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SME Strategic Leadership and Grouping as Core Levers for Sustainable Transition—New Wine Typology

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Abstract

Consumer choices are largely influenced by sustainability, necessitating SMEs from the agri-food sector to strategically address sustainability and innovate their business models. Nonetheless, the challenge for such sustainable leadership lies in maintaining an equilibrium between innovation, sustainability, and financial performance. This study examined how strategic leadership fosters sustainability-oriented innovation within SMEs exemplified by the wine industry. A survey involving 354 German wineries served to analyze a multi-dimensional concept of innovation clusters (early adopters, pragmatists, pioneers, skeptics, conservatives), type of innovation, sustainability orientation, strategic ambitions, and business performance. Exploring the adoption of fungus-resistant grape varieties (FRV) allowed investigating how sustainability transitions to meet EU Green Deal targets are shaped by strategic groups involving strategic positioning and innovation clusters. There was a correlation between stronger sustainability orientation with greater innovation (Means up to 4.39). As per the findings, it was observed that high scores ($p < 0.001$, $\eta^2 = 0.144$–0.160) in market and process innovation were obtained by early adopters and pioneers. These innovation champions excel in economic and social sustainability ($p < 0.001$) but nonetheless were found to be financially underperforming (Means 1.97–2.18). Innovations that were applied enhanced innovation scores ($\eta^2 = 0.128$) but did not improve immediate performance. The strongest performance (Mean 2.60) was reported by skeptics though they fared poor in terms of sustainability and innovation. It was also noted that early adopters and pioneers (44–45%) were leading in FRV adoption, while a lag was observed within premium-oriented organizations. These insights may motivate SMEs in their quest for strategic sustainability and allow fine-tuning political and societal measures to achieve a sustainable transition and quantified Green Deal ambitions. It was concluded that long-term positioning was improved by sustainability-driven innovation, however, it would involve short-term performance trade-offs for SMEs. Political support should motivate the sustainable leadership champions to also safeguard profitability.

Keywords: sustainability leadership; SMEs; innovation clusters; business performance; sustainability orientation; fungus-resistant grape varieties; Green Deal; German wineries; agri-food sector; Resource Dependency Theory; effectuation

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1. Introduction

The current global environment is undergoing a dynamic evolution, underscored by climate change, resource depletion, rapidly increasing social inequalities, and the pace at which business is being carried out. Such a scenario warrants the need for business practices that are sustainable and leadership instrumental in tackling such multifaceted

challenges [1–5]. Irrespective of the industry sector or size of companies, sustainability is not just an option but a key managerial necessity. This is particularly critical for small and medium-sized enterprises (SMEs). For them, adopting and executing sustainable leadership continues to be specifically challenging owing to resource restrictions, limited managerial capacity, underdeveloped strategic focus, predominance of effectuation-based decision-making, and time constraints. These challenges are compounded by a fragmented academic landscape, where entrepreneurship, market orientation, innovation, and sustainability are often treated as separate research streams [6,7]. Such disciplinary silos are problematic, especially for SMEs, which operate in highly integrated, resource-sensitive environments that require cohesive strategic approaches [8]. Furthermore, though the discourse involving SME sustainability tends to be largely aspirational with high emphasis on what can be done by SMEs, it is usually devoid of actionable models that consider the realities of SMEs [9,10].

The European Union's Green Deal presents a comprehensive sustainability policy agenda aimed at driving industries, especially resource-intensive sectors such as agriculture and viticulture toward a low-carbon and circular economy [11]. Among its targets, a 50% reduction in pesticide use puts a burden on viticulture, a sector highly dependent on climatic stability and ecological integrity [12]. This study acknowledges that several SMEs pursue sustainability based on internal values, operational drivers like health, cost reduction, product differentiation, and consideration for local ecosystems. For SMEs in the wine industry, this creates both compliance pressure and an opportunity to innovate and reposition themselves strategically [13]. The Green Deal thus offers an external validation for emergent practices in leadership while also acting as a regulatory motivator. Given these policy shifts, a better understanding of how SMEs operationalize sustainability is essential. Although literature on sustainability in SMEs is increasing [14,15], yet, it remains limited and fragmented across domains such as entrepreneurship, market orientation, innovation, and leadership [16], and often generic [17]. Few studies [18,19] have holistically integrated strategic leadership, innovation, and collaborative practices in sector-specific contexts like viticulture. Furthermore, much of the discourse around SME sustainability remains normative, often stating that SMEs "should" engage without offering concrete strategic or operational models tailored to their constraints [9], neglecting needed situational differentiation and foremost profitability impact.

The wine sector, particularly in Germany, exemplifies these tensions. The sector is dominated by family-owned SMEs with fewer than 10 full-time employees and annual revenues below one million euros [20]. These firms face fierce competition, low profitability, and growing vulnerability to environmental changes [21]. However, their close ties to local ecosystems and communities also position them as potential frontrunners in sustainability transitions [22]. A prime example is the emergence of fungus-resistant varietals (FRVs), which offer an innovative means to reduce pesticide use while maintaining product quality, thus aligning with both environmental goals and shifting consumer expectations [23]. The development of FRVs occurs when conventional grape varietals are cross-bred with species that are more resistant to diseases [24]. Thus, FRVs present a hopeful path for lowering the application of chemicals within viticulture [25]. Irrespective of its promising scope, adoption of FRVs is limited. In part, owing to concerns over its acceptance within the market, perceived quality, and probable disruptions to narratives around branding within premium segments for wines—typical symptoms of innovation management [26].

This study addresses these gaps by investigating how strategic leadership, entrepreneurial behavior, and collaborative grouping mechanisms interact to enable sustainable transitions among SME wine producers with FRV planting as one proxy for sustainability and innovation [27–29]. It draws on Resource Dependence Theory (RDT) [30] and Effectuation Theory (ET) [31] to frame the dual importance of external resource coordi-

nation and internal adaptability under conditions of uncertainty. RDT [30] explains how SMEs access critical resources and reduce environmental vulnerability through alliances and networks. Simultaneously, ET [31] allows us to examine how leaders navigate uncertainty by leveraging available means, learning through experimentation, and adapting strategies dynamically. These theoretical lenses served to explore how SME actors navigate both structural constraints and emergent opportunities.

To structure this investigation and contextualize findings, the study introduces the concept of a New Wine Typology—a strategic classification model that identifies how SME wineries combine leadership, innovation, and collective action to respond to the EU Green Deal. Prevalent literature considers sustainable leadership, entrepreneurial leadership, and innovation leadership in silos, which leads to an understanding that is fragmented. This gap is addressed in this research by offering clear definitions of the constructs and incorporating them into a multi-level framework to elucidate SME transitions under the pressure of sustainability. The typology reveals a range of strategic postures, from reactive compliance to proactive innovation leadership, and serves as both a diagnostic lens for understanding firm behavior and a prescriptive tool for policy alignment and competitive positioning. In doing so, the study contributes to the literature by illustrating how the strategic coordination of sustainability efforts fosters a sustainable leadership culture within SMEs [32]. Against this background, the study is guided by the following research question:

Research Question: *How do SMEs in the wine sector incorporate entrepreneurship, leadership, sustainability, and innovation for strategically positioning themselves in line with the EU Green Deal and broader sustainability transitions?*

2. Key Constructs and Conceptual Definitions

2.1. Sustainable Leadership

Sustainable leadership can be referred to as a leadership orientation at the meta-level that maintains equilibrium between long-term social, ecological, and economic outcomes. It draws attention to stakeholder inclusion, stewardship, and ethical decision-making to ensure organizational resilience across generations. As opposed to innovation or entrepreneurial leadership that concentrates on change implementation and opportunity creation, sustainable leadership presents a normative values framework that guides both. Sustainable leadership involves living and leading in a way that is mindful of one's footprint on the planet, society, and the broader global economy [33]. Building thereon, sustainable leadership is the simultaneous pursuit of profit and stakeholder well-being through responsible, forward-looking decision-making [8].

While the core principles of sustainable leadership apply across sectors, their interpretation and implementation vary significantly in the context of SMEs. Unlike large firms that often operate under strong regulatory oversight and shareholder pressure, SMEs typically have more informal structures and are accountable to a more diverse set of local stakeholders [13]. This gives rise to both opportunity and risk: SMEs may be more flexible and responsive to sustainability challenges, but they may also lack the formal mechanisms, resources, and guidance needed to integrate sustainability into core leadership practices.

Importantly, SMEs often operate within local clusters or regional networks where stakeholder expectations, environmental concerns, and community values exert a strong influence on business behavior [34]. Such localized and relational dynamics tend to nurture intrinsic motivations for sustainable leadership, especially among owner-managers who are known to maintain a balance between sustainability and personal values, legacy, and long-term commitment towards their land and community.

