitable lens for this mechanism. JD-R distinguishes job demands that consume energy from job resources that enable goal achievement, reduce strain, and foster growth [9, 41]. When organizations develop green core competence substantively—through clearer routines, supportive leadership signals, meaningful environmental goals, and capability development—it can operate as a “resource-rich” context that strengthens purpose, efficacy, and learning opportunities. In JD-R terms, these features can support positive mental health by

increasing motivational states and reducing uncertainty and friction associated with change.

Positive mental health can then contribute to competitive advantage through several routes. Employees with higher well-being tend to show stronger cognitive flexibility, persistence, and constructive social functioning, which improves implementation quality, innovation execution, and service reliability, outcomes that matter for organizational advantage. In sustainability transitions specifically, well-being may be paramount because green initiatives can fail when organizations treat them as compliance checklists rather than capability-driven change projects that require continuous improvement and internal buy-in [43]. Therefore, a mediated pathway is plausible: green core competence strengthens positive mental health by providing resources and meaning at work, and positive mental health helps convert green capability into stronger performance and competitive advantage.

Empirical research examining this mediation logic remains limited, particularly in understudied contexts such as Iraq. While studies increasingly acknowledge that sustainability is implemented by people, not just policies or technologies, fewer models explicitly test employee well-being as a mechanism linking green capability to competitive advantage. Addressing this gap is important for both theory and practice because it connects sustainability implementation with human functioning, which is central to public administration thinking about policy effectiveness and organizational performance.

2.3. Trust in government and top management support as moderators (revised)

From a public administration perspective, sustainability in the private sector is not shaped solely by markets. It is also shaped by the quality of governance, the clarity of rules, the credibility of enforcement, the stability of policy direction, and the perceived fairness of administrative decisions. For firms, these features matter because building green core competence is a long-horizon investment that often involves capability development, process redesign, and internal change. Consequently, trust in government becomes a key institutional condition that can determine whether green initiatives are interpreted as strategically rational and worthwhile or as risky and uncertain.

Trust in government refers to the belief that public institutions act competently, fairly, and consistently, particularly in matters of policy design and implementation [62, 75]. When firms trust the government, they are more likely to interpret environmental policies, incentives, and compliance

expectations as credible signals rather than temporary or symbolic statements. In such environments, sustainability investments are more likely to be viewed as protected by predictable regulation and fair enforcement, which reduces uncertainty and encourages more profound organizational commitment. This logic is particularly relevant in Iraq, where public institutions can powerfully shape market confidence and where perceptions of administrative credibility can influence firms' willingness to invest in green transformation [8]. Accordingly, trust in government can strengthen the extent to which green core competence becomes meaningful within organizations, supporting psychological security, reducing ambiguity around sustainability efforts, and enabling employees to engage with green routines more positively. It can also strengthen the performance value of well-being by making it easier for psychologically healthy and engaged employees to translate their energy and creativity into outcomes that are recognized and rewarded in the broader institutional environment [23, 54].

In parallel, top management support is an internal governance condition central to implementation success. In implementation research, ambitious goals frequently fail not because the goals are wrong, but because resources, authority, coordination, and leadership backing are insufficient. The same logic applies to corporate sustainability initiatives: green competence becomes real only when senior leaders consistently prioritize it, allocate resources, resolve cross-unit conflicts, and signal that sustainability is a strategic commitment rather than a temporary campaign [24, 33, 34]. When top management support is high, firms are more likely to invest in capability-building elements of green core competence, training, system redesign, measurement practices, and accountability mechanisms, rather than relying on isolated practices. This supportive environment can also improve employee psychological functioning by increasing perceived purpose, legitimacy, and stability in sustainability work, thereby reinforcing positive mental health. In turn, when employees experience stronger well-being, leadership support helps convert that well-being into higher-quality execution, innovation, and performance outcomes that underpin competitive advantage [13, 30].

These arguments align with Stakeholder Theory, but in a specifically administrative sense: government and top management are not simply "stakeholders" to be satisfied; they are implementation-critical actors who shape the incentives, constraints, and enabling conditions through which sustainability is translated into organizational outcomes [25, 26]. Trust in government represents the external credibility of the rule environment, while top management support

represents the internal credibility of strategic commitment. Together, they help explain why the same green competence may yield more substantial psychological benefits and stronger competitive returns in some contexts than in others [63, 73].

2.4. Research hypotheses

H1: Green core competence is positively associated with a firm's competitive advantage.

H2: Positive mental health mediates the relationship between green core competence and a firm's competitive advantage.

H3: Trust in government moderates the positive effect of green core competence on positive mental health, such that the effect is stronger when trust in government is high.

H4: Trust in government moderates the positive effect of positive mental health on competitive advantage, such that the effect is stronger when trust in government is high.

H5: Top management support moderates the positive effect of green core competence on positive mental health, such that the effect is stronger when top management support is high.

