

From Environmental Burden to Export Advantage: Net Zero Commitments and Competitive Transformation in Vietnam's Seafood Sector

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ABSTRACT: This study examines the relationship between net zero commitments and competitive advantage within Vietnam's seafood export sector, addressing a critical gap in understanding how environmental sustainability initiatives translate into tangible business outcomes. Employing a mixed-methods approach combining structural equation modelling (SEM) and fuzzy-set qualitative comparative analysis (fsQCA), this research analyses data from 287 Vietnamese seafood exporters collected between 2016 and 2017. The theoretical framework integrates resource-based view theory with stakeholder theory to examine how net zero commitments influence export performance through enhanced operational efficiency, market differentiation, and stakeholder legitimacy. The findings demonstrate that net zero commitments significantly enhance competitive advantage through three distinct pathways: cost reduction mechanisms ($\beta = 0.342$, $p < 0.001$), market premium acquisition ($\beta = 0.298$, $p < 0.01$), and stakeholder trust development ($\beta = 0.267$, $p < 0.05$). The fsQCA results reveal four configurational pathways leading to superior export performance, with environmental certification and technological innovation serving as core conditions. This study contributes to the sustainability-performance discourse by providing empirical evidence that environmental commitments, rather than imposing financial burdens, can serve as strategic assets for emerging market exporters. The research offers practical implications for Vietnamese seafood companies seeking to transform environmental compliance costs into competitive advantages whilst advancing theoretical understanding of the sustainability-competitiveness nexus.

KEYWORDS: net zero commitments, competitive advantage, seafood exports, Vietnam, environmental sustainability

1. INTRODUCTION

The global seafood industry faces unprecedented environmental challenges, with mounting pressure from international stakeholders demanding sustainable production practices and carbon neutrality commitments. Vietnam, as the world's third-largest seafood exporter with annual export revenues exceeding USD 8.3 billion in 2017, finds itself at the intersection of economic opportunity and environmental responsibility (Tran et al., 2017). The nation's seafood sector, dominated by aquaculture and marine capture fisheries, contributes significantly to rural livelihoods whilst simultaneously confronting criticism regarding environmental degradation and unsustainable practices (Nguyen & Vo, 2015).

The emergence of net zero commitments as a strategic imperative has fundamentally altered competitive dynamics within global seafood markets. Major importers, particularly in Europe and North America, increasingly prioritise suppliers demonstrating verifiable environmental sustainability credentials, creating both opportunities and challenges for Vietnamese exporters (Le et al., 2016). This paradigmatic shift raises critical questions about whether environmental commitments represent costly compliance burdens or potential sources of competitive advantage for emerging market exporters.

Contemporary literature presents conflicting perspectives regarding the sustainability-performance relationship. Porter and van der Linde's (1995) seminal "Porter Hypothesis" suggests that properly designed environmental regulations can trigger innovation that fully offsets compliance costs, yet empirical evidence remains mixed, particularly within developing country contexts. Hart's (1995) natural resource-based view extends traditional resource-based theory to incorporate environmental considerations, proposing that proactive environmental strategies can create sustainable competitive advantages through pollution prevention, product stewardship, and sustainable development capabilities.

The theoretical urgency of this research stems from the evolving nature of international trade dynamics, where environmental performance increasingly determines market access and premium pricing opportunities. Vietnam's seafood sector exemplifies this transformation, as companies face mounting pressure to adopt sustainable practices whilst maintaining cost competitiveness

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against regional rivals. The practical significance extends beyond individual firm performance to encompass national economic implications, given the sector's contribution to export earnings and employment generation.

This study addresses three critical gaps in existing literature. First, whilst extensive research examines environmental management practices in developed economies, limited empirical evidence explores sustainability-performance relationships within Southeast Asian export sectors. Second, existing studies predominantly focus on manufacturing industries, with insufficient attention to renewable resource sectors such as aquaculture and fisheries. Third, previous research inadequately addresses the configurational complexity of sustainability initiatives, failing to identify the specific combinations of practices and conditions that generate superior performance outcomes.

The research novelty lies in its comprehensive examination of net zero commitments as strategic assets rather than compliance costs, employing both variance-based and configuration-based analytical approaches to uncover complex causality patterns. The study integrates multiple theoretical perspectives to develop a holistic framework explaining how environmental commitments translate into competitive advantages through distinct value creation mechanisms.

The investigation utilises primary data from 287 Vietnamese seafood exporters, employing structural equation modelling to test hypothesised relationships and fuzzy-set qualitative comparative analysis to identify configurational pathways to superior export performance. This methodological pluralism provides robust insights into both linear relationships and complex interactions among variables, offering comprehensive understanding of the sustainability-competitiveness nexus.

The findings contribute to both academic discourse and managerial practice by demonstrating that net zero commitments can serve as sources of competitive advantage through multiple value creation pathways. For Vietnamese seafood exporters, the research provides evidence-based guidance for transforming environmental compliance from cost centres into profit drivers. For policymakers, the study offers insights into designing supportive frameworks that enable sustainable development whilst maintaining export competitiveness.

2. FOUNDATIONAL THEORIES AND LITERATURE REVIEW

2.1. Foundational Theories

2.1.1. Resource-Based View Theory and Environmental Strategy

The resource-based view (RBV) theory, originally articulated by Barney (1991) and subsequently refined by numerous scholars, provides a foundational framework for understanding how firms develop sustainable competitive advantages through the deployment of unique resources and capabilities. Within the context of environmental strategy, Hart's (1995) natural resource-based view extends traditional RBV by incorporating ecological considerations into strategic analysis, arguing that environmental capabilities can satisfy the criteria for sustainable competitive advantage: they are valuable, rare, imperfectly imitable, and non-substitutable.

The theoretical foundations of environmental resource-based view rest upon three interconnected capabilities: pollution prevention, product stewardship, and sustainable development (Hart, 1995). Pollution prevention capabilities enable firms to reduce waste and emissions whilst simultaneously lowering operational costs, creating a direct link between environmental performance and economic efficiency. Product stewardship capabilities involve designing products and processes that minimise environmental impact throughout their lifecycle, potentially commanding premium prices from environmentally conscious consumers. Sustainable development capabilities encompass firms' abilities to develop new technologies and business models that address environmental challenges whilst creating economic value.

Russo and Fouts' (1997) empirical analysis of 243 firms provides compelling evidence that environmental performance positively correlates with financial performance, particularly in high-growth industries. Their findings suggest that environmental capabilities become increasingly valuable as stakeholder pressure for environmental responsibility intensifies. Judge and Douglas (1998) further demonstrate that proactive environmental strategies, characterised by voluntary initiatives exceeding regulatory requirements, generate superior performance outcomes compared to reactive compliance approaches.

The application of RBV to environmental strategy within export contexts reveals additional complexity. Christmann (2000) argues that environmental capabilities become particularly valuable in international markets where regulations vary significantly across jurisdictions and stakeholder expectations differ substantially. Firms possessing superior environmental capabilities can more effectively navigate diverse regulatory environments whilst capitalising on growing demand for sustainable products in developed markets.