2.2. Entrepreneurial Strategic Leadership

Entrepreneurial strategic leadership refers to a hybrid leadership approach that merges entrepreneurial opportunity-seeking behavior with long-term strategic vision and resilience. Scholars have increasingly framed entrepreneurial leadership as a dynamic capability that enables organizations—especially SMEs—to navigate uncertainty, identify emerging opportunities, and generate innovation [17–19]. Strategic leadership combines creativity, risk-taking, and opportunity recognition with the strategic foresight required to build and sustain competitive advantage in volatile environments [20,21].

Strategic leadership, at its core, entails the capacity to envision future possibilities, interpret complex and ambiguous environments, and align organizational resources accordingly [22]. In entrepreneurial contexts, this role is often fulfilled not by structured planning departments, but by founders, owner-managers, or small leadership teams who drive both strategic and operational agendas [35–37]. As such, entrepreneurial strategic leadership blends individual agency with organizational direction-setting, making it particularly relevant in resource-constrained SME settings.

SMEs are central to economic vitality, frequently rooted in family ownership, and characterized by agile, proactive leadership styles [24,27–29]. These firms often lack formal strategic planning capabilities, but instead engage in more flexible, intuitive approaches to strategy based on real-time environmental sensing and rapid decision-making [33,38–42]. The concept of effectuation is especially relevant here, highlighting how entrepreneurial leaders leverage existing means and partnerships to shape future outcomes without relying on prediction [43–48].

Strategic behavior among SMEs often involves long-term ambition and adaptability rather than structured processes. Unlike large firms, where formal tools and predictive analytics guide planning, entrepreneurial leaders in SMEs frequently make decisions based on evolving stakeholder needs, market signals, and emergent opportunities [33,49–52]. Strategic leadership in such contexts is shaped by complexity, ambiguity, and information overload, often requiring multitasking and heavy reliance on informal networks or mediators for implementation [35–37]. In new or emergent ventures, this role may be concentrated in a single founder, investor, or core team, and leadership configuration varies widely depending on the entrepreneurial context [36,37].

Despite their adaptability, SMEs face significant barriers to executing strategic intent. Studies estimate that up to 90% of SMEs struggle with strategy execution, not due to poor strategic thinking, but due to leadership weaknesses in follow-through and change implementation [49,50]. Often, SME leaders underestimate the complexity of translating strategy into action, delegating execution too loosely or failing to engage the wider organization.

Therefore, entrepreneurial strategic leadership should not be evaluated solely on formal strategic planning capacity, but on the ability to sustain long-term ambition, identify and act on opportunities, and guide innovation under uncertainty. In the context of sustainability transitions, such as those prompted by the EU Green Deal, these leadership traits are crucial for navigating ecological constraints, evolving regulations, and shifting consumer expectations.

2.3. Innovation Leadership

Innovation is widely regarded as a critical driver of socioeconomic progress, enabling businesses to create novel solutions, adapt to shifting market dynamics, and sustain competitive advantage [53–55]. As economies evolve from factor-driven to innovation-driven stages of development, firms must adopt increasingly strategic approaches ranging from incremental improvements to radical breakthroughs to remain viable [56–58]. This is particularly true in dynamic industries with strong environmental exposure, such as agriculture and viticulture, where innovation supports both operational continuity and competitive positioning [59,60].

Innovation leadership refers to a leadership style and strategic mindset that facilitates and encourages the generation, development, and implementation of new ideas, business models, processes, or products [61,62]. It blends creative, adaptive, and collaborative leadership methods to motivate teams and guide organizations through change. Effective innovation leadership not only drives internal transformation but also allows firms to engage with external challenges, such as climate adaptation, resource efficiency, and shifting consumer preferences.

Increasingly, innovation and sustainability are interlinked, with each reinforcing the other. Sustainability can serve as both a catalyst for innovation, prompting the redesign of products, processes, and models, and a desired outcome, shaping innovation toward ecological and social goals [3,35,36]. However, integrating sustainability into innovation is inherently complex. It requires systemic changes across strategy, operations, organizational learning, and external relationships [37]. Large firms often have the resources and institutional frameworks to manage this complexity, but SMEs, particularly in traditional sectors, frequently lack both awareness and capacity.

In the wine industry, innovation occurs across the value chain, from viticulture and production (upstream) to branding, distribution, and consumer engagement (downstream) [49–52]. Yet, due to their small size and limited capital, wineries often face a structural disadvantage in adopting innovations compared to larger firms [38–42]. Despite these constraints, some wineries act as innovation "pace-setters," leveraging entrepreneurship, agility, and sustainability orientation to outpace traditionalists in profitability and growth [63–65]. These strategic postures are not uniform: innovation readiness often depends on the firm's perception of internal capabilities and external pressures [43,66]. Within this sector, innovation is not only a response to changing consumer tastes or international competition, but also a way to adapt to pressing environmental challenges. Wine producers increasingly explore sustainability-driven innovations, such as the adoption of (FRVs), circular packaging models, and digital market channels [44–46]. These innovations are both market-responsive and environmentally adaptive, allowing firms to differentiate themselves while aligning with EU policy objectives like the Green Deal.

In sum, innovation leadership in the wine industry and among SMEs more broadly is a multidimensional capability. It demands strategic vision, stakeholder alignment, and the capacity to drive change under resource constraints. As sustainability becomes a market and policy imperative, innovation leadership serves as a bridge between entrepreneurial action and long-term ecological and business viability.

Table 1 presents a summary of how the three key constructs of leadership vary but nonetheless complement each other. Sustainable leadership presents a normative foundation, while entrepreneurial strategic leadership offers a strategic direction, and sustainability is operationalized with innovation leadership, through tangible innovations and actions.

Table 1. Comparative Overview of Leadership Constructs in Sustainability Transitions.

Leadership Type	Core Definition	Primary Focus	Key Characteristics	Role in Sustainability Transitions
Sustainable Leadership	Oriented at a meta-level, with emphasis on social, ecological, and economic resilience in the long-term.	Presents a normative vision and direction for sustainability.	Ethical stewardship, values-driven, long-term perspective, stakeholder inclusivity.	Functions as a guiding framework, establishing sustainability goals, while ensuring alignment with environmental and societal requirements
Entrepreneurial Strategic Leadership	Capable of identifying opportunities and strategically positioning an organization during change and uncertainty.	Aligns sustainability with competitive advantage and market positioning.	Risk-taking, opportunity identification, adaptability, strategic foresight.	Converts sustainability values into strategic pathways and places SMEs competitively within sustainability transitions.
Innovation Leadership	Drives creation, implementation, and scales new ideas.	Focus on operationalization of newness and innovation; sustainability can profit therefrom.	Collaboration, creativity, and experimentation	Transforms visions and strategies of sustainability into practical innovation.

2.4. Strategic Grouping

Strategic positioning takes under its ambit how individual organizations profiled themselves within the market (such as niche innovators, premium producers, or cost leaders) and the way in which they aligned with or became a part of wider strategic groupings. Strategic grouping refers to the purposeful formation of collectives such as alliances, clusters, networks, or consortia in which organizations coordinate resources and align strategies to address shared challenges, including sustainability transitions [47]. These collectives are often designed to enhance mutual learning, resilience, innovation capacity, and adaptive influence during periods of systemic or regulatory change [48]. For SMEs, strategic grouping offers a mechanism to overcome resource limitations, access knowledge, and build legitimacy in volatile environments.

Within strategic management literature, grouping has been studied through the lens of generic strategy typologies, most notably Porter's model of cost leadership, differentiation, and niche focus [67]. These typologies have been widely used in empirical research to identify how firms align around common strategic priorities [68–70]. Strategic groupings emerge as firms coalesce around similar strategic configurations, forming identifiable clusters with shared approaches to market competition and innovation [71–74]. Similarly, the configurational typology of Miles and Snow [75–77] classifying firms as prospectors, defenders, analyzers, or reactors provides a valuable framework for understanding group-based differences in innovation behavior. This framework has been instrumental in analyzing how strategic posture relates to innovation outcomes in various industries [71–73]. In the context of sustainability, strategic grouping can reflect varying degrees of entrepreneurial environmentalism, where innovative efforts such as the adoption of fungus-resistant varietals (FRVs) serve as distinguishing features of proactive or reactive strategies [78]. Generic strategies help firms narrow strategic choices, promoting strategic clarity and commitment to key actions [79,80]. For example, cost leaders seek to increase efficiency through scale, differentiators emphasize uniqueness to gain competitive edge, and niche strategists cater to specific customer segments [81–83]. When applied to sustainability transitions, these strategies manifest through different grouping logics; for instance, clusters of eco-innovators may emerge around FRV adoption, while conservative producers may coalesce around cost-preserving practices.

Thus, strategic grouping provides both a descriptive and diagnostic lens for examining how SMEs in the wine sector organize and adapt in response to sustainability pressures. It helps explain the heterogeneity of sustainability strategies across firms and enables identification of patterns in leadership behavior, innovation orientation, and collaborative action.

2.5. Sustainable Transition

Sustainable transitions refer to intentional, value-driven transformations of systems, organizations, or leadership structures to ensure long-term ecological, social, and economic sustainability. Such transitions involve the deliberate evolution of leadership practices and organizational arrangements to guarantee continuity and sustainability [84]. These transitions are often underpinned by the principles of sustainable leadership [85], which emphasize ethics, long-termism, and collective well-being.