H6: Top management support moderates the positive effect of positive mental health on competitive advantage, such that the effect is stronger when top management support is high.

3. Method

This study used a quantitative, cross-sectional survey design to examine how green core competence (GCC) contributes to firm competitive advantage (FCA), whether this relationship operates through positive mental health (PMH), and whether two boundary conditions—trust in government (TIG) and top management support (TMS), strengthen key links in the process. The empirical setting was Iraq, where firms operate under significant environmental pressures and institutional uncertainty, making governance credibility and managerial backing especially relevant for sustainability capability-building.

3.1. Sample and data collection

The target population consisted of top management personnel in Iraqi firms, including founders/owners, chief executives, senior managers, and other executives with decision-making authority over strategy and sustainability-related initiatives. Data were col-

lected using an online structured questionnaire. Participation was voluntary, and respondents were informed of the study's purpose, confidentiality, and the anonymity of their responses before completing the survey. In total, 201 usable responses were obtained. Given access constraints and the executive nature of the target group, the study employed a non-probability convenience sampling approach.

Data were collected through an online survey that included structured questionnaires designed to measure the constructs of interest. Participants were informed about the purpose of the study, the voluntary nature of their participation, and the confidentiality of their responses. Informed consent was obtained from all participants before they began the survey.

3.2. Instrumentation

Positive Mental Health was assessed using a 5-point Likert scale based on the instrument developed by Lukat et al., [42]. Trust in the Government of Iraq was gauged using a similar 5-point Likert scale, based on the instrument developed by Hassan et al. [31] and suitable for the Iraqi context. Green Core Competence within the organizations was evaluated using a 5-point Likert scale adopted from Chen's [17] framework. The firms' competitive advantage was measured using a 5-point Likert scale that incorporated the criteria and scale established by Chen et al. [18], widely recognized for assessing a firm's competitive edge. Lastly, Top Management Support was appraised using a 5-point Likert scale derived from the framework by Sax and Torp [60]. The use of these well-established and validated scales across all constructs ensures the reliability and validity of the study's findings.

4. Data analysis

SmartPLS (Partial Least Squares Structural Equation Modeling) is a powerful, adaptable software package. It stands out for its user-friendly interface, making it accessible to researchers with varying statistical expertise. SmartPLS offers advanced statistical techniques, including path modeling. With its bootstrapping capabilities, SmartPLS provides robust estimates and confidence intervals, enhancing the reliability of research findings. Furthermore, it supports reflective and formative measurement models, making it suitable for diverse research contexts. Recent studies (Hair [29, 59]) highlight SmartPLS as an invaluable tool for model testing and validation, underscoring its significance in contemporary research methodologies.

Table 1. Measurement model, loading, construct reliability and convergent validity.

Constructs	Items	Loading (> 0.5)	Cronbach's Alpha (> 0.7)	CR (> 0.7)	AVE (> 0.5)
Green Core Competence	GCC1	0.718	0.766	0.850	0.633
	GCC2	0.726			
	GCC3	0.760			
	GCC4	0.781			
	GCC5	0.811			
Positive Metal Health	PMH1	0.793	0.817	0.880	0.661
	PMH2	0.753			
	PMH3	0.823			
	PMH4	0.772			
	PMH5	0.729			
	PMH6	0.760			
	PMH7	0.766			
	PMH8	0.801			
	PMH9	0.798			
Trust in Government	TIG1	0.812	0.818	0.910	0.655
	TIG2	0.791			
	TIG3	0.811			
Top Management Support	TMS1	0.884	0.814	0.877	0.616
	TMS2	0.864			
	TMS3	0.710			
	TMS4	0.761			
	TMS5	0.852			
	TMS6	0.789			
Firm Competitive Advantages	FCA1	0.741	0.908	0.924	0.551
	FCA2	0.771			
	FCA3	0.731			
	FCA4	0.840			
	FCA5	0.833			
	FCA6	0.786			
	FCA7	0.731			
	FCA8	0.781			

Notes: CR= Composite Reliability, AVE= Average Variance Extracted, (PJ7) was dropped it due to the low loading.

4.1. Validity and reliability

In the measurement model stage, we examined item reliability, internal consistency, convergent validity, and discriminant validity. For item reliability, the results reveal no severe problems; most items exceed the recommended 0.707 level threshold [28], as indicated in Table 1. To evaluate the constructs' internal consistency, we used Cronbach's alpha and composite reliability (CR); they ranged from 0.766 to 0.908 and 0.850 to 0.924, respectively, exceeding the 0.70 cut-off ([28]; see Table 1). In support of convergent validity, the average variance extracted (AVE) for the constructs ranged from 0.551 to 0.661, above the 0.5 threshold [28].

For discriminant validity, we uncovered no issues; the AVE for each construct was more significant than the variance that each construct shared with the other latent variables (Table 2) [28]. Henseler et al. [32] propose an alternative, more reliable method, the heterotrait-monotrait ratio (HTMT) of correlations, based on a multitrait-multimethod matrix. Table 3 shows that the HTMT values are below 0.90, confirming the discriminant validity of each pair of variables.