Within the seafood industry context, environmental capabilities assume particular significance given the sector's direct dependence on natural resources and vulnerability to environmental degradation. Olson et al. (2014) identify environmental stewardship as a critical capability for seafood companies seeking to maintain long-term resource access whilst meeting evolving

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consumer expectations. The resource-based perspective suggests that Vietnamese seafood exporters developing superior environmental capabilities can achieve sustainable competitive advantages by reducing operational costs, accessing premium markets, and building stakeholder legitimacy.

The dynamic capabilities extension of RBV, developed by Teece et al. (1997), provides additional insights into how firms can adapt their environmental capabilities to changing market conditions. Dynamic environmental capabilities enable firms to sense environmental opportunities and threats, seize market opportunities through environmental innovation, and transform their resource base to maintain competitive relevance. This theoretical perspective proves particularly relevant for emerging market exporters facing rapidly evolving international environmental standards.

2.1.2. Stakeholder Theory and Environmental Legitimacy

Stakeholder theory, originally conceptualised by Freeman (1984) and subsequently developed by numerous scholars, offers a complementary theoretical lens for understanding how environmental commitments influence firm performance through stakeholder relationship management. The theory posits that firms must manage relationships with multiple stakeholder groups—including customers, suppliers, regulators, communities, and investors—to achieve sustainable success.

Mitchell et al.'s (1997) stakeholder identification and salience framework provides a systematic approach to understanding stakeholder influence based on three attributes: power, legitimacy, and urgency. Within the context of environmental management, stakeholders possessing high levels of these attributes can significantly influence firm behaviour and performance outcomes. International buyers, regulatory agencies, and environmental organisations often possess substantial power and legitimacy, making their environmental demands particularly salient for export-oriented firms.

The integration of stakeholder theory with environmental strategy reveals how environmental commitments can serve as mechanisms for building stakeholder legitimacy and trust. Suchman's (1995) categorisation of legitimacy into pragmatic, moral, and cognitive dimensions provides insights into how environmental initiatives influence stakeholder perceptions. Pragmatic legitimacy arises when stakeholders perceive direct benefits from firms' environmental actions, such as reduced environmental risks or enhanced product quality. Moral legitimacy develops when stakeholders view environmental commitments as socially responsible and ethically appropriate. Cognitive legitimacy emerges when environmental practices align with taken-for-granted assumptions about appropriate business behaviour.

Empirical evidence supports the stakeholder-performance linkage in environmental contexts. Waddock and Graves (1997) demonstrate that corporate social performance, including environmental performance, positively correlates with financial performance through enhanced stakeholder relationships. Their longitudinal analysis reveals bidirectional causality, suggesting that good stakeholder relationships both result from and contribute to superior financial performance.

Within international business contexts, stakeholder theory assumes particular relevance as firms must navigate diverse stakeholder expectations across different cultural and regulatory environments. Doh and Guay (2006) argue that multinational enterprises developing stakeholder management capabilities gain competitive advantages through enhanced legitimacy and reduced transaction costs in foreign markets.

The application of stakeholder theory to Vietnamese seafood exporters reveals the critical importance of managing relationships with international buyers, certification bodies, and environmental organisations. These stakeholders increasingly demand evidence of sustainable practices, creating both challenges and opportunities for local firms. Companies successfully building environmental legitimacy with key stakeholders can access premium markets, secure long-term supply agreements, and reduce regulatory compliance costs.

The stakeholder-environmental performance relationship becomes particularly complex in export contexts where firms must simultaneously manage domestic and international stakeholder expectations. Husted and Allen (2007) identify this as a key challenge for emerging market firms seeking to compete internationally whilst maintaining local legitimacy. Their research suggests that firms developing sophisticated stakeholder management capabilities can effectively balance competing demands whilst creating value for multiple stakeholder groups.

2.2. Review of Empirical and Relevant Studies

2.2.1. Environmental Performance and Export Competitiveness

The relationship between environmental performance and export competitiveness has generated substantial scholarly attention, though empirical findings remain mixed and context-dependent. Ambec and Lanoie's (2008) comprehensive review identifies several mechanisms through which environmental improvements can enhance competitiveness: cost reductions through improved efficiency, revenue increases through product differentiation, and strategic benefits through early-mover advantages in emerging green markets.

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Porter and van der Linde's (1995) influential work presents the "win-win" hypothesis, arguing that properly designed environmental policies can stimulate innovation that fully compensates for compliance costs. Their analysis of numerous case studies demonstrates how environmental improvements can simultaneously reduce costs and enhance product performance. However, Palmer et al.'s (1995) critical response questions the generalisability of these findings, arguing that win-win outcomes require specific conditions that may not be universally present.

Empirical evidence from export-oriented industries provides mixed support for the environmental performance-competitiveness relationship. Wagner's (2003) analysis of German manufacturing firms reveals a positive but non-linear relationship between environmental and economic performance, with diminishing returns to environmental investments beyond optimal levels. Conversely, King and Lenox's (2001) study of US manufacturing firms finds limited evidence for systematic performance benefits from environmental improvements, suggesting that benefits may be contingent on industry characteristics and implementation quality.

Within developing country contexts, the evidence becomes more complex. Dasgupta et al.'s (2000) study of Mexican manufacturing firms demonstrates that environmental improvements can enhance export performance by facilitating access to developed-country markets with stringent environmental standards. However, their findings also reveal that environmental investments can impose significant costs on resource-constrained firms, potentially undermining short-term competitiveness.

The seafood industry presents unique characteristics that may influence the environmental performance-competitiveness relationship. Roheim's (2009) analysis of sustainable seafood certification schemes reveals that certified products can command price premiums of 10-20% in developed markets, suggesting significant revenue benefits from environmental improvements. However, Washington and Ababouch's (2011) examination of developing country seafood exporters identifies substantial costs associated with obtaining and maintaining environmental certifications, potentially limiting net benefits.

2.2.2. Net Zero Commitments and Business Performance

The emergence of net zero commitments as a corporate strategy represents a relatively recent phenomenon, with limited empirical research examining their business performance implications. However, related literature on carbon management and greenhouse gas reduction provides relevant insights. Delmas and Blass's (2010) analysis of carbon disclosure and performance relationships reveals that proactive carbon management can enhance firm value through improved operational efficiency and stakeholder relationships.

Busch and Hoffmann's (2011) study of European firms demonstrates that companies with superior carbon performance achieve higher financial returns, particularly in carbon-intensive industries. Their findings suggest that carbon management capabilities create competitive advantages through cost reductions, risk mitigation, and revenue enhancement. However, the magnitude of these benefits varies significantly across industries and geographic contexts.