Within academic discourse, sustainability transitions are increasingly framed as complex, multi-actor processes aimed at addressing large-scale societal and environmental challenges, including climate change, biodiversity loss, and resource depletion [86]. These transitions involve both public and private stakeholders and require coordination across different sectors, levels of governance, and cultural contexts. Researchers have examined various dimensions of these processes, such as actor roles [87], participation dynamics [88], stakeholder relationships [89], typologies of transition paths [90], and power asymmetries [91].

Despite the breadth of this scholarship, much of the focus has been placed on large-scale actors (government bodies, multinational corporations, and institutional intermediaries) while overlooking the role of small and medium-sized enterprises (SMEs). Yet SMEs are critical players in most economies: they are locally embedded, often more agile than larger firms, and capable of bottom-up innovation [31]. However, their involvement in sustainability transitions is constrained by limited financial resources, infrastructure, and leadership capacity [92]. Additionally, SME managers may lack awareness, motivation, or clarity on how to operationalize sustainability.

Given their structural characteristics, SMEs require tailored transition strategies that balance local responsiveness with long-term sustainability imperatives. This is especially relevant in resource-intensive sectors like agriculture and viticulture, where ecological vulnerability and regulatory pressures intersect. As this study argues, enabling sustainability transitions in such sectors requires a better understanding of how entrepreneurial leadership, innovation, and strategic collaboration can overcome SME-specific constraints.

2.6. Resource Dependence Theory

Resource Dependency Theory, introduced by Pfeffer and Salancik [30], offers a foundational lens for understanding how organizations manage interdependencies with their external environments. The central premise of RDT is that organizations are rarely self-sufficient; they rely on external stakeholders—such as suppliers, regulators, customers, and partners—for access to critical resources. These dependencies shape strategic choices, organizational structures, and leadership behaviour [93,94]. RDT frames organizational behavior broadly, encompassing not only formal decisions and actions but also inactions and structural adaptations made in response to environmental constraints. Resource scarcity, market instability, and regulatory changes all influence managerial decisions, particularly when access to vital resources such as financial capital, knowledge, legitimacy, or raw materials is limited or controlled externally [93]. In such cases, organizations must develop strategies to reduce dependency, manage uncertainty, or gain power through collaboration or diversification.

The theory also introduces the concept of vitality—the capacity of an organization to survive and operate effectively even when certain critical resources are restricted or unavailable [30]. Importantly, the dependency on a given resource is not based solely on its cost or volume, but on its strategic importance to ongoing operations. A resource may be marginal in scale yet vital to the firm's functioning if its absence threatens continuity. RDT assumes that decision-makers are subject to bounded rationality, which means their strategic responses to resource dependencies are shaped by limited information, cognitive capacity, and the complexity of their environment [95]. Therefore, organizational responses to external pressure are not always optimal, but rather adaptive within situational constraints. These adaptations can include forming strategic alliances, entering networks, or adjusting internal structures to cope with environmental volatility [96].

In the context of sustainability transitions, particularly those aligned with EU Green Deal goals, RDT provides a valuable explanation for why SMEs may pursue strategic grouping, collective innovation, or network participation to mitigate their resource vulnerabilities. SMEs in the wine industry, for example, may collaborate to gain access to sustainable technologies (e.g., fungus-resistant varietals), expertise, or regulatory incentives that would be otherwise unattainable individually. Thus, RDT helps illuminate how external dependencies and internal adaptive behaviors shape the pathways that SMEs take toward sustainable transformation.

2.7. Effectuation Theory

Effectuation Theory, originally developed by Sarasvathy [31], provides a framework for understanding entrepreneurial decision-making under conditions of uncertainty. Unlike predictive logic, where goals are set and means are acquired to achieve them, effectuation starts with available means (who I am, what I know, and whom I know) and allows goals to emerge contingently over time. This logic is particularly relevant in contexts where markets are undefined, the future is unpredictable, and flexibility is essential. At the core of effectuation are five principles: (1) Bird-in-hand (start with existing means), (2) Affordable loss (limit risk to what one can bear), (3) Crazy quilt (form partnerships with self-selected stakeholders), (4) Lemonade (leverage surprises), and (5) Pilot-in-the-plane (emphasize control over prediction). These principles encourage entrepreneurs to experiment, adapt, and co-create opportunities rather than pursue fixed plans [97,98]. Effectuation is particularly suited for environments marked by rapid change or systemic transition. In such settings, entrepreneurs cannot rely on historical data or stable trends; instead, they must act and learn iteratively [31,98]. Research shows that experienced entrepreneurs are more likely to adopt effectual strategies, as they are more comfortable navigating ambiguity and reconfiguring resources dynamically [99,100].

Several scholars have validated effectuation as a robust concept to explain entrepreneurial action in volatile sectors [101,102], including innovation contexts where the end-user, product, or market is not yet defined. While critics argue that expertise is the main predictor of effectual logic use [103], there is growing consensus that effectuation is especially valuable in resource-constrained or emergent sectors. In the context of this study, effectuation provides a behavioral and cognitive complement to Resource Dependence Theory. While RDT explains how SMEs form networks and strategic groupings to access resources, effectuation clarifies how entrepreneurial leaders act within uncertainty to recombine those resources creatively. For SME wineries facing regulatory pressure under the EU Green Deal, effectual logic can explain how sustainability innovations such as adopting fungus-resistant varietals (FRVs) emerge not from formal strategy, but from iterative learning, local partnerships, and adaptive leadership. Thus, effectuation helps illuminate the micro-level entrepreneurial processes that enable SMEs to navigate sustainability transitions.

2.8. Integrated Theoretical Perspective

This study adopts an integrated theoretical approach, combining Resource Dependence Theory (RDT) and Effectuation Theory to analyze how SME wineries strategically navigate sustainability transitions. This dual perspective offers a multi-level explanation of organizational behavior under resource constraints and environmental uncertainty—two defining features of the contemporary wine industry context.

RDT provides a structural view of how organizations respond to external dependencies. In resource-constrained environments, particularly under the regulatory and ecological pressures introduced by the EU Green Deal, SMEs often form strategic groupings such as clusters, alliances, and consortia. These collective mechanisms allow firms to gain access to critical resources, enhance legitimacy, and mitigate dependency on external actors [104,105]. Grouping, therefore, is not merely a strategic choice but a survival mechanism, especially for SMEs in agriculture-based sectors where sustainability compliance demands resource-intensive transformation.

Effectuation Theory complements this view by offering a behavioral perspective on entrepreneurial leadership under uncertainty. Unlike predictive planning, effectuation emphasizes acting with available means, engaging stakeholders early, and leveraging unexpected outcomes to co-create value [106,107]. In the face of systemic change, such as adapting to climate change or reducing pesticide use, entrepreneurial leaders within

SMEs rely on experimentation, adaptability, and opportunity recognition rather than rigid strategic forecasting.

When integrated, these theories capture both the external coordination mechanisms (via RDT) and the internal cognitive-action processes (via ET) that guide sustainability transitions. Though RDT and effectuation theory are instrumental in elucidating external resource dynamics and internal decision-making under uncertainty, this research adds to the literature by incorporating three constructs of leadership, such as sustainable, entrepreneurial strategic, and innovation leadership, into a cohesive framework. Such an integration furthers theory by projecting how the layers of strategic, normative, and operational leadership interrelate to stimulate sustainability transitions. RDT explains why SMEs form inter-organizational collaborations; Effectuation explains how individual leaders within those firms innovate and adapt within those collaborative structures. This theoretical fusion is particularly relevant in the case of sustainable viticulture, where resource pooling, shared experimentation (e.g., adoption of fungus-resistant varietals), and iterative innovation are central to compliance and competitiveness.

Building on the integrated theoretical foundation of RDT and ET, this study proposes a conceptual framework that serves to explain how SME wine producers strategically navigate sustainability transitions under EU Green Deal pressures. Within this framework, entrepreneurial strategic leadership and innovation leadership function as internal enablers, shaping firm-level responses to uncertainty and regulatory demands. These responses are channeled through strategic grouping mechanisms such as alliances, clusters, and networks, which strengthen SMEs' access to resources, knowledge, and legitimacy. These combined dynamics of leadership, collaboration, and adaptability enable SMEs to respond to sustainability imperatives in context-specific ways. Practical manifestations include the adoption of fungus-resistant varietals (FRVs), reduced pesticide use, and innovation-driven ecological practices. Thereby, the study introduces the New Wine Typology, a diagnostic model that classifies SMEs based on their strategic posture, sustainability orientation, and degree of innovation engagement (see Figure 1).

The typology identifies a spectrum of strategic postures, ranging from reactive compliance to proactive ecological innovation, reflecting how different configurations of sustainable leadership and resource orchestration shape transition pathways. The resulting strategic archetypes of the New Wine Typology (see Table 2) serve both as an analytical lens and a practical tool for understanding the diversity of sustainability strategies in the wine sector, particularly among resource-constrained SMEs seeking competitive and ecological resilience. It outlines a progression from Traditionalists to Innovation-Driven Leaders, based on their sustainability alignment and strategic behavior under policy and market pressures.