All HTMT values differ significantly from 1, and the 95% confidence intervals (CIs) do not include 1 [32], confirming the discriminant validity of each pair of variables.

4.2. Hypotheses testing

Table 4 presents the findings related to our H1 and H2. In sustaining H1, green core competence relates significantly and positively to firm competitive advantages ($\beta = 0.386$, $t = 6.467$, $p < 0.000$). As this study predicted in H2, the positive influence of green core competence on firm competitive advantages is mediated by positive mental health. Using a bootstrapping method with 5,000 subsamples, we find a significant indirect effect of green core competence on firm competitive advantages through positive mental health (indirect effect = 0.198, $t = 3.019$, $p < 0.001$). Because the 95% CI does not include 0 (lower limit = 0.075, upper limit = 0.293), we affirm that mediation exists (Preacher & Hayes, 2008). Therefore, the mediating effect of positive mental health in the relationship of green

Table 2. Descriptive statistics, correlation matrix, and discriminant validity via Fornell and Larcher.

Constructs	Mean	SD	1	2	3	4	5	6	7	8	9
1. Green Core Competence	3.745	0.568	0.767								
2. Positive Metal Health	3.679	0.568	0.613	0.715							
3. Trust in Government	4.171	0.658	0.422	0.514	0.834						
4. Top Management Support	4.582	0.568	0.144	0.165	0.483	0.809					
5. Firm Competitive Advantages	4.353	0.557	0.345	0.583	0.472	0.305	0.742				
6. Gender	1.225	0.424	-0.006	0.030	0.141	-0.006	0.021	n.a			
7. Age	3.111	1.006	-0.092	-0.047	-0.007	0.058	0.035	-0.095	n.a		
8. Education	2.322	1.255	0.011	0.003	-0.059	-0.114	-0.028	-0.078	0.025	n.a	
9. Job Experience	3.231	1.187	-0.167	-0.079	0.074	0.083	0.038	-0.019	-0.021	0.694	n.a

Notes: S.D. = Standard Deviation. n.a = not applicable.

Table 3. Discriminant validity Via HTMT.

Constructs	1	2	3	4	5
1. Green Core Competence					
2. Positive Metal Health	0.461				
3. Trust in Government	0.345	0.641			
4. Top Management Support	0.536	0.652	0.529		
5. Firm Competitive Advantages	0.175	0.285	0.359	0.558	

Notes: HTMT should be lower than 0.85.

Table 4. Structural path analysis: Direct and indirect effect.

Hypothesis	Relationship	SB	SD	t-value	p-values	Bias and Corrected	Decision
						Bootstrap 95% CI	
[Lower Level; Upper Level]							
H-1	Green Core Competence -> Firm Competitive Advantages	0.386	0.060	6.467	0.000	[0.275; 0.475]	Supported
H-2	Green Core Competence -> Positive Metal Health-> Firm Competitive Advantages	0.198	0.066	3.019	0.001	[0.075; 0.293]	Supported

core competence with firm competitive advantages is significant, clearly supporting H1 and H2.

The moderation test was the key contributor to determining if trust in government moderates the relationship between green core competence and positive mental health and if trust in government moderates the relationship between positive mental health and firm competitive advantages. As such, the results of the moderation analysis for the interactions were as follows: The first interaction between green core competence and trust in government toward positive mental health revealed a significant interaction, such that ($\beta = 0.131$, $t = 4.231$, and $p < 0.000$). Hence, H3 is supported. The second interaction between positive mental health and trust in government toward the firm competitive advantages also revealed a significant interaction, with values of ($\beta = 0.149$, $t = 2.752$, and $p < 0.001$). Therefore, H4 is accepted (see Table 5).

Regarding top management support’s second moderation role, H5 and H6 serve in two roles. As displayed in Table 5, first, top management support moderates the relationship between green core competence and positive mental health and this relationship was significant, as shown ($\beta = 0.199$, $t = 3.569$, and $p < 0.001$). Second, top management

support moderates the relationship between positive mental health and firm competitive advantages; thus, this interaction was significant ($\beta = 0.245$, $t = 2.341$, and $p < 0.000$). Therefore, H3-H6 are supported, and all the results are presented in Table 5.

Generally, it is unclear how a moderation analysis differs for high and low interaction. In other words, the size of the precise nature of this effect is not easy to define from the analysis of the coefficient itself [21]. Thus, Dawson [21] suggested that this can be followed up with an interaction plot. Hence, this study employed an interaction plot for all four interactions to look at the gradient of the slopes. As indicated in the following Figs. 2 to 5.