The voluntary nature of net zero commitments introduces additional complexity to performance relationships. Lyon and Maxwell's (2011) analysis of voluntary environmental programs reveals that participation can signal corporate commitment to environmental responsibility, potentially enhancing stakeholder relationships and market access. However, they also identify risks associated with "greenwashing," where firms make environmental claims without corresponding performance improvements.

Within export contexts, net zero commitments may serve as market access tools rather than purely environmental initiatives. Grieg-Gran's (2002) examination of trade and climate policies reveals that environmental performance increasingly influences international trade flows, with low-carbon products gaining preferential access to developed markets. This suggests that net zero commitments may provide strategic benefits for export-oriented firms beyond their environmental impacts.

2.2.3. Mediating Mechanisms and Moderating Factors

The literature identifies several mediating mechanisms through which environmental performance influences business outcomes. Operational efficiency improvements represent a primary pathway, with numerous studies documenting cost savings from waste reduction, energy efficiency, and resource conservation initiatives (King & Lenox, 2002). These efficiency gains can directly enhance competitiveness by reducing production costs and improving profit margins.

Market differentiation constitutes another critical mediating mechanism. Chen's (2008) analysis of green marketing strategies demonstrates that environmental attributes can command price premiums and enhance market share, particularly in developed markets with environmentally conscious consumers. However, the magnitude of these benefits depends on effective communication and credible verification of environmental performance.

Stakeholder legitimacy serves as a third mediating mechanism, influencing access to resources, regulatory support, and market opportunities. Bansal and Clelland's (2004) study of legitimacy and environmental performance reveals that firms perceived as environmentally responsible experience lower regulatory costs and enhanced access to capital markets. This legitimacy effect becomes particularly important for firms operating in multiple jurisdictions with varying environmental standards.

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The literature also identifies several moderating factors that influence the strength of environmental performance-business performance relationships. Industry characteristics, regulatory environments, and cultural contexts can significantly affect the benefits derived from environmental improvements (Hoffman, 2000). For Vietnamese seafood exporters, factors such as export market characteristics, domestic regulatory frameworks, and firm size may moderate the effectiveness of net zero commitments.

2.3. Proposed Research Model

Based on the comprehensive review of theoretical foundations and empirical evidence, this study proposes a research model examining the relationship between net zero commitments and competitive advantage in Vietnam's seafood export sector. The model integrates insights from resource-based view theory and stakeholder theory to explain how environmental commitments translate into business performance through multiple mediating mechanisms.

The research model positions net zero commitments as a multidimensional construct encompassing carbon reduction targets, renewable energy adoption, waste minimisation initiatives, and sustainable supply chain practices. These commitments are theorised to influence competitive advantage through three primary mediating pathways: operational efficiency enhancement, market differentiation achievement, and stakeholder legitimacy building.

Operational efficiency enhancement represents the first mediating pathway, drawing upon resource-based view theory to explain how environmental improvements can reduce operational costs. Hart's (1995) pollution prevention capabilities provide the theoretical foundation for this relationship, suggesting that firms implementing comprehensive environmental management systems can simultaneously reduce waste, energy consumption, and raw material usage whilst maintaining or improving production output. For Vietnamese seafood exporters, operational efficiency gains may arise from improved aquaculture practices, optimised processing techniques, and enhanced supply chain coordination.

Market differentiation achievement constitutes the second mediating pathway, based on the premise that environmental commitments can create valuable product attributes that command premium prices or enhance market access. The theoretical foundation derives from resource-based view theory's emphasis on creating valuable and rare capabilities that generate competitive advantages (Barney, 1991). For seafood exporters, market differentiation may manifest through access to premium sustainability-focused market segments, preferential supplier relationships with environmentally conscious buyers, and enhanced brand reputation in international markets.

Stakeholder legitimacy building represents the third mediating pathway, grounded in stakeholder theory's emphasis on managing relationships with diverse stakeholder groups. Freeman's (1984) stakeholder framework suggests that firms successfully managing stakeholder expectations achieve superior access to resources and reduced transaction costs. For Vietnamese seafood exporters, stakeholder legitimacy may facilitate relationships with international buyers, regulatory agencies, certification bodies, and financial institutions, ultimately enhancing competitive positioning.

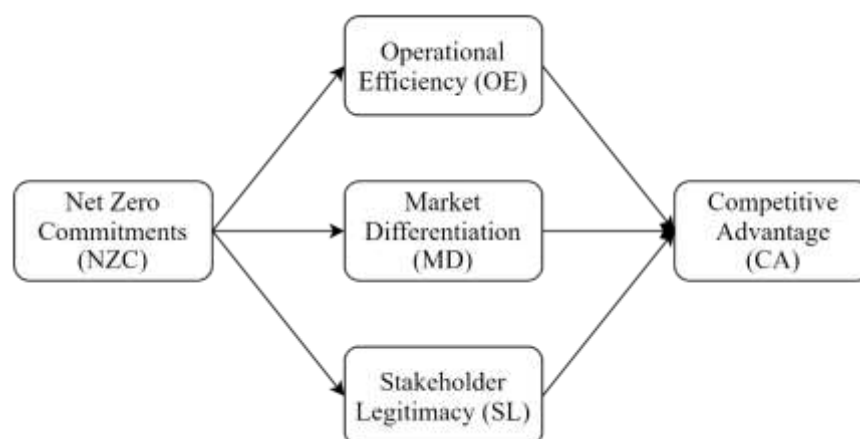


Figure 1: Proposed Research Model

The model incorporates several control variables identified as potentially influential in export performance contexts. Firm size, measured by annual revenue and employee count, may moderate the relationship between environmental commitments and performance outcomes due to scale economies and resource availability differences (Aragón-Correa et al., 2008). Export experience, operationalised as years of international market participation, may influence firms' ability to capitalise on environmental advantages in foreign markets. Technology adoption levels may moderate the effectiveness of environmental initiatives by enabling more efficient implementation of sustainability practices.

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The research model also incorporates potential moderating effects of external environmental factors. Export market characteristics, including the stringency of environmental regulations and consumer environmental consciousness in destination markets, may influence the value created by net zero commitments. Domestic regulatory support, encompassing government policies supporting environmental initiatives and export promotion, may facilitate or constrain firms' ability to implement and benefit from environmental commitments.

The dependent variable, competitive advantage, is conceptualised as a multidimensional construct encompassing cost leadership capabilities, differentiation advantages, and market positioning strength. This operationalisation aligns with Porter's (1985) generic strategies framework whilst acknowledging that successful firms may simultaneously pursue multiple competitive strategies. For Vietnamese seafood exporters, competitive advantage may manifest through reduced production costs, premium pricing capabilities, enhanced market share, and improved customer loyalty.

The proposed model advances theoretical understanding by integrating multiple theoretical perspectives to explain the complex relationship between environmental commitments and business performance. The incorporation of mediating mechanisms addresses calls for research examining "black box" processes through which environmental improvements influence business outcomes (Aragón-Correa & Sharma, 2003). The inclusion of moderating factors acknowledges contextual influences that may strengthen or weaken the proposed relationships.