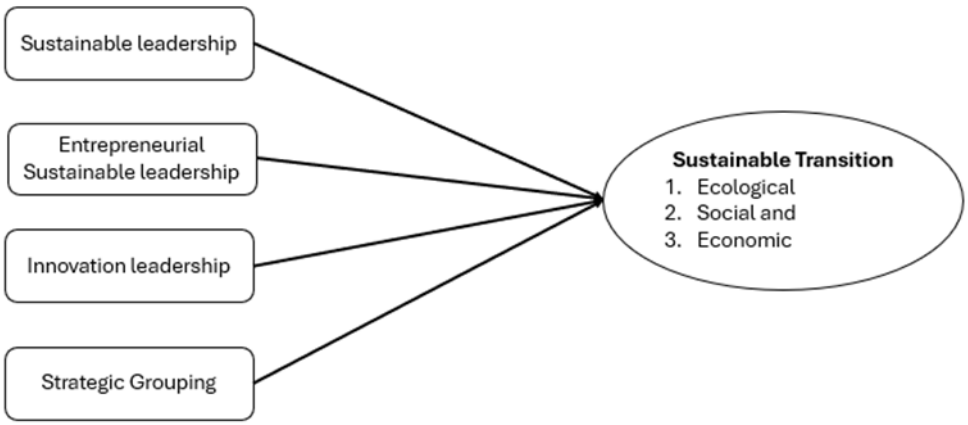

Figure 1. Conceptual Framework: Strategic Leadership and Grouping for Sustainable Transition in Wine SMEs under the EU Green Deal.

Table 2. New Wine Typology: Strategic Archetypes of SME Wineries in Sustainability Transitions.

Typology Archetype	Strategic Leadership Style	Grouping Strategy	Innovation Approach	Sustainability Role
Traditionalist	Operational/ Defensive	Minimal or individualized	Low or No Innovation	Compliance-focused; risk-averse change
Adaptive Collaborator	Entrepreneurial /Pragmatic	Regional clusters, alliances	Incremental eco-innovation (e.g., FRV trials)	Responsive to transition pressures
Innovation- Driven Leader	Visionary/Proactive	Cross-sector networks, consortia	Advanced sustainability innovation (e.g., FRV, digitalization, circularity)	Pioneer in sustainable transformation

2.9. Industry Context: The Wine Sector

Wine production is a global agricultural activity and a key form of value creation through alcoholic fermentation. The German wine sector is particularly relevant for investigating sustainable leadership and entrepreneurial strategy, as it is predominantly composed of small and medium-sized enterprises (SMEs), typically family-owned, with fewer than 10 full-time employees and annual revenues below one million Euros [108]. The industry faces intense rivalry, low profitability, and increasing market concentration, placing further pressure on small-scale producers [109]. German wineries are inherently dependent on natural systems, particularly climate stability, soil quality, and biodiversity. These environmental dependencies make the sector uniquely vulnerable to climate change and simultaneously position it as a potential leader in sustainability transitions. Sustainability in viticulture is therefore not only a policy-driven concern but also a strategic necessity grounded in ecological interdependence and shifting market expectations. However, integrating sustainability is complex, given the multifaceted nature of viticultural practices, contradictory impacts of interventions, uncertainty in cost–benefit outcomes, and the limited resources available to most SMEs [45,110,111].

The sector is experiencing increasing consumer and societal demand for sustainable wines, which has prompted wineries to explore sustainability not only as an environmental imperative but also as a source of market differentiation and competitiveness [45,111]. Still, wineries often struggle with how to operationalize sustainability, facing ambiguity in causal outcomes, limited managerial capacity, and strategic misalignment. At the ecological level, viticulture's heavy reliance on chemical pesticides presents a pressing sustainability concern [46]. In line with the EU Green Deal, which targets a 50% reduction in pesticide use, innovation in the form of fungus-resistant varietals has emerged as a promising solution [112–114]. FRVs offer the potential to reduce environmental harm while maintaining yield and quality, aligning both with regulatory expectations and long-term environmental resilience. As such, their adoption represents a concrete marker of strategic ecological innovation in the wine industry, particularly relevant for SMEs seeking to transition toward more sustainable models. This industry context thus provides a highly relevant setting to explore how SME wineries enact sustainable transitions through leadership, innovation, and strategic grouping, which are core dimensions of the conceptual framework proposed in this study.

3. Materials and Methods

3.1. Research Design

This study employed a quantitative, survey-based research design to evaluate sustainable leadership practices within SMEs in the wine industry. A survey-based quantitative design has been chosen to explore strategic archetypes and compare them statistically while supporting insights that can be generalized across the wine sector. Drawing upon the New

Wine configurational framework [45], the research examined the interplay between strategic management, eco-entrepreneurship [46,115,116], and innovation adoption. The study particularly focused on the adoption of fungus-resistant varieties (FRVs), investigating their influence on sustainability through the lens of three dimensions:

- Economic Sustainability: Emphasizing cost reduction and stable profitability under varied environmental conditions.
- Ecological Sustainability: Involving reduced pesticide use, improved biodiversity, and enhanced soil health.
- Social Sustainability: Addressing reduced labor intensity, chemical exposure, and physical strain in vineyard operations [117–121].

The adoption of FRVs was approached as a long-term strategic decision, with implications for marketing, production, and sustainability planning. Strategic constructs were grounded in Porter's generic strategies [122], strategic groupings [123–125], and Miles and Snow's typology [126–128], allowing classification of SME behaviors in terms of innovation, leadership, and sustainability orientation.

3.2. Survey Instrument Development

A structured online questionnaire was developed to capture both context-specific and standardized key constructs of interest. The survey contained four primary sections: (1) strategic profiling, (2) innovation positioning, (3) FRV ambitions, and (4) performance outcomes. Each section included validated items adapted from the existing literature, measured using a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree").

The strategic profiling section employed a twenty-two-item scale to assess strategic orientation, drawing on components from Porter's generic strategies, strategic groupings, and Miles and Snow's typology [122–129]. This scale aimed to classify SMEs according to managerial focus and strategic positioning in the market. Innovation positioning was measured using a five-item scale, adapted from previous studies on SME innovation behavior and environmental entrepreneurship [130,131], while sustainability-related constructs and measurement scales were adapted from validated sources in the literature [132,133]. This section captured the extent to which the firm emphasized innovation, sustainability, modernization, and adaptability in its operations. The FRV ambition section included four items developed to capture current and intended adoption of fungus-resistant grape varieties, referencing frameworks related to entrepreneurial environmentalism and sustainability adoption [134]. These items provided insights into long-term strategic planning, given that new vine varietals typically require several years to become operational. Nonetheless, it would be of significance to concede that FRV adoption is not an exclusive projection of sustainability ambition. FRVs are also known to exist within an environment of market skepticism and innovation uncertainty, especially in terms of perceived quality, consumer acceptance, and conservation of terroir. As a matter of fact, adoption of FRV projects is not only a disposition to engage with innovation that is potentially controversial, but also a commitment to ecology, which renders it intricate and an informative substitute within this study.

Performance outcomes were evaluated through three constructs of an eighteen-item satisfaction scale [135]. First, satisfaction with innovation outcomes was assessed using a nine-item subscale focusing on perceived internal benefits and effectiveness. Second, perceived product quality was measured using a four-item subscale, while customer satisfaction was captured using a five-item subscale. All items were adapted from established SME satisfaction and performance frameworks. Sample items included:

- "Our winery is satisfied with the quality improvements associated with FRV adoption."
- "Customer response to our sustainable product lines has been positive."

3.3. Sampling Strategy and Participants

The sampling frame comprised SMEs operating in the wine sector across German-speaking regions. A total of 2000 SMEs were invited to participate in the survey through a stratified mailing list curated to ensure variability in winery age, size, and legal structure. A total of 354 fully completed and usable responses were received, corresponding to a response rate of 18%. The sample was analyzed to ensure representation across organizational types [136,137], enabling analysis of heterogeneity in sustainable leadership practices. Nevertheless, cost-leadership-oriented firms were underrepresented, limiting the extrapolation of strategic variation across all typologies.

The survey was administered online, allowing for wide geographical reach and standardized data collection. It was originally designed in German and translated into English using a back-translation procedure to ensure linguistic accuracy. The instrument was pilot tested with 12 practitioners and revised based on feedback to enhance clarity and relevance. Ethical considerations guided the questionnaire and the process: Participation was voluntary, responses were anonymized, and data were stored securely in accordance with GDPR guidelines.

To assess the content validity, the questionnaire items were developed based on established literature and reviewed by three academic experts in sustainable management. Internal consistency was measured using Cronbach's Alpha, with all major scales exceeding the threshold of 0.70 (Strategic Innovation: $\alpha = 0.62$; Process Innovation: $\alpha = 0.48$; Product and market-related innovations: $\alpha = 0.65$; Economic Success: $\alpha = 0.84$; Success Metric: $\alpha = 0.77$) indicating acceptable reliability.