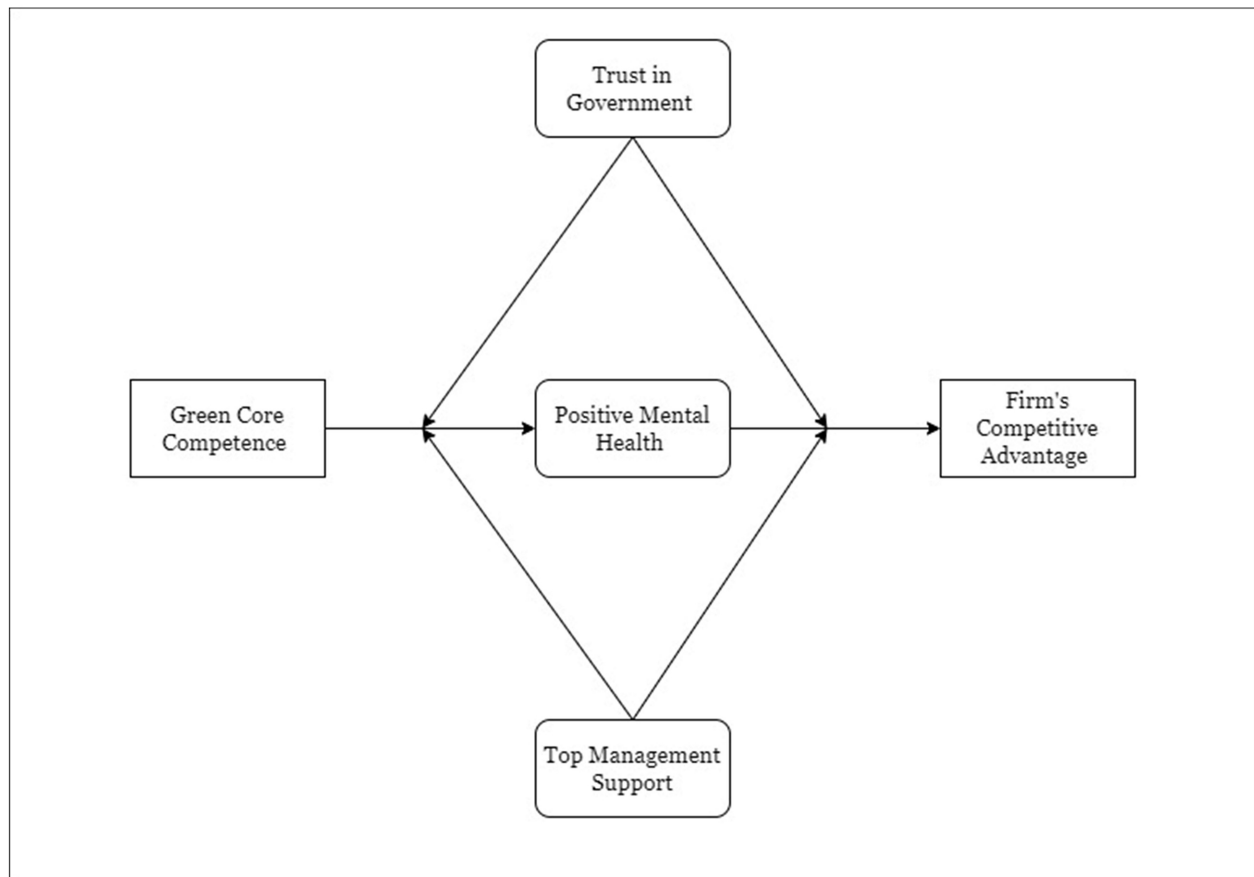
5. Discussion

This study shows that sustainability-based advantage in Iraqi firms is not driven solely by organizational capability, but by the interaction among capability, human functioning, and governance conditions. Empirically, green core competence is positively associated with competitive advantage, and a substantial portion of this relationship is mediated by positive mental health. In addition, the

Table 5. Structural path analysis: The interaction effect (moderation).

Hypothesis	Relationship	SB	SD	t-value	p-values	Bias and Corrected Bootstrap 95% CI	Decision
						[Lower Level; Upper Level]	
H-3	GCC X TIG-> PMH	0.131	0.052	4.231	0.000	[0.041; 0.203]	Supported
H-4	PMH X TIG-> FCA	0.149	0.050	2.752	0.001	[0.064; 0.232]	Supported
H-5	GCC X TMS-> PMH	0.199	0.056	3.569	0.001	[0.027;0.176]	Supported
H-6	PMH X TMS-> FCA	0.245	0.064	2.341	0.000	[0.117; 0.240]	supported

Keys: GCC X TIG-> PMH = Green Core Competence -> Trust in Government -> Positive Metal Health; PMH X TIG-> FCA= Positive Metal Health -> Trust in Government -> Firm Competitive Advantages; GCC X TMS-> PMH= Green Core Competence -> Top Management Support -> Positive Metal Health; PMH X TMS-> FCA= Positive Metal Health -> Top Management Support -> Firm Competitive Advantages.