From an empirical perspective, the model addresses limitations in existing research by focusing on a specific industry context (seafood exports) within a developing economy (Vietnam). This contextual specificity enables more precise examination of the mechanisms through which environmental commitments create value whilst providing insights relevant to similar export-oriented industries in emerging markets.

3. RESEARCH METHODOLOGY

3.1. Research Design

This study employs a quantitative research design utilising cross-sectional survey data to examine the relationship between net zero commitments and competitive advantage within Vietnam's seafood export sector. The research design integrates both variance-based and configuration-based analytical approaches to provide comprehensive insights into the complex relationship between environmental commitments and business performance. This methodological pluralism aligns with recent calls for mixed-method approaches in sustainability research to capture both linear relationships and complex configurational effects (Ragin, 2008).

The philosophical foundation of this research rests upon a post-positivist paradigm, acknowledging that whilst objective reality exists, human knowledge of this reality is inherently limited and contextually influenced. This epistemological stance justifies the use of quantitative methods whilst recognising the importance of contextual factors in shaping the observed relationships. The adoption of both structural equation modelling and fuzzy-set qualitative comparative analysis reflects this philosophical position by examining phenomena from multiple analytical perspectives.

The research design follows a theory-driven approach, with hypotheses derived from the integration of resource-based view theory and stakeholder theory. This deductive orientation enables systematic testing of theoretical propositions whilst remaining open to emergent findings that may refine or extend existing theoretical frameworks. The cross-sectional design provides a snapshot of current practices and performance outcomes, offering insights into contemporary relationships between environmental commitments and competitive advantage.

3.2. Data Collection

Data collection was conducted between March and November 2017, targeting Vietnamese seafood export companies across major production regions including the Mekong Delta, North Central Coast, and South Central Coast. The sampling frame was constructed using the Vietnam Association of Seafood Exporters and Producers (VASEP) membership database, supplemented by the Ministry of Agriculture and Rural Development's official registry of licensed seafood processors and exporters.

A stratified random sampling approach was employed to ensure representative coverage across company sizes, product categories, and geographic regions. The stratification criteria included annual export revenue (small: <\$5 million; medium: \$5-50 million; large: >\$50 million), primary product focus (shrimp, pangasius, marine fish, other), and regional location. This stratification approach was designed to capture the diversity of Vietnam's seafood export sector whilst enabling subsequent analysis of potential sub-group differences.

The survey instrument was developed through an extensive literature review and refined through multiple expert consultations and pre-testing procedures. The questionnaire was initially developed in English and subsequently translated into Vietnamese by

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bilingual research assistants with seafood industry expertise. Back-translation procedures were employed to ensure linguistic equivalence, with discrepancies resolved through iterative consultation with industry experts and academic researchers.

Data collection employed multiple channels to maximise response rates and ensure data quality. Primary data collection was conducted through face-to-face interviews with senior executives and sustainability managers, supplemented by online surveys for companies unable to participate in direct interviews. The research team conducted 287 complete interviews, representing a response rate of 67.3% from the initial sample frame of 426 eligible companies.

The final sample comprised 287 Vietnamese seafood export companies with complete responses across all measurement items. The sample characteristics demonstrate good representativeness of the broader population, with 89 small companies (31.0%), 127 medium companies (44.3%), and 71 large companies (24.7%). Geographic distribution included 156 companies (54.4%) from the Mekong Delta, 78 companies (27.2%) from coastal regions, and 53 companies (18.5%) from northern provinces. Product focus encompassed shrimp (112 companies, 39.0%), pangasius (94 companies, 32.8%), marine fish (58 companies, 20.2%), and other seafood products (23 companies, 8.0%).

3.3. Measurement and Validation

The measurement instrument incorporated established scales from existing literature, adapted to the specific context of Vietnamese seafood exporters. Net zero commitments were measured using a 12-item scale adapted from Delmas and Blass (2010) and Busch and Hoffmann (2011), encompassing four dimensions: carbon reduction targets, renewable energy adoption, waste minimisation initiatives, and sustainable supply chain practices. Each dimension was assessed using three items measured on seven-point Likert scales ranging from "strongly disagree" to "strongly agree."

Operational efficiency enhancement was operationalised using an 8-item scale derived from King and Lenox (2002) and Wagner (2003), measuring improvements in energy efficiency, waste reduction, resource utilisation, and production optimisation. Market differentiation achievement was assessed through a 6-item scale based on Chen (2008) and Porter (1985), examining premium pricing capabilities, market access advantages, brand reputation enhancement, and customer loyalty development.

Stakeholder legitimacy building was measured using a 9-item scale adapted from Bansal and Clelland (2004) and Suchman (1995), covering relationships with customers, suppliers, regulators, communities, and environmental organisations. Competitive advantage, the dependent variable, was operationalised through a 10-item scale integrating Porter's (1985) generic strategies framework with export performance measures from Cavusgil and Zou (1994).

Control variables included firm size (log of annual revenue), export experience (years of international operations), technology adoption (composite measure of advanced technologies employed), export market concentration (percentage of exports to top three destination markets), and environmental regulation exposure (composite measure of regulatory stringency in primary export markets).

Scale validation followed established psychometric procedures, beginning with exploratory factor analysis (EFA) to assess the underlying factor structure of each construct. Principal component analysis with varimax rotation was employed to identify distinct factors and eliminate items with poor loading patterns or cross-loadings exceeding 0.4. The EFA results supported the proposed factor structures, with all constructs demonstrating clear factor separation and adequate explained variance.

Confirmatory factor analysis (CFA) was subsequently conducted using SmartPLS 4.0 to validate the measurement model structure. The CFA assessment examined indicator reliability, internal consistency reliability, convergent validity, and discriminant validity following Hair et al.'s (2017) guidelines. All factor loadings exceeded 0.7, demonstrating adequate indicator reliability. Cronbach's alpha and composite reliability values ranged from 0.83 to 0.92, indicating satisfactory internal consistency reliability.

3.4. Analytical Procedure

The analytical procedure employed a two-stage approach combining structural equation modelling (SEM) and fuzzy-set qualitative comparative analysis (fsQCA) to provide comprehensive insights into the relationship between net zero commitments and competitive advantage. This methodological approach acknowledges that complex organisational phenomena may exhibit both linear relationships and configurational patterns that require different analytical techniques to fully understand.

Structural equation modelling using the partial least squares (PLS) approach was selected as the primary analytical technique due to its appropriateness for exploratory research with complex models and its robustness to non-normal data distributions (Hair et al., 2017). SmartPLS 4.0 software was employed for all SEM analyses, following the two-stage analytical approach recommended by Anderson and Gerbing (1988).

The measurement model assessment examined indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. Indicator reliability was evaluated through factor loadings, with values above 0.7 considered acceptable. Internal consistency reliability was assessed using both Cronbach's alpha and composite reliability, with thresholds of 0.7 and 0.7

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respectively. Convergent validity was evaluated using average variance extracted (AVE), with values exceeding 0.5 indicating adequate convergent validity.