3.4. Statistical Analyses

Quantitative analysis was conducted using SPSS version 25. Descriptive statistics were used to summarize participant characteristics and key variables. Inferential analyses, including multivariate ANOVA, were conducted to examine relationships between strategic configurations and performance outcomes. This approach is at par with research carried out in the past, wherein configuration analysis has been recommended for examining competitive rivalry and dynamic markets [45]. Performance was measured using quantitative indicators (e.g., sales volume, operating result/profit, capital structure/liquidity, cost, market share, product quality, service quality, acquiring new customers, existing customer retention, positioning in competition, acquiring new markets/export and personal satisfaction). Likert-based responses were interpreted by calculating mean scores and standard deviations, followed by grouping firms into strategic archetypes based on cluster analysis. $p < 0.05$ was considered significant.

3.5. Limitations

Despite efforts to ensure diversity and representativeness, this study is subject to several limitations that may affect the generalizability and robustness of its findings. A sample bias may be present, which occurs when the participants selected for a study are not representative of the broader population it aims to understand. In this case, the response rate of 18% raises concerns that wineries with greater engagement in sustainability or innovation may be overrepresented. This undermines the extent to which findings can be generalized across the entire SME wine sector. A response bias may also be present. This refers to any tendency of participants to answer survey questions inaccurately, whether intentionally or unintentionally.

In this study, participants may have overstated their environmental practices or leadership behaviors due to social desirability, particularly in relation to sustainability and eco-innovation. Additionally, self-selection bias could have occurred, as participation in the survey was voluntary. This might have attracted respondents with a pre-existing interest

in sustainability or strategic innovation, potentially skewing the results. Furthermore, the study was limited to SMEs, excluding large wineries and multinational producers, which narrows the scope of applicability. The underrepresentation of cost-leadership-oriented firms also limits strategic diversity within the sample. Finally, the use of cross-sectional data restricts the ability to assess causal relationships or track long-term strategic changes, particularly in relation to FRV adoption, which often unfolds over multi-year cycles.

4. Results

Survey respondents all fall under the SME definition [138] with 85% micro and 15% small enterprises (see Table 3):

Table 3. Survey population split (yearly revenues in €1000).

Less Than 100	100 to 500	500 to 1000	1000 to 2000	2000 up to 100,000
21%	30%	22%	11%	15%

The decision to cultivate new grape varieties reflects a strategic and innovative response to growing environmental and economic challenges in viticulture. The survey highlights how these decisions intersect with sustainability-oriented leadership across different business models.

4.1. Implementation of FRV

Nearly 40% of respondents had planted FRVs, and among them, 60% plan further expansion—a clear sign of satisfaction and confidence. Additionally, 20% of all surveyed wineries intended to plant FRVs in the future. These findings indicate a growing relevance of FRVs, despite their currently modest share of less than 5% of Germany's total vineyard area. Interestingly, the adoption of FRVs is not strictly tied to organic farming. While ecological and biodynamic farms show higher adoption rates, the share of businesses rejecting FRVs remains consistent (approx. 40%) across all production types. This suggests that sustainability considerations are influencing even conventionally managed operations.

Half of all surveyed businesses believe that FRVs can contribute to environmental protection. Two-thirds see them at least partially as an opportunity to optimize their operations in terms of costs, risks, and processes. One-third of the respondents do not believe that these new varieties offer a viable opportunity for customer acquisition or retention. Notably, the advantages of FRV are rated most positively by those participants who are already cultivating them.

Leadership style plays a critical role: Two-thirds of manager-led businesses have adopted FRVs—twice as many as owner- or family-run firms. Moreover, half of all the respondents believe that FRVs contribute to environmental sustainability, and two-thirds see potential for operational optimization (e.g., reducing costs and risks). The high rate of FRV adoption within SMEs led by managers hints at an effectual mindset, highlighting learning-by-doing and harnessing internal control on market responses, which are uncertain, thereby projecting the tenets of effectuation theory.

However, customer acceptance remains uncertain. A third of the businesses do not view FRVs as an advantage for customer acquisition or retention. Positive assessments are strongest among those already growing FRV grapes, underscoring the value of experiential knowledge in innovative leadership.

4.2. Pioneering Ambition

The innovation typology distinguishes innovators (pioneers), early adopters, early majority, late majority, and laggards [66,77,139–141]. Innovativeness (level of innovation) sig-

nificantly correlates with the process and customer-oriented innovation measures. Pioneers show strongest innovation leadership, especially for customer-centric measures (M = 4.12, SD = 0.92) (see Table 4). Further, in this study, more than 50% of the survey population claiming to be pioneers or early adopters stated an intentionally high degree of innovativeness. Such a high level of innovation compared to other industries can be explained by the fact that each year wineries produce new wines (equally observed for the food industry) and that vintners are forced to cope with often unpleasant surprises from the weather—all of which requires considerable flexibility and openness to change [49,64,66,142] .

Early adopters, on the other hand, led in process innovation (M = 3.63, SD = 0.13), suggesting a sustainable or process-driven leadership model that emphasizes operational improvements before pushing market innovation. Lower scores for followers and laggards suggest that these firms may innovate reactively, likely driven by market pressure or fear of being left behind rather than proactive strategy. This aligns with a more conservative or cost-sensitive approach, especially among laggards. The ANOVA results confirmed these differences as statistically significant for customer benefit: F (4322) = 15.31, $p < 0.001$; process: F (4320) = 13.444, $p < 0.001$, with large effect sizes ($\eta^2 = 0.160$ and 0.144, respectively), indicating a meaningful relationship between innovation behavior and innovation cluster.

Table 4. Correlation of innovation perspectives (market vs. internal) and innovation (Mean ± SD).

Innovation Cluster	Customer Benefit/ Market Innovation	Internal/Process Innovation
	Mean ± SD	
Pioneer	4.12 ± 0.92	3.83 ± 0.94
Early adopters	3.53 ± 0.73	3.63 ± 0.13
Pragmatist	3.26 ± 0.71	3.17 ± 0.72
Conservatives	3.06 ± 0.86	2.92 ± 0.94
Skeptics	2.60 ± 0.14	2.40 ± 0.55
F-value	15.313	13.444
p-value	0.000 ***	0.000 ***
Eta	0.400	0.379
Eta-Squared	0.160	0.144

*** $p < 0.001$.

Innovation leadership also significantly correlates with sustainability (see Table 4). In particular, both pioneers and early adopters significantly correlate with social and economic sustainability ($p = 0.001$ and $p < 0.001$, respectively). Skeptics lag significantly in both areas, particularly in social sustainability (Mean = 2.80). The effect sizes are moderate for social ($\eta^2 = 0.063$) and stronger for economic sustainability ($\eta^2 = 0.084$), indicating that innovation orientation is positively associated with sustainability practices, especially in the social and economic dimensions. These findings underline the role of innovation leadership in fostering comprehensive sustainability strategies, while highlighting a clear gap among less innovation-inclined groups (See Table 5).

Table 5. Correlation of strategic dimensions of sustainability and innovation cluster.

Innovation Cluster	Ecological Sustainability	Social Sustainability	Economic Sustainability
		Mean ± SD	
Pioneer	4.36 ± 0.82	4.30 ± 0.88	4.06 ± 0.87
Early adopters	4.21 ± 0.81	4.13 ± 0.74	4.22 ± 0.73
Conservatives	4.10 ± 0.91	3.97 ± 0.90	3.72 ± 0.92
Pragmatist	3.97 ± 0.90	3.96 ± 0.77	3.99 ± 0.73
Skeptics	3.80 ± 0.84	2.80 ± 1.30	2.80 ± 1.30
F-value	1.932	4.727	6.456
p-value	0.105 (n.s)	0.001 ***	0.000 ***
Eta	0.163	0.251	0.290
Eta-Squared	0.027	0.063	0.084

*** $p < 0.001$. n.s—Not significant.

While differences in ecological sustainability across clusters are not statistically significant ($p = 0.105$), moderate trends suggest higher ecological commitment among pioneers (Mean = 4.36) and early adopters (Mean = 4.21).

4.3. Strategic Grouping and Innovativeness

Generic strategies force companies to narrow down options and focus on strategic activities [71,79,80,143]. Cost leaders strive for market share to reduce their unit costs by increasing capacity utilization—which in turn boosts their efficiency [81]. Differentiation requires standing out [82,83]. Niche strategies meet the needs and preferences of defined target groups [39,144]. In the interviewed population, 2% of the interviewees claim to follow cost leadership. 33% of the interviewed wineries base their positioning on price performance as a key strategic ambition. 22% state that quality leadership to be core of their strategic differentiation. A niche positioning is claimed by 27% of the population and 16% determine their strategic positioning to be premium provider.