**Fig. 1.** Proposed research framework.

results indicate that trust in government and top management support strengthen key links in the model—specifically, the relationship between green core competence and positive mental health, and the relationship between positive mental health and competitive advantage. Collectively, these findings support the value of integrating the Resource-Based View (RBV), Job Demands–Resources (JD-R) theory, and Stakeholder Theory, while also offering a public administration interpretation: sustainability becomes a competitive asset when the institutional environment is credible and when internal leadership provides the implementation capacity to convert green intent into performance.

The positive effect of green core competence on competitive advantage is consistent with RBV arguments that distinctive, embedded capabilities can generate superior performance when they are valuable, hard to imitate, and tied to the firm's routines and strategy. In this study, green core competence appears to function as more than a reputational signal; it behaves as an operational capability linked to advantage. This is important for the Iraq context, where firms face uncertainty and resource constraints that can make superficial sustainability initiatives fragile. When green competence is genuine embedded in processes and strategic priorities, it can improve efficiency, enhance legitimacy, and support

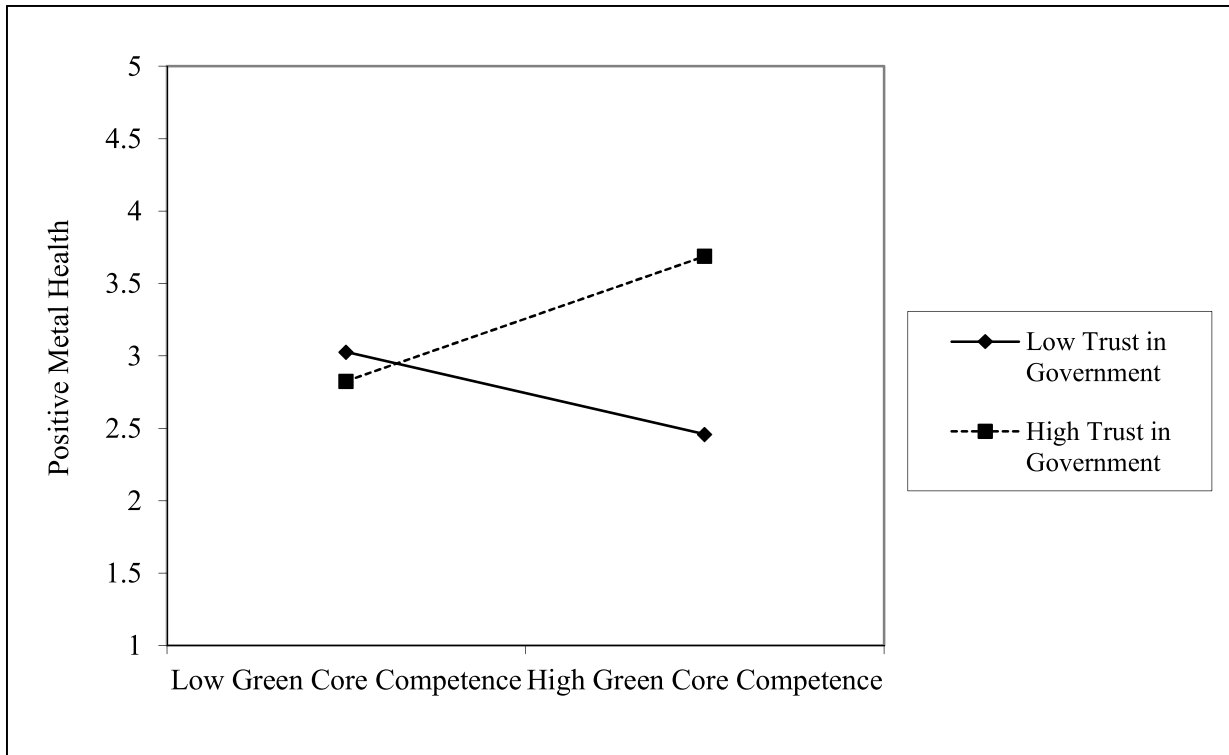


Fig. 2. Green core competence X trust in government -> Positive metal health.