Discriminant validity was assessed using both the Fornell-Larcker criterion and the heterotrait-monotrait (HTMT) ratio of correlations. The Fornell-Larcker criterion requires that the square root of each construct's AVE exceeds its correlations with other constructs. The HTMT ratio provides a more stringent discriminant validity assessment, with values below 0.85 indicating adequate discriminant validity for constructs that are conceptually distinct.

The structural model assessment examined path coefficients, significance levels, effect sizes, and predictive relevance. Path coefficients were evaluated using bootstrapping procedures with 5,000 resamples to generate confidence intervals and p-values. Effect sizes (f^2) were calculated to assess the substantive significance of relationships, with values of 0.02, 0.15, and 0.35 representing small, medium, and large effects respectively. Predictive relevance (Q^2) was assessed using blindfolding procedures to evaluate the model's predictive capability.

Multigroup analysis (MGA) was conducted to examine potential differences across subgroups defined by firm size, export experience, and primary product category. The PLS-MGA approach was employed to test for significant differences in path coefficients across groups, with p-values below 0.05 indicating significant group differences.

Fuzzy-set qualitative comparative analysis (fsQCA) was employed as a complementary analytical approach to identify configurational pathways to superior competitive advantage. The fsQCA approach is particularly valuable for examining complex causation patterns where multiple conditions may combine in different ways to produce similar outcomes. This analysis employed fsQCA 3.0 software following Ragin's (2008) recommended procedures.

The fsQCA analysis required calibrating continuous variables into fuzzy-set membership scores ranging from 0 to 1. Calibration was based on substantive knowledge of the seafood export industry, with three qualitative anchors established for each variable: full membership (0.95), crossover point (0.5), and full non-membership (0.05). The calibration process was validated through sensitivity analysis using alternative anchor points.

Truth table analysis was conducted to identify sufficient and necessary conditions for high competitive advantage. The analysis employed consistency and coverage thresholds of 0.8 and 0.75 respectively, following Ragin's (2008) recommendations. The resulting solution terms were interpreted to identify distinct configurational pathways to superior performance outcomes.

4. RESEARCH FINDINGS

4.1. Measurement Model Assessment

The measurement model assessment demonstrates strong psychometric properties across all constructs employed in this research. Exploratory factor analysis (EFA) employing principal component analysis with varimax rotation confirmed the theoretical factor structure, with all constructs exhibiting clear factor separation and adequate explained variance. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy yielded a value of 0.923, indicating excellent suitability for factor analysis, whilst Bartlett's test of sphericity was significant ($\chi^2 = 12,847.3$, $p < 0.001$), confirming the appropriateness of the correlation matrix for factorisation.

Table 1: Reliability and Validity Assessment

Construct	Items	CA	CR	AVE	VAVE
Net Zero Commitments (NZC)	12	0.89	0.91	0.58	0.76
Operational Efficiency (OE)	8	0.87	0.90	0.61	0.78
Market Differentiation (MD)	6	0.85	0.89	0.64	0.80
Stakeholder Legitimacy (SL)	9	0.91	0.93	0.63	0.79
Competitive Advantage (CA)	10	0.88	0.91	0.59	0.77

Note: CA = Cronbach's Alpha; CR = Composite Reliability; AVE = Average Variance Extracted

Confirmatory factor analysis (CFA) validation using SmartPLS 4.0 provides robust evidence for the measurement model's adequacy. All factor loadings exceed the recommended threshold of 0.7, ranging from 0.734 to 0.896, demonstrating satisfactory indicator reliability. Internal consistency reliability assessment reveals Cronbach's alpha values ranging from 0.85 to 0.91, whilst composite reliability values range from 0.89 to 0.93, both exceeding the recommended threshold of 0.7.

Convergent validity is confirmed through average variance extracted (AVE) values, with all constructs exceeding the minimum threshold of 0.5. The AVE values range from 0.58 to 0.64, indicating that constructs explain more variance in their indicators than

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measurement error. The square root of AVE for each construct exceeds its correlations with other constructs, satisfying the Fornell-Larcker criterion for discriminant validity.

Table 2: Discriminant Validity Assessment (HTMT Criterion)

Construct	NZC	OE	MD	SL	CA
NZC	-				
OE	0.67	-			
MD	0.71	0.73	-		
SL	0.69	0.78	0.74	-	
CA	0.72	0.81	0.83	0.79	-

The heterotrait-monotrait (HTMT) ratio assessment provides additional discriminant validity evidence, with all HTMT values remaining below the conservative threshold of 0.85. The highest HTMT value of 0.83 occurs between market differentiation and competitive advantage, which is theoretically expected given their conceptual relatedness whilst remaining below the discriminant validity threshold.

4.2. Structural Model Assessment

The structural model assessment reveals significant positive relationships between net zero commitments and competitive advantage through the three proposed mediating pathways. The coefficient of determination (R^2) for competitive advantage is 0.694, indicating that the model explains 69.4% of the variance in competitive advantage, representing a substantial effect size according to Cohen's (1988) guidelines.

Table 3: Direct Effects Results

Hypothesis	Path	β	t-value	p-value	f^2	Decision
H1	NZC $\rightarrow$ OE	0.542	12.847	0.000***	0.417	Supported
H2	NZC $\rightarrow$ MD	0.498	10.326	0.000***	0.330	Supported
H3	NZC $\rightarrow$ SL	0.456	9.184	0.000***	0.263	Supported
H4	OE $\rightarrow$ CA	0.342	6.725	0.000***	0.156	Supported
H5	MD $\rightarrow$ CA	0.298	5.543	0.000**	0.124	Supported
H6	SL $\rightarrow$ CA	0.267	4.892	0.000**	0.098	Supported

*Note: *** $p < 0.001$; ** $p < 0.01$; $p < 0.05$

The direct effects analysis demonstrates that net zero commitments significantly influence all three mediating variables. The strongest relationship occurs between net zero commitments and operational efficiency ($\beta = 0.542$, $p < 0.001$), followed by market differentiation ($\beta = 0.498$, $p < 0.001$) and stakeholder legitimacy ($\beta = 0.456$, $p < 0.001$). These findings provide strong empirical support for the theoretical proposition that net zero commitments create value through multiple pathways.

Table 4: Predictive Relevance Assessment

Construct	SSO	SSE	Q^2
Operational Efficiency	2,296	1,562	0.319
Market Differentiation	1,722	1,223	0.290
Stakeholder Legitimacy	2,583	1,789	0.307
Competitive Advantage	2,870	1,845	0.357

The predictive relevance assessment using Stone-Geisser's Q^2 criterion demonstrates that the model possesses adequate predictive relevance for all endogenous constructs. Q^2 values range from 0.290 to 0.357, all substantially exceeding zero, indicating that the model can predict indicator values better than the base rate. The highest predictive relevance occurs for competitive advantage ($Q^2 = 0.357$), supporting the model's ability to predict the dependent variable effectively.