The survey highlights how these decisions intersect with sustainability-oriented leadership across different business models (see Table 6). The premium strategy showed the highest mean score for ecological sustainability (4.61 ± 0.58), followed by the niche strategy (4.36 ± 0.86), while cost leadership had the lowest (4.00 ± 0.63). Statistically, there is a significant difference in ecological sustainability across strategies ($p = 0.000$, $\eta^2 = 0.104$), indicating a moderate effect size. For social sustainability, the differences were marginally significant ($p = 0.051$), suggesting a weak relationship ($\eta^2 = 0.033$), and for economic sustainability, no significant differences were found ($p = 0.347$, $\eta^2 = 0.016$). Overall, strategic choice appears to influence ecological outcomes most strongly, with limited or no impact on social and economic sustainability dimensions, respectively.

The association between innovation type and strategic positioning revealed a non-significant relationship overall (see Table 7). While some variation in distribution is observed, such as pragmatists and early adopters being more common under price performance strategies, and pioneers were slightly more frequent within niche strategies, but no statistically meaningful association ($p = 0.093$) was found. Thus, while certain patterns appear suggestive, there is no statistically significant link between a firm's innovation type and its strategic positioning, implying these two dimensions may operate largely independently in this context.

Table 6. Correlation of strategic positioning and strategic dimensions of sustainability (Mean ± SD).

Strategic Positioning	Ecological Sustainability	Social Sustainability	Economic Sustainability
		Mean ± SD	
Cost leadership	4.00 ± 0.63	3.67 ± 1.21	4.33 ± 0.82
Price-performance strategy	3.86 ± 0.84	3.95 ± 0.79	4.07 ± 0.91
Quality leadership	4.03 ± 0.86	4.00 ± 0.88	3.99 ± 0.74
Premium strategy	4.61 ± 0.58	4.34 ± 0.68	4.23 ± 0.71
Niche strategy	4.36 ± 0.86	4.15 ± 0.85	3.94 ± 0.82
F-value	8.151	2.397	1.120
p-value	0.000 ***	0.051 *	0.347
Eta	0.322	0.182	0.125
Eta-Squared	0.104	0.033	0.016

*** $p < 0.001$, * $p < 0.05$.

Table 7. Association between Innovation type versus Strategic Positioning (n (%)).

Innovation Type	Strategic Positioning				
	Cost Leadership	Price-Performance Strategy	Quality Leadership	Premium	Niche Strategy
Skeptics	0 (0.0)	3 (60.0)	1 (20.0)	0 (0.0)	1 (20.0)
Conservatives	2 (5.1)	13 (33.3)	10 (25.6)	5 (12.8)	9 (23.1)
Pragmatist	1 (1.4)	28 (40.0)	15 (21.4)	6 (8.6)	20 (28.6)
Early adopters	2 (1.6)	42 (33.3)	30 (23.8)	24 (19.0)	28 (22.2)
Pioneer	1 (2.2)	10 (22.2)	11 (24.4)	9 (20.0)	14 (31.1)
Total	6 (2.1)	96 (33.7)	67 (23.5)	44 (15.4)	72 (25.3)

4.4. Strategic Grouping and FRV Relevance

The decision to cultivate new grape varieties reflects a strategic and innovative response to growing environmental and economic challenges in viticulture. Table 8 highlights a statistically significant association between innovation cluster and FRV relevance, indicating that greater innovation orientation correlates with increased engagement in new grape variety adoption. Notably, early adopters and pioneers exhibit the highest rates of FRV realization (45.0% and 44.0%, respectively), whereas skeptics show minimal involvement (only 25.0% realized and none planned). The directional and symmetric measures, including Somers'd, Kendall's tau-b, Gamma, Spearman's rho, and Pearson's r, all yield statistically significant values ($p < 0.05$), confirming a modest but consistent positive relationship between innovation type and FRV adoption. These associations suggest that innovation-oriented groups are more likely to plan for and implement sustainable viticultural practices, such as adopting FRVs, underscoring the strategic importance of innovation culture in advancing environmentally friendly practices.

Table 8. Association between Innovation cluster versus FRV relevance (n (%)).

Innovation Cluster	FRV Relevance		
	No New Grape Varieties	New Grape Varieties Planned	New Grape Varieties Realized
Skeptics	3 (75.0)	0 (0.0)	1 (25.0)
Conservatives	21 (51.2)	10 (24.4)	10 (24.4)
Pragmatist	29 (40.3)	19 (26.4)	24 (33.3)
Early adopters	50 (38.8)	21 (16.3)	58 (45.0)
Pioneer	17 (34.0)	11 (22.0)	22 (44.0)
Total	120 (40.5)	61 (20.6)	115 (38.9)

Directional measures: $p = 0.017$; Symmetric measures: $p = 0.017$.

Strategic grouping's deterministic relevance of FRVs and resulting sustainable leadership builds upon strategic needs. Such a pattern is indicative of a resource coordination that is at par with the RDT, given that SMEs are known to harness collective structures (e.g., niche networks) to circumvent ecological, technological, and market uncertainty.

Table 9 presents the association between strategic positioning and FRV relevance, contextualized through leadership orientation and statistical association strength. Notable patterns emerge wherein niche strategies show the highest proportion of realized FRV use (50.0%) and are linked to an opportunity-driven leadership style, while premium strategies display a strong reluctance toward FRV adoption (66.7% no adoption), aligning with a tradition-centric approach.

Cost leadership, with a high realization rate (66.7%) and no planning stage, reflects a cautious implementer stance. Cost leaders have adopted FRV early on to profit from less costly pesticide treatments. Their pioneering leadership allows them to profit from cost advantages but also from gains in efficiency, predominantly process-driven innovation strategy and leadership. Statistical measures indicate significant associations, especially for premium and niche strategies (Cramer's V = 0.225 and Phi = 0.318, $p < 0.001$), suggesting meaningful differentiation in FRV engagement across strategies. In contrast, premium producers remain cautious, often due to concerns about brand alignment. While the premium wineries acknowledge the potential advantages of the new varieties, they do not perceive them as compatible with their strategic orientation. Premium producers often place a strong emphasis on traditional grape varieties and the regionally specific terroir; FRVs are perceived not to support strategic positioning and are more difficult to integrate into the product range or business model. Sustainable leadership hence offers the opportunity to compete against established premium providers.

Additionally, Goodman and Kruskal's tau and the Uncertainty Coefficient also support a modest but significant relationship ($p < 0.05$), particularly highlighting the role of

price-performance and quality leadership strategies, which are associated with pragmatic and discerning innovation orientations. Price-performance leaders and quality-focused wineries see FRVs as a tool for climate adaptation and efficiency, and their adoption strategies are in need of higher market acceptance or at least awareness of FRVs. Indeed, niche players discover FRV as a means to tailor their offerings to customer needs, e.g., LOHAS (Life of Health and Sustainability) and customers searching for new but sustainable experiences [145–147]. Overall, strategic positioning is moderate but significantly associated with FRV relevance, shaped by distinct leadership mindsets.

Table 9. Association between Strategic Positioning and FRV Relevance with Leadership Orientation and Association Strength.

Strategic Positioning	FRV Relevance			Likely Leadership Orientation	Association Measure	Value	*p*-Value
	No New Grape Varieties	New Grape Varieties Planned	New Grape Varieties Realized				
Cost leadership	2 (33.3)	0 (0.0)	4 (66.7)	Cautious Implementer	Lambda (FRV Relevance Dependent)	0.118	0.052 *
Price-performance strategy	28 (30.1)	26 (28.0)	39 (41.9)	Pragmatic Adopter	Goodman & Kruskal tau	0.050	0.018 *
Quality leadership	25 (36.8)	21 (30.9)	22 (32.4)	Discerning Innovator	Uncertainty Coefficient	0.049	0.017 *
Premium strategy	28 (66.7)	3 (7.1)	11 (26.2)	Tradition-Centric Strategist	Cramer's V	0.225	0.000 ***
Niche strategy	26 (36.1)	10 (13.9)	36 (50.0)	Opportunity-Driven Leader	Phi Coefficient	0.318	0.000 ***

*** $p < 0.001$, * $p < 0.05$.

4.5. Sustainable Leadership Impact on Performance of SME

The relationship between innovation clusters and their corresponding levels of innovation score, business performance, and sustainability score (see Table 10) turned out to be statistically significant, with particularly strong significance for business performance and sustainability ($p < 0.001$), while moderate for innovation score ($p = 0.028$). Interestingly, skeptics report the highest innovation score (Mean = 2.82) and business performance (Mean = 2.60), but the lowest sustainability score (Mean = 3.13), highlighting a narrow operational focus with limited long-term orientation. In contrast, pioneers and early adopters show lower performance scores (Mean = 1.97 and Mean = 2.18, respectively) despite higher sustainability scores (Mean = 4.24 and Mean = 4.19), indicating a forward-looking but potentially resource-intensive innovation approach. Effect sizes are moderate for business performance ($\eta^2 = 0.095$) and sustainability ($\eta^2 = 0.085$), and smaller for innovation score ($\eta^2 = 0.033$). These findings suggest that while sustainability and innovation orientation increase with cluster progressiveness, this may come at a short-term cost to business performance.