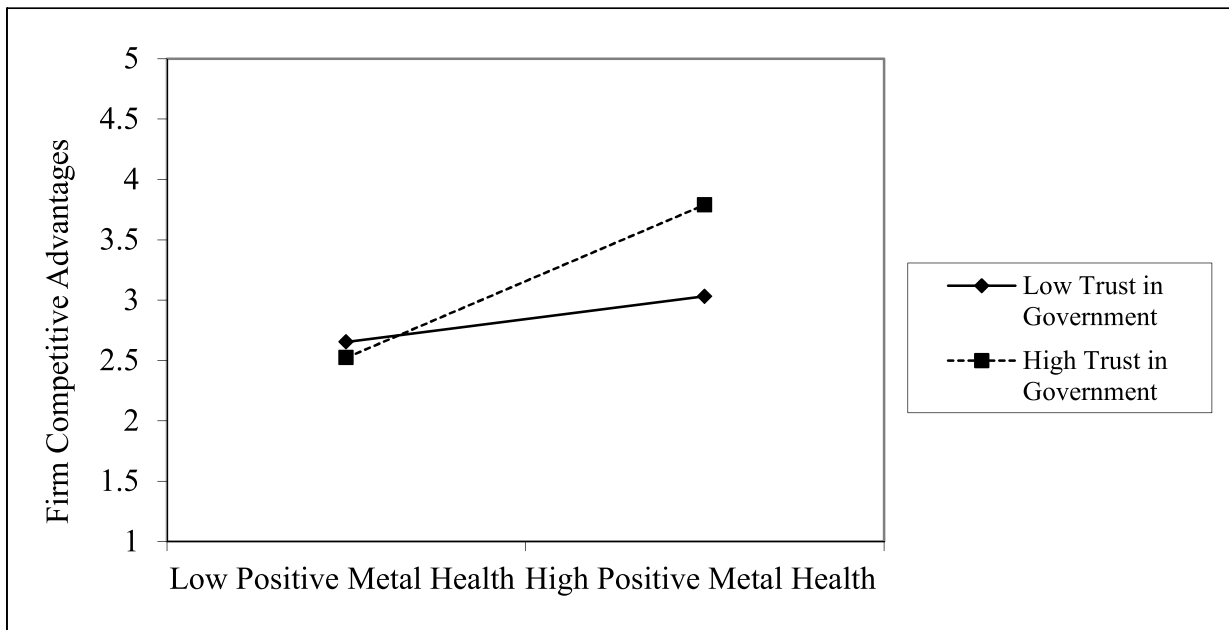


Fig. 3. Positive metal health X trust in government -> firm competitive advantages.

innovation, thereby strengthening competitive advantage [61, 68].

From a public administration lens, these results also imply that green competence yields returns, at least in part, because it improves “administrative fit” with the external governance environ-

ment. As governments increasingly emphasize environmental compliance and sustainability priorities, firms with stronger green competence are better positioned to navigate regulatory expectations, respond to public-sector signals, and reduce exposure to compliance-related risk. In practice, this can

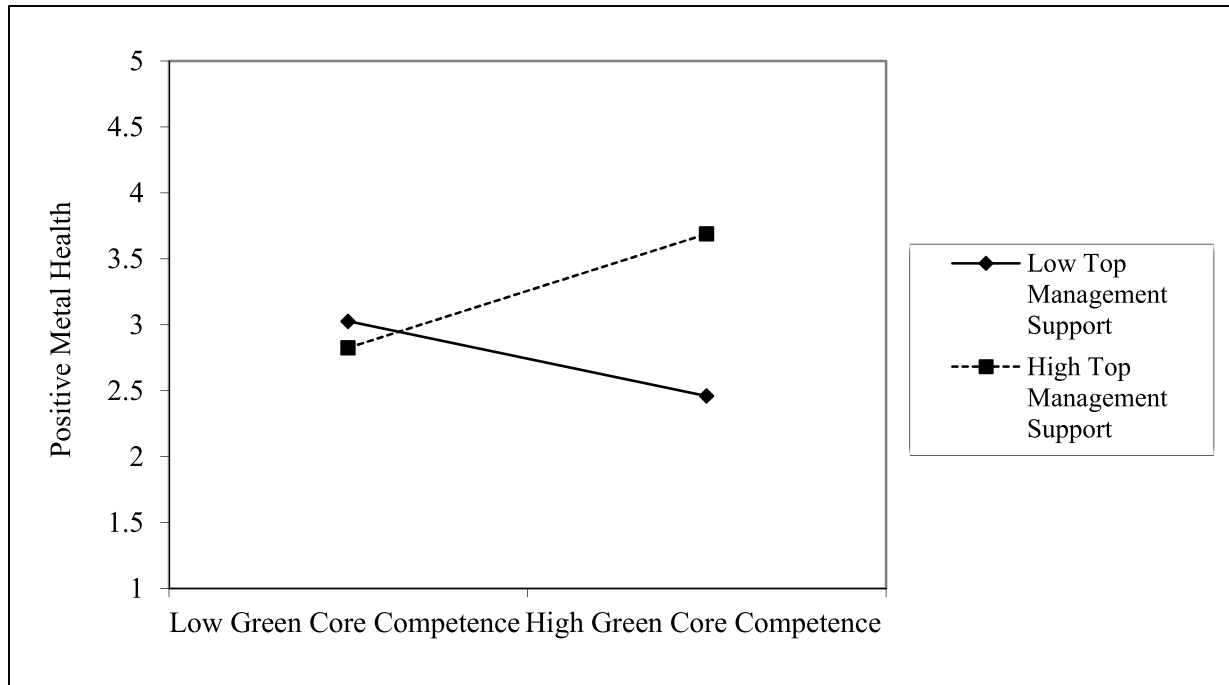


Fig. 4. Green core competence X top management support -> positive metal health.