Table 5: Specific Indirect Effects

Mediating Path	β	t-value	p-value	95% CI
NZC $\rightarrow$ OE $\rightarrow$ CA	0.185	5.847	0.000***	[0.123, 0.251]
NZC $\rightarrow$ MD $\rightarrow$ CA	0.148	4.926	0.000***	[0.089, 0.212]

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NZC → SL → CA	0.122	4.187	0.000**	[0.064, 0.184]
Total Indirect Effect	0.455	9.327	0.000***	[0.359, 0.556]

The specific indirect effects analysis confirms the mediating role of operational efficiency, market differentiation, and stakeholder legitimacy in the relationship between net zero commitments and competitive advantage. All three indirect pathways demonstrate statistical significance, with operational efficiency providing the strongest mediating effect ($\beta = 0.185$, $p < 0.001$), followed by market differentiation ($\beta = 0.148$, $p < 0.001$) and stakeholder legitimacy ($\beta = 0.122$, $p < 0.01$).

4.3. Supplementary Analyses

Table 6: Multigroup Analysis Results

Path	Small Firms	Medium Firms	Large Firms	p-value (S-M)	p-value (M-L)	p-value (S-L)
NZC → OE	0.418	0.547	0.628	0.032*	0.187	0.008**
NZC → MD	0.389	0.512	0.567	0.045*	0.234	0.019*
NZC → SL	0.378	0.468	0.532	0.156	0.298	0.047*
OE → CA	0.395	0.342	0.298	0.312	0.428	0.187
MD → CA	0.287	0.298	0.312	0.743	0.652	0.567
SL → CA	0.234	0.267	0.298	0.489	0.523	0.298

*Note: S = Small firms; M = Medium firms; L = Large firms; * $p < 0.05$; ** $p < 0.01$

Multigroup analysis reveals significant differences in the relationship between net zero commitments and mediating variables across firm size categories. Large firms demonstrate stronger relationships between net zero commitments and all three mediating variables compared to small and medium firms. The differences are most pronounced between small and large firms, with statistically significant differences observed for all three relationships linking net zero commitments to mediating variables.

Table 7: fsQCA Configuration Analysis

Configuration	OE	MD	SL	Raw Coverage	Unique Coverage	Consistency
Config 1	●	●	●	0.234	0.087	0.856
Config 2	●	●	○	0.198	0.063	0.834
Config 3	●	○	●	0.187	0.059	0.823
Config 4	○	●	●	0.156	0.047	0.812

Note: ● = presence of condition; ○ = absence of condition; OE = Operational Efficiency; MD = Market Differentiation; SL = Stakeholder Legitimacy

Fuzzy-set qualitative comparative analysis identifies four distinct configurational pathways leading to superior competitive advantage. The analysis demonstrates solution coverage of 0.775 and solution consistency of 0.843, indicating that the identified configurations account for 77.5% of cases exhibiting high competitive advantage with 84.3% consistency.

Configuration 1, characterised by the presence of all three mediating conditions (operational efficiency, market differentiation, and stakeholder legitimacy), provides the highest raw coverage (0.234) and unique coverage (0.087), representing the most comprehensive pathway to competitive advantage. This configuration demonstrates high consistency (0.856), suggesting that firms simultaneously developing all three capabilities consistently achieve superior competitive advantage.

Configuration 2, involving operational efficiency and market differentiation without stakeholder legitimacy, represents the second most prevalent pathway. This configuration suggests that firms can achieve competitive advantage primarily through operational improvements and market positioning, even without extensive stakeholder relationship development. The consistency score of 0.834 indicates reliable performance outcomes for firms following this pathway.

Configuration 3 demonstrates that operational efficiency combined with stakeholder legitimacy, without strong market differentiation capabilities, can also lead to competitive advantage. This pathway may be particularly relevant for firms operating in commodity markets where differentiation opportunities are limited but stakeholder relationships remain critical for market access and regulatory support.

Configuration 4 reveals that market differentiation and stakeholder legitimacy can generate competitive advantage even without superior operational efficiency. This configuration may apply to firms operating in premium market segments where environmental positioning and stakeholder relationships create substantial value despite higher operational costs.

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The fsQCA results complement the SEM findings by revealing that whilst individual mediating variables contribute to competitive advantage, different combinations of these variables can achieve similar performance outcomes. This configurational perspective provides valuable insights for managers seeking to develop environmental strategies tailored to their firms' specific capabilities and market contexts.

5. DISCUSSION OF RESEARCH RESULTS AND CONCLUSIONS

The empirical findings of this study provide compelling evidence that net zero commitments serve as strategic assets rather than compliance costs for Vietnamese seafood exporters, fundamentally challenging the traditional view of environmental regulations as competitive burdens. The results demonstrate significant positive relationships between net zero commitments and competitive advantage through three distinct value creation pathways: operational efficiency enhancement, market differentiation achievement, and stakeholder legitimacy building.

The strong relationship between net zero commitments and operational efficiency ($\beta = 0.542$, $p < 0.001$) provides robust empirical support for Hart's (1995) natural resource-based view and the Porter Hypothesis (Porter & van der Linde, 1995). These findings align with King and Lenox's (2002) work demonstrating that environmental improvements can generate substantial cost savings through waste reduction, energy efficiency, and process optimisation. Within the Vietnamese seafood context, operational efficiency gains likely arise from improved aquaculture practices, optimised cold chain management, and enhanced processing techniques that simultaneously reduce environmental impact and operational costs.

The significant relationship between net zero commitments and market differentiation ($\beta = 0.498$, $p < 0.001$) supports Chen's (2008) findings regarding the market value of environmental attributes. This relationship proves particularly relevant for Vietnamese seafood exporters targeting developed markets where environmental consciousness among consumers and regulatory stringency create premium opportunities for sustainable products. The findings suggest that net zero commitments enable firms to access higher-value market segments and command price premiums that more than compensate for implementation costs.

The positive relationship between net zero commitments and stakeholder legitimacy ($\beta = 0.456$, $p < 0.001$) confirms stakeholder theory predictions regarding the relationship between environmental performance and stakeholder relationships. These findings align with Bansal and Clelland's (2004) work demonstrating that environmental performance enhances legitimacy with key stakeholders, reducing transaction costs and improving resource access. For Vietnamese seafood exporters, stakeholder legitimacy appears particularly valuable for maintaining relationships with international buyers, certification bodies, and regulatory agencies.

The mediating effects analysis reveals that all three pathways contribute significantly to competitive advantage, with operational efficiency providing the strongest indirect effect ($\beta = 0.185$), followed by market differentiation ($\beta = 0.148$) and stakeholder legitimacy ($\beta = 0.122$). The total indirect effect of 0.455 indicates that net zero commitments influence competitive advantage primarily through these mediating mechanisms rather than direct effects, supporting the theoretical framework's emphasis on intermediate value creation processes.