Table 11 informs that the perceived strategic relevance of FRV varies across business models, strategic positioning, and their corresponding innovation types. Among businesses with no planned FRV measures, significant variation is observed ($p = 0.040$), with cost leadership and niche strategies showing relatively higher mean relevance scores (Mean = 2.33 and Mean = 2.28), aligned with reactive and focused innovation types. In contrast, premium strategies reflect the lowest relevance (Mean = 1.75), suggesting a customer-centric but FRV-disengaged approach. For firms with planned but unrealized FRV initiatives, differences are not statistically significant ($p = 0.066 > 0.05$), though patterns hint at limited capacity or readiness, especially in premium strategies (Mean = 1.44), denoting resource-constrained innovation. Wineries that planned and realized FRV adoption also show marginal significance ($p = 0.055$), with scores relatively balanced across strategies, suggesting a more

practical or operationally driven innovation logic. Overall, the table indicates that strategic orientation influences the perceived value of FRVs, with cost-conscious and niche players displaying greater alignment, while premium-positioned firms remain less engaged in this innovation pathway.

Table 10. Correlation of innovation score, sustainability score and innovation clusters (Mean ± SD).

Innovation Cluster	Innovation Score	Business Performance	Sustainability Score
	Mean ± SD		
Skeptics	2.82 ± 0.43	2.60 ± 0.79	3.13 ± 0.90
Conservatives	2.44 ± 0.38	2.49 ± 0.65	3.93 ± 0.61
Pragmatist	2.56 ± 0.40	2.32 ± 0.46	3.97 ± 0.59
Early adapters	2.42 ± 0.40	2.18 ± 0.47	4.19 ± 0.53
Pioneer	2.47 ± 0.31	1.97 ± 0.51	4.24 ± 0.65
F-value	2.756	7.379	6.514
p-value	0.028 *	0.000 ***	0.000 ***
Eta	0.182	0.308	0.291
Eta-Squared	0.033	0.095	0.085

*** $p < 0.001$, * $p < 0.05$.

Table 11. Perceived Strategic Relevance of FRV by Business Model and Leadership Orientation; * $p < 0.05$.

Business Model	Strategic Positioning	FRV Relevance	Associated Innovation Type	*p*-Value
		Mean ± SD		
No planned measures	Cost leadership	2.33 ± 1.16	Reactive/Risk-Averse Innovation	0.040 *
	Price-performance strategy	2.11 ± 0.86	Functional/Incremental Innovation	
	Quality leadership	1.91 ± 0.91	Process-Oriented Innovation	
	Premium strategy	1.75 ± 0.97	Customer-Centric Innovation	
	Niche strategy	2.28 ± 0.92	Focused/Micro-Market Innovation	
Planned, but not realized	Price-performance strategy	2.11 ± 0.76	Latent/Emerging Innovation	0.066
	Quality leadership	1.94 ± 0.83	Capability-Building Innovation	
	Premium strategy	1.44 ± 0.88	Resource-Constrained Innovation	
	Niche strategy	2.06 ± 0.94	Unexploited Potential Innovation	
Planned and realized	Cost leadership	2.00 ± 1.41	Operational Efficiency Innovation	0.055
	Price-performance strategy	2.10 ± 0.90	Adoptive/Practical Innovation	
	Quality leadership	2.06 ± 0.73	Quality-Driven Innovation	
	Premium strategy	1.50 ± 0.80	Selective Innovation	
	Niche strategy	2.08 ± 0.93	Market-Responsive Innovation	

Table 12 compares how different strategic positioning performs across three dimensions: innovation, business performance, and sustainability. Overall, the strategies showed no significant differences in innovation ($p = 0.601$) and business performance ($p = 0.076$, $p < 0.05$). However, a significant difference was found in sustainability scores ($p = 0.001$), where premium strategy achieved the highest sustainability level (4.39 ± 0.48), followed by niche and cost leadership. The effect sizes (eta and eta-squared) suggest that sustainability was the most influenced dimension by strategy type, while innovation and performance differences were minor.

Table 12. Correlation of innovation score, business performance sustainability score and strategic positioning (Mean ± SD).

Strategic Positioning	Innovation Score	Business Performance	Sustainability Score
	Mean ± SD		
Cost leadership	2.31 ± 0.24	2.45 ± 0.75	4.00 ± 0.70
Price-performance strategy	2.45 ± 0.36	2.26 ± 0.49	3.96 ± 0.58
Quality leadership	2.42 ± 0.30	2.20 ± 0.45	4.00 ± 0.59
Premium strategy	2.40 ± 0.33	2.05 ± 0.48	4.39 ± 0.48
Niche strategy	2.38 ± 0.32	2.31 ± 0.62	4.15 ± 0.64
F-value	0.687	2.140	4.660
p-value	0.601	0.076	0.001 ***
Eta	0.098	0.172	0.249
Eta-Squared	0.010	0.030	0.062

*** $p < 0.001$.

Further, the findings also indicate significant differences between FRV relevance in terms of both innovation scores and business performance (See Table 13). Firms that planned and realized innovations exhibit significantly higher innovation engagement (Mean = 2.40) compared to those with unrealized plans (Mean = 2.20, F = 22.728, $p < 0.001$, $\eta^2 = 0.128$), suggesting that the realization of innovation plans contributes meaningfully to overall innovation activity. However, an inverse trend is observed for business performance, where those with unrealized innovations report better outcomes (Mean = 2.31) than those who implemented them (Mean = 2.09, $p = 0.007$, $\eta^2 = 0.049$) with a modest relationship. This suggests that while innovation realization enhances innovation scores, it does not automatically translate into improved short-term performance and may even entail transitional trade-offs.

The results strongly support that innovation leadership and strategic grouping determine the innovation portfolio.

Table 13. Correlation of innovation score, business performance and FRV relevance (Mean ± SD).

FRV Relevance	Innovation Score	Business Performance
	Mean ± SD	
Planned, but not realized	2.20 ± 0.25	2.31 ± 0.49
Planned and realized	2.40 ± 0.27	2.09 ± 0.48
F-value	22.728	7.563
p-value	0.000 ***	0.007 **
Eta	0.358	0.221
Eta-Squared	0.128	0.049
Customer Benefit/Market Innovation	0.400	0.160
Internal/Process Innovation	0.379	0.144

*** $p < 0.001$, ** $p < 0.01$.

5. Discussion

The findings obtained through this research indicated the way in which SMEs navigated entrepreneurship, innovation, and sustainability as an integral aspect of their alignment with wider sustainability transitions and the EU Green Deal. Given the fact that the majority of the SMEs within the German wine sector are dominated by family-owned businesses, this provides a strong indicator of the vital role played by entrepreneurial leadership in shaping pathways for sustainability and innovation. This finding is in line with research conducted in the past, which emphasizes how SMEs frequently depend on informal entrepreneurial decision-making structures, particularly within organizations that are family-owned, where strategic direction is mainly influenced by legacy and values [148,149]. Having autonomy within leadership facilitates organizations to promptly adapt to changes in environment or regulations, thereby strategically placing such organizations at an advantage for sustainability transitions [150–152].

Empirical bifurcation of the data into groups like 'early adopters' and 'pioneers' is indicative of the variety in terms of entrepreneurial mentality within the German wine sector. A proactive attitude is projected by 'pioneers' within process innovation and the market as well, which is revealed based on highest scores for customer benefit innovation (M = 4.12) and process innovation, which is above average (M = 3.83). Similar findings have been reported through past research, which reaffirms that entrepreneurial innovation, when attributed with proactiveness, innovativeness, and risk-taking, proves to be a robust driver of sustainable performance within agri-food SMEs [153,154].

A counterintuitive finding that emerged from this research was the non-linear association between innovation engagement and business performance. For example, high levels of business performance (M = 2.60) were reported by organizations falling under

the category of 'skeptics', regardless of poor scores in terms of sustainability and lesser orientation towards sustainability, but at the same time, organizations classified as 'pioneers' exhibited a pattern that was in stark contrast to skeptics. This hints at a trade-off or temporal lag between performance payoff and innovation investment, which supports the findings presented by [155]. Though skeptics reveal a greater level of short-term financial outcomes, resilience over a long-term period could be robust within premium or niche groups that are led by innovation, owing to their placement with sustainability megatrends. It has been contended by [155] that within SMEs, there is a frequent delay in return on investments, and also quite often they tend to be mediated by environmental factors. Nonetheless, the EU Green Deal has no doubt shaped the discourse within viticulture, however, as per our findings, it has been observed that among SMEs, leadership behaviour is not exclusively driven by compliance. This is especially true among niche strategists and pioneers, wherein it is environmental awareness, internal values, and acknowledgement of strategic opportunities that spur sustainable leadership, which is in line with the wider regulatory scene and intrinsic motivation.

In the same vein, a greater level of business performance was reported by organizations that planned but failed to achieve innovation as compared to those that actually executed it (2.31 vs. 2.09), which hints that operational efficiency could be momentarily disrupted when innovation is implemented. This finding is in line with the Schumpeterian theory, which implies that short-term instability is incurred with creative destruction prior to resulting in long-term competitive edge [156].