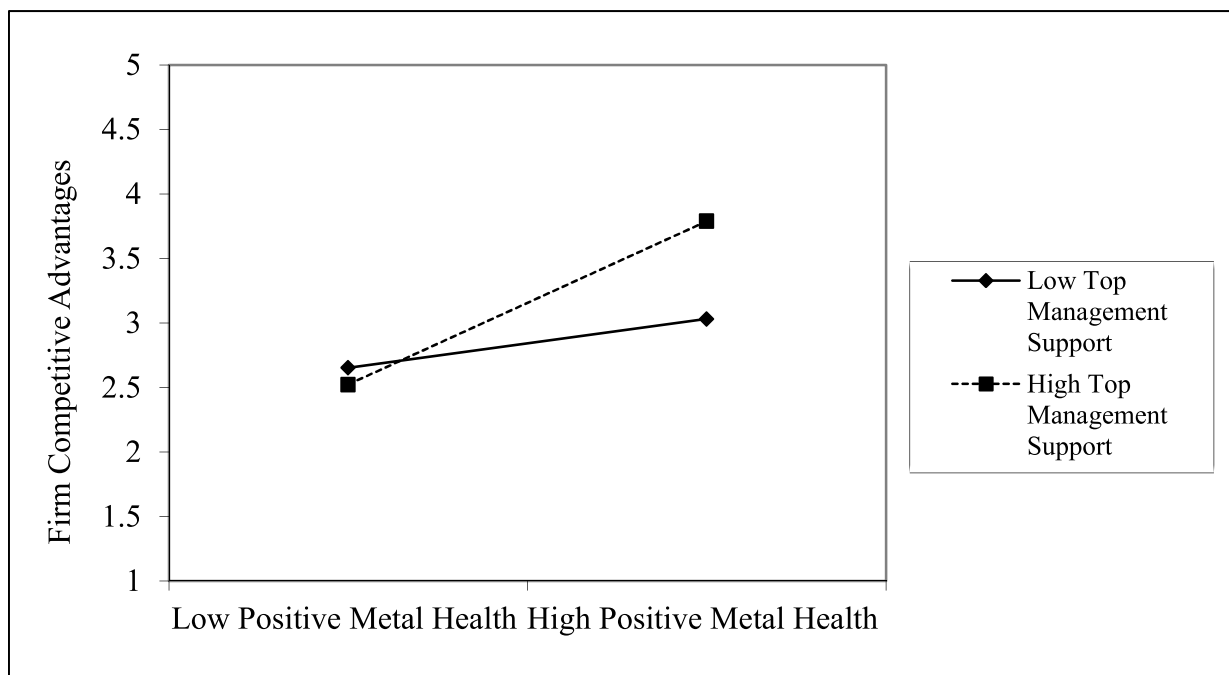


Fig. 5. Positive metal health X top management support -> firm competitive advantages.

manifest in smoother licensing and approvals, stronger alignment with public procurement expectations, greater readiness for policy change, and greater credibility with regulators and public stakeholders. This complements a purely market-based view of competitive advantage by highlighting that public au-

thority and policy direction can shape what counts as competitiveness.

A central contribution of the study is demonstrating that positive mental health is not peripheral to sustainability strategy; it is part of the mechanism through which capability becomes performance.

Consistent with JD-R logic, green core competence can function as a job resource by enhancing meaning, coherence, and learning opportunities related to sustainability initiatives, thereby supporting positive psychological functioning [10]. In change-heavy environments, this matters because sustainability work often involves new routines, coordination demands, and uncertainty. Employees who experience stronger well-being are more likely to sustain attention, show cognitive flexibility, collaborate effectively, and persist through setbacks—behaviors that strengthen execution quality and ultimately influence competitive outcomes [14, 46].

This mechanism is particularly relevant in Iraq, where organizations may face compounded stressors (market volatility, institutional uncertainty, and infrastructure constraints). Under such conditions, sustainability initiatives can easily become compliance-oriented burdens unless organizations provide resources and meaning that protect psychological functioning. The mediation finding therefore reinforces the idea that “green capability” should be treated not only as a technical and strategic asset, but also as a human-centered implementation system that shapes how people experience change.

The moderating role of trust in government carries a distinctly public administration implication: governance credibility strengthens implementation pathways. When trust in government is higher, the relationship between green core competence and positive mental health becomes stronger, and the effect of positive mental health on competitive advantage also becomes stronger. This pattern suggests that employees and managers do not interpret sustainability investments in isolation. They evaluate these investments within an institutional narrative: whether environmental rules are stable, whether enforcement is fair, whether government commitments are credible, and whether sustainability efforts are likely to be recognized rather than undermined by uncertainty [62, 75].