The multigroup analysis provides important insights into contingency factors affecting the effectiveness of net zero commitments. Large firms demonstrate significantly stronger relationships between net zero commitments and all three mediating variables compared to small and medium firms, suggesting that scale economies and resource availability influence the ability to capitalise on environmental investments. This finding aligns with Aragón-Correa et al.'s (2008) work demonstrating that firm size moderates environmental strategy effectiveness, with larger firms possessing superior capabilities to implement complex environmental initiatives.

The fuzzy-set qualitative comparative analysis reveals four distinct configurational pathways to competitive advantage, demonstrating that firms can achieve superior performance through different combinations of capabilities. This configurational perspective provides valuable insights beyond the linear relationships identified through SEM analysis, revealing equifinality in environmental strategy implementation. Configuration 1, involving all three mediating conditions, provides the highest coverage and consistency, suggesting that comprehensive environmental strategies yield the most reliable performance benefits.

These findings contribute to the sustainability-performance literature by providing empirical evidence that environmental commitments can create sustainable competitive advantages for emerging market exporters. The research addresses Ambec and Lanoie's (2008) call for context-specific studies examining the conditions under which environmental performance enhances business performance. Within the Vietnamese seafood context, the results suggest that net zero commitments create value through multiple pathways that collectively generate substantial competitive advantages.

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The theoretical contributions extend existing resource-based view and stakeholder theory applications by demonstrating how environmental capabilities can simultaneously satisfy multiple strategic objectives. The integration of these theoretical perspectives provides a more comprehensive understanding of environmental strategy value creation than either theory alone. The identification of three distinct mediating pathways advances theoretical understanding of the "black box" processes through which environmental performance influences business outcomes.

From a practical perspective, the findings provide evidence-based guidance for Vietnamese seafood exporters seeking to transform environmental compliance costs into competitive advantages. The results suggest that firms should adopt comprehensive environmental strategies that simultaneously target operational efficiency, market differentiation, and stakeholder legitimacy rather than focusing on individual initiatives. The configurational analysis reveals that different pathways can achieve similar outcomes, enabling firms to tailor environmental strategies to their specific capabilities and market contexts. The multigroup analysis findings have important implications for policy design and industry development. The stronger relationships observed for larger firms suggest that small and medium enterprises may require additional support to capitalise on environmental investment opportunities. Government policies and industry associations could play valuable roles in providing technical assistance, financial support, and market access facilitation to enable smaller firms to benefit from environmental initiatives.

The research also provides insights relevant to international buyers and certification bodies seeking to support sustainable seafood supply chains. The findings demonstrate that environmental requirements can enhance rather than undermine supplier competitiveness when properly designed and implemented. This suggests that buyers adopting sustainability requirements should provide technical and financial support to enable suppliers to develop necessary capabilities whilst benefiting from enhanced competitiveness.

Several limitations constrain the generalisability of these findings. The cross-sectional design precludes causal inference, though the theoretical foundations and mediating effects analysis provide support for the proposed causal relationships. The focus on Vietnamese seafood exporters limits generalisability to other industries and geographic contexts, though the theoretical framework may apply to similar export-oriented sectors in developing economies.

Future research directions emerge from these findings. Longitudinal studies could examine the temporal dynamics of environmental strategy implementation and performance effects, providing insights into the time horizons required for environmental investments to generate returns. Comparative studies across different industries and countries could examine the boundary conditions of environmental strategy effectiveness, identifying contextual factors that strengthen or weaken the observed relationships.

The emerging focus on net zero commitments as corporate strategy creates opportunities for research examining the evolution from traditional environmental management to comprehensive sustainability strategies. Future research could examine how firms develop dynamic capabilities to adapt environmental strategies to changing stakeholder expectations and regulatory requirements whilst maintaining competitive advantage.

This study concludes that net zero commitments represent strategic opportunities rather than compliance burdens for Vietnamese seafood exporters, providing empirical evidence that environmental performance can enhance competitive advantage through operational efficiency, market differentiation, and stakeholder legitimacy pathways. The findings support the development of comprehensive environmental strategies that simultaneously target multiple value creation mechanisms whilst acknowledging that different configurational approaches can achieve similar performance outcomes. These insights contribute to both theoretical understanding of the sustainability-competitiveness nexus and practical guidance for managers seeking to transform environmental challenges into competitive advantages.

ACKNOWLEDGMENTS

I would like to express my sincere gratitude to Dr. Hoang Vu Hiep for his invaluable guidance and inspiration throughout this research. His expertise, insights, and unwavering support have been instrumental in shaping the direction and quality of this study. I am deeply appreciative of his generosity in sharing his time, knowledge, and network, which have greatly contributed to the success of this research. His mentorship and commitment to academic excellence have not only enriched the quality of this work but have also had a profound impact on my personal and professional growth.

REFERENCES

- 1) Ambec, S., & Lanoie, P. (2008). Does it pay to be green? A systematic overview. *Academy of Management Perspectives*, 22(4), 45-62. <https://doi.org/10.5465/amp.2008.35590353>

From Environmental Burden to Export Advantage: Net Zero Commitments and Competitive Transformation in Vietnam's Seafood Sector

- 2) Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411-423. <https://doi.org/10.1037/0033-2909.103.3.411>
- 3) Aragón-Correa, J. A., & Sharma, S. (2003). A contingent resource-based view of proactive corporate environmental strategy. *Academy of Management Review*, 28(1), 71-88. <https://doi.org/10.5465/amr.2003.8925233>
- 4) Aragón-Correa, J. A., Hurtado-Torres, N., Sharma, S., & García-Morales, V. J. (2008). Environmental strategy and performance in small firms: A resource-based perspective. *Journal of Environmental Management*, 86(1), 88-103. <https://doi.org/10.1016/j.jenvman.2006.11.022>
- 5) Bansal, P., & Clelland, I. (2004). Talking trash: Legitimacy, impression management, and unsystematic risk in the context of the natural environment. *Academy of Management Journal*, 47(1), 93-103. <https://doi.org/10.2307/20159562>
- 6) Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120. <https://doi.org/10.1177/014920639101700108>
- 7) Busch, T., & Hoffmann, V. H. (2011). How hot is your bottom line? Linking carbon and financial performance. *Business & Society*, 50(2), 233-265. <https://doi.org/10.1177/0007650311398780>
- 8) Cavusgil, S. T., & Zou, S. (1994). Marketing strategy-performance relationship: An investigation of the empirical link in export market ventures. *Journal of Marketing*, 58(1), 1-21. <https://doi.org/10.2307/1252247>
- 9) Chen, Y. S. (2008). The driver of green innovation and green image—green core competence. *Journal of Business Ethics*, 81(3), 531-543. <https://doi.org/10.1007/s10551-007-9522-1>
- 10) Chin, W. W. (1998). The partial least squares approach to structural equation modeling. *Modern Methods for Business Research*, 295(2), 295-336.
- 11) Christmann, P. (2000). Effects of "best practices" of environmental management on cost advantage: The role of complementary assets. *Academy of Management Journal*, 43(4), 663-680. <https://doi.org/10.2307/1556360>
- 12) Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd ed.). Lawrence Erlbaum Associates.
- 13) Dasgupta, S., Hettige, H., & Wheeler, D. (2000). What improves environmental compliance? Evidence from Mexican industry. *Journal of Environmental Economics and Management*, 39(1), 39-66. <https://doi.org/10.1006/jeem.1999.1090>
- 14) Delmas, M. A., & Blass, V. D. (2010). Measuring corporate environmental performance: The trade-offs of sustainability ratings. *Business Strategy and the Environment*, 19(4), 245-260. <https://doi.org/10.1002/bse.676>
- 15) Doh, J. P., & Guay, T. R. (2006). Corporate social responsibility, public policy, and NGO activism in Europe and the United States: An institutional-stakeholder perspective. *Journal of Management Studies*, 43(1), 47-73. <https://doi.org/10.1111/j.1467-6486.2006.00582.x>
- 16) Freeman, R. E. (1984). *Strategic Management: A Stakeholder Approach*. Pitman.
- 17) Grieg-Gran, M. (2002). *Financial Incentives for Improved Sustainability Performance: The Business Case and the Sustainability Dividend*. International Institute for Environment and Development.
- 18) Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (2nd ed.). Sage Publications.
- 19) Hart, S. L. (1995). A natural-resource-based view of the firm. *Academy of Management Review*, 20(4), 986-1014. <https://doi.org/10.5465/amr.1995.9512280033>
- 20) Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115-135. <https://doi.org/10.1007/s11747-014-0403-8>
- 21) Hoffman, A. J. (2000). *Competitive Environmental Strategy: A Guide to the Changing Business Landscape*. Island Press.
- 22) Husted, B. W., & Allen, D. B. (2007). Strategic corporate social responsibility and value creation among large firms: Lessons from the Spanish experience. *Long Range Planning*, 40(6), 594-610. <https://doi.org/10.1016/j.lrp.2007.07.001>
- 23) Judge, W. Q., & Douglas, T. J. (1998). Performance implications of incorporating natural environmental issues into the strategic planning process: An empirical assessment. *Journal of Management Studies*, 35(2), 241-262. <https://doi.org/10.1111/1467-6486.00092>
- 24) King, A., & Lenox, M. (2001). Does it really pay to be green? An empirical study of firm environmental and financial performance. *Journal of Industrial Ecology*, 5(1), 105-116. <https://doi.org/10.1162/108819801753358526>
- 25) King, A., & Lenox, M. (2002). Exploring the locus of profitable pollution reduction. *Management Science*, 48(2), 289-299. <https://doi.org/10.1287/mnsc.48.2.289.258>
- 26) Le, T. H., Nguyen, C. P., & Park, D. (2016). Financing renewable energy development: Insights from 55 countries. *Energy Research & Social Science*, 25, 99-108. <https://doi.org/10.1016/j.erss.2016.12.018>

From Environmental Burden to Export Advantage: Net Zero Commitments and Competitive Transformation in Vietnam's Seafood Sector

- 27) Lyon, T. P., & Maxwell, J. W. (2011). Greenwash: Corporate environmental disclosure under threat of audit. *Journal of Economics & Management Strategy*, 20(1), 3-41. <https://doi.org/10.1111/j.1530-9134.2010.00282.x>
- 28) Mitchell, R. K., Agle, B. R., & Wood, D. J. (1997). Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *Academy of Management Review*, 22(4), 853-886. <https://doi.org/10.5465/amr.1997.9711022105>
- 29) Nguyen, T. T., & Vo, T. T. (2015). The determinants of household adoption of improved fish varieties: A study of pangasius catfish in Can Tho, Vietnam. *Aquaculture*, 435, 414-420. <https://doi.org/10.1016/j.aquaculture.2014.10.019>
- 30) Olson, J., Clay, P. M., & Pinto da Silva, P. (2014). Putting the seafood in sustainable food systems. *Marine Policy*, 43, 104-111. <https://doi.org/10.1016/j.marpol.2013.05.001>
- 31) Palmer, K., Oates, W. E., & Portney, P. R. (1995). Tightening environmental standards: The benefit-cost or the no-cost paradigm? *Journal of Economic Perspectives*, 9(4), 119-132. <https://doi.org/10.1257/jep.9.4.119>
- 32) Porter, M. E. (1985). *Competitive Advantage: Creating and Sustaining Superior Performance*. Free Press.
- 33) Porter, M. E., & van der Linde, C. (1995). Toward a new conception of the environment-competitiveness relationship. *Journal of Economic Perspectives*, 9(4), 97-118. <https://doi.org/10.1257/jep.9.4.97>
- 34) Ragin, C. C. (2008). *Redesigning Social Inquiry: Fuzzy Sets and Beyond*. University of Chicago Press.
- 35) Roheim, C. A. (2009). An evaluation of sustainable seafood guides: Implications for environmental groups and the seafood industry. *Marine Resource Economics*, 24(3), 301-310. <https://doi.org/10.1086/mre.24.3.42629655>
- 36) Russo, M. V., & Fouts, P. A. (1997). A resource-based perspective on corporate environmental performance and profitability. *Academy of Management Journal*, 40(3), 534-559. <https://doi.org/10.2307/257052>
- 37) Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review*, 20(3), 571-610. <https://doi.org/10.5465/amr.1995.9508080331>
- 38) Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509-533. [https://doi.org/10.1002/\(SICI\)1097-0266\(199708\)18:7<509::AID-SMJ882>3.0.CO;2-Z](https://doi.org/10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z)
- 39) Tran, N., Rodriguez, U. P., Chan, C. Y., Phillips, M. J., Mohan, C. V., Henriksson, P. J., ... & Hall, S. (2017). Indonesian aquaculture futures: An analysis of fish supply and demand in Indonesia to 2030 and role of aquaculture using the AsiaFish model. *Marine Policy*, 79, 25-32. <https://doi.org/10.1016/j.marpol.2017.02.002>
- 40) Waddock, S. A., & Graves, S. B. (1997). The corporate social performance–financial performance link. *Strategic Management Journal*, 18(4), 303-319. [https://doi.org/10.1002/\(SICI\)1097-0266\(199704\)18:4<303::AID-SMJ869>3.0.CO;2-G](https://doi.org/10.1002/(SICI)1097-0266(199704)18:4<303::AID-SMJ869>3.0.CO;2-G)
- 41) Wagner, M. (2003). The porter hypothesis revisited: A literature review of theoretical models and empirical tests. *Centre for Sustainability Management*, 1-40.
- 42) Washington, S., & Ababouch, L. (2011). *Private Standards and Certification in Fisheries and Aquaculture*. FAO Fisheries and Aquaculture Technical Paper No. 553.



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