In practical terms, trust in government can reduce “policy ambiguity costs.” When firms believe public institutions act reasonably and consistently, sustainability work is more likely to feel purposeful and future-oriented, rather than fragile or symbolic. This can support psychological safety and reduce the perceived risk of investing effort in green practices. Moreover, higher trust can improve the conversion of well-being into performance outcomes because the institutional environment is more likely to reward compliant and proactive firms through legitimacy, smoother interactions with regulators, and reduced uncertainty around the value of green investments [8, 23]. In a context like Iraq, where public institutions

play a significant role in shaping market confidence, this institutional moderation is not a minor detail; it is part of the performance logic.

The moderating role of top management support reinforces a core implementation insight: strategy works when leadership builds capacity. The results indicate that when top management support is stronger, green core competence is more strongly associated with positive mental health, and positive mental health is more strongly linked to competitive advantage. This suggests that leadership support does not merely “encourage” sustainability; it strengthens the internal conditions that make sustainability workable and psychologically sustainable. Senior leaders can reduce ambiguity, allocate resources, protect green initiatives during competing priorities, and signal that sustainability is part of the organization’s identity rather than a temporary project [33, 34].

In public administration terms, this mirrors what implementation research repeatedly shows: policies and reforms succeed when organizations have leadership backing, clear priorities, and enabling resources. Similarly, green competence generates stronger psychological benefits when employees see consistent managerial commitment, and well-being generates stronger competitive payoffs when leaders create channels for execution, such as cross-functional coordination, measurement systems, recognition, and continuous improvement [13, 30]. In the Iraqi context, where external conditions may be uncertain, internal leadership can act as a stabilizing governance mechanism that protects the sustainability–performance pathway ([57].

Taken together, the findings suggest that competitive advantage in the sustainability era is best understood as a governed capability rather than a purely internal resource. Green core competence matters, but its performance value increases when (1) psychological functioning supports implementation and (2) institutional and leadership environments reduce uncertainty and enable follow-through. This contributes to research on sustainability strategy while also speaking directly to public administration: governmental credibility and organizational leadership jointly shape the conditions under which private actors can deliver sustainability outcomes that are both legitimate and competitively meaningful.

5.1. Theoretical implications

This study extends RBV by showing that a green capability can be performance-relevant in a high-uncertainty setting. However, its value is partly contingent on governance and internal leadership conditions. It extends the JD-R model by demonstrating

that sustainability capability can function as a job resource, with downstream performance implications mediated by positive mental health. It also refines stakeholder theory in an administrative direction by treating government not only as a stakeholder but also as a credibility provider whose perceived fairness and effectiveness shape firms' willingness and ability to convert sustainability into advantage.

5.2. Practical implications

For Iraqi firms, the findings imply that sustainability competitiveness should be managed as a dual system: building operational green competence while actively supporting employee psychological functioning during sustainability implementation. For top management, the results emphasize that leadership support must be visible in resource allocation, priority-setting, and routine reinforcement; otherwise, green competence may not generate durable well-being or competitive returns.

For policymakers and public authorities, the findings imply that private sustainability outcomes depend on institutional credibility. Policies and initiatives that are clear, stable, fairly enforced, and transparently communicated can strengthen the psychological and performance returns of sustainability investments. In other words, trust-building is not only a governance goal; it is also a practical lever for implementing sustainability across firms.

5.3. Study limitations

This study relies on cross-sectional, self-reported data, which limits causal inference and may introduce common-method bias. Future work could use longitudinal designs or mixed data sources (e.g., objective performance indicators, third-party ESG measures, or policy/enforcement indicators) to strengthen inference. The convenience sampling approach and the Iraq-only context may limit generalizability; replication across sectors and comparable institutional contexts would improve external validity. Finally, future research could test additional public-administration mechanisms, such as regulatory quality, enforcement consistency, or public procurement pressure, as more direct institutional conditions shaping sustainability-performance pathways.

Declarations

Conflict of interest

The authors declare that they have no conflicts of interest.

Author contribution

All authors contributed equally to the writing and preparation of this manuscript. All authors have read and approved the final version of the paper.

Data availability

The datasets generated and/or analyzed during the current study are available from the corresponding author on reasonable request.

Consent to participate

Informed consent was obtained from all participants prior to completing the questionnaire. Participants were informed about the study's purpose, the voluntary nature of participation, and the confidentiality of their responses.

Consent for publication

Not applicable. No personally identifying information is reported in this manuscript.

Competing interests

The authors declare that they have no competing interests.

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Use of AI-assisted technologies

A generative AI tool (ChatGPT) was used to support language refinement and formatting of selected parts of the manuscript (e.g., improving clarity, grammar, and academic phrasing). The AI tool was not used to generate research data, fabricate results, conduct statistical analyses, or determine model specification. All content was reviewed, verified, and edited by the authors, who take full responsibility for the accuracy, originality, and integrity of the manuscript.

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