A highly compelling aspect that emerged from this research is the robust statistical association between innovation and sustainability orientation. SME that reported a greater level of strategic sustainability reported highest scores within customer-benefit (M = 4.39) and process innovation (M = 4.28). These findings are in tandem with the hypotheses in the literature [157] wherein it has been posited that innovation can be driven by environmental sustainability through product differentiation, compliance anticipation, and resource efficiency. Furthermore, equilibrium between sustainability and innovation can be observed within the higher social, ecological, and economic sustainability scores amongst early adopters and pioneers. This finding is in line with the literature [158–160] positing that innovation, which is oriented towards sustainability, tends to be systemic, incorporating not just environmental advantages but also social responsibility and organizational learning.

However, variations in terms of ecological sustainability across groups were not found to be statistically significant (p = 0.105), which could possibly hint that compliance with environmental paradigms (EU Common Agricultural Policy directives or Pesticide Regulation) is currently extensive and does not differentiate much. On the contrary, organizations separate themselves based on highly progressive economic and social initiatives towards sustainability, which include fair labour practices, local employment, and value-added branding, wherein early adopters and pioneers have been found to excel [161,162].

The alignment or absence of alignment between strategic positioning and innovation clusters offers yet another valuable insight. Though no major link was observed between the type of innovation and strategy (for example, premium branding vs. cost leadership), the perceived pertinence of FRVs was found to differ across business models. Strategies that are niche and sustainability-oriented were largely at par with adoption of FRV. This was particularly observed among early adopters and pioneers. Similar findings were reported [163,164] stating that SMEs in the premium wine segment were largely embracing agro-ecological practices. Though adoption of FRVs has been utilized as an aspect that hinted at sustainability ambition, it was also indicative of a type of market and technological innovation that did not get universal acceptance [165]. Reluctance in the market, both regarding hesitation of growers to plant and the willingness of consumers to buy, is

suggestive of the fact that FRVs are stuck in a disputed space of product legitimacy and ecological process [26]. Such a dual nature would explain why some strategic groups with robust values in sustainability (e.g., premium producers) lag in terms of adopting FRVs regardless of having a high ecological awareness.

A foremost viticultural sustainability innovation in the EU referred to the adoption of FRV found a robust correlation with innovation leadership (Gamma = 0.174, $p = 0.017$). This finding is a validation of work conducted in the past [166,167], which places varietal innovation as a substitute for ecological shifts, particularly in regions that are susceptible to climatic conditions.

Transitions to biodiversity protection, carbon neutrality, and zero-pollution agriculture are encouraged by the EU Green Deal [168,169]. The findings obtained through this research offer practical evidence on how such imperatives are internalized by SMEs. Innovations such as FRVs tend to lower the pressure of disease and chemical inputs which lends support to biodiversity and reduction of carbon footprints [170,171], the objectives of which are entrenched in the farm-to-fork strategy of the EU. Furthermore, the interlinks among types of innovation and integration of sustainability indicate that SMEs in the wine sector play a facilitating role as active agents rather than passive followers under the tenets of sustainability transitions. As emphasized, regulatory pressures are not the only force that drives transitions, but it has more to do with entrepreneurial players actively experimenting, innovating, and scaling [172].

An interesting aspect that emerged from the analysis indicates that innovation culture and strategic leadership, not restricted to economic capability or size alone, turned out to be the actual drivers for aligning with the objectives of sustainability. Similar outcomes have been observed through studies pertaining to the literature on sustainable entrepreneurship [173–176], wherein it has been argued that leadership that is driven by purpose will offset any disadvantages that are structural in nature.

The findings obtained through this study can be eloquently understood through the lens of RDT and effectuation theory. Greater levels of adoption of FRV within pioneers and early adopters not just indicate proactive innovation but also highlight the initiatives to lower external reliance on traditional agrochemical inputs, which is a key aspect of RDT [94]. With the adoption of FRVs, regulatory risks (e.g., pesticide restrictions under the EU Green Deal) are being strategically overcome by SMEs while gaining access to production systems that are highly resilient. At the same time, the role played by strategic groupings like alliances, niche networks, and clusters demonstrates the way in which SMEs cumulatively organize legitimacy and resources as a response to environmental restrictions, in tandem with the emphasis of RDT on inter-organizational adaptations.

From the perspective of effectuation, effectual logic is evident from the behavior of early adopters and pioneers such as gaining knowledge through experiments, working with existing resources, and forging partnerships for collectively developing pathways for viable sustainability. Such organizations are known to embrace uncertainty, pivot their practices related to innovation while giving priority to control instead of prediction. These are classic effectuation attributes [177]. In contrast, hesitation on the part of premium producers towards FRV adoption projects a largely causation-based logic, which is predicted and linked with safeguarding the identity of the brand while lowering risks in the market. Such a theoretical underpinning tends to clarify why certain SMEs are at the forefront of sustainability transitions, whereas there are others who are reluctant. This is not just a strategic matter but rather one of cognitive framing and negotiating resources in the face of uncertainty.

The findings obtained through this research present actionable inputs for practitioners as well as policymakers who are keen to speed up the process of sustainability transitions

within the wine sector. As far as winery managers are concerned, comprehending their position in the innovation typology offers a diagnostic instrument for strategic planning. It is imperative that pioneers and early adopters engage in collaborative networks for knowledge sharing on sustainable practices and FRV cultivation, thus lowering costs for lagging groups and transition risks. Skeptics and conservatives on the other hand would need targeted programs for capacity building and proof of economic advantages to overcome resistance.

Further, these inputs can be used by policymakers to design and develop tiered support mechanisms, like tax mechanisms or subsidies associated with membership in an innovation cluster. In addition, introducing FRV certification labels can be instrumental in creating consumer-driven demand, offering rewards to wineries that are proactive. With a clear-cut link between leadership development and sustainability outcomes, it would be possible to move national policies and EU Green Deal beyond approaches that are based on compliance, towards nurturing entrepreneurial and innovative leadership among SME wineries.

Practical recommendations for SMEs/wine entrepreneurs:

- Evaluate the innovation profile of your business (pioneer, early adopter, conservative, skeptic) utilizing the new wine typology to recognize strategic priorities and fine-tune with your strategic grouping assessment. Thereon, clarify your sustainability ambitions, limitations, actions and develop a communication basis. Leapfrog innovations (e.g., FRV) can be a pillar therein if it fits strategically and serves in positioning and to communicate uniqueness and value-generation.
- Develop partnerships with pioneering wineries to acquire knowledge and use innovation, and offer components as a strategic way to differentiate in the overcrowded market.
- Make investments towards leadership training programs that incorporate sustainability values with strategic entrepreneurial skills.

Practical recommendations for policymakers and industry associations

- Provide tiered financial subsidies and incentives to stimulate progressive adoption of innovation and sustainable practices (e.g., FRV planting).
- Launch campaigns to create public awareness to augment market demand and willingness to pay for products and services that are sustainably produced.
- Extend initiatives for leadership development with the intention to equip winery managers with skills to drive innovation and sustainability transitions.
- Focus on the transformation champions in sustainability (e.g., using hereby presented New Wine Typology Framework) and promote them (i.e., in the case of FRV, motivating niche players presents a more promising means to reach Green Deal ambitions than premium providers).

6. Conclusions

A varying picture has emerged from the empirical analysis carried out involving SMEs in the German wine sector, wherein it has been revealed that though sustainability orientation and strategic innovation tend to stimulate the advancement towards the objectives of the EU Green Deal, the impact on the short-term business objectives can vary. It has been indicated that early adopters and pioneers project robust social and ecological commitments, in tandem with greater levels of innovation intensity. Nonetheless, this frequently affects immediate economic returns. As opposed, it has been noted that better levels of near-term performance are realized by skeptics, irrespective of the fact that they are exposed to the risk of being left behind with regard to alignment with regulations and resilience in the long-term.

Prevalent theories have been substantiated through this research in terms of the mutual subtleties between innovation and sustainability, while drawing attention to the distinct role played by entrepreneurial leadership in navigating SMEs on the path of sustainable transitions. As far as policymakers are concerned, it implies that facilitating frameworks such as offering subsidies to embrace FRV adoption, innovation grants, and leadership training, but targeted to sustainable, innovative leadership champions, could improve the capability of SMEs to make meaningful contributions to systematic changes and be key in reaching societal transformation (i.e., Green Deal ambitions). With regard to practitioners, it underscores the value of distinctiveness and according communication not neglecting the necessity to create equilibrium between operational viability and visionary innovation, particularly within an industry segment that is firmly associated with conventions, culture, and land.

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Abbreviations

The following abbreviations are used in this manuscript:

ET	Effectuation Theory
EU	European Union
FRV	Fungus-resistant grape varieties
GDPR	General Data Protection Regulation
LOHAS	Life Of Health And Sustainability
RDT	Resource Dependency Theory
SME	Small and medium-sized enterprises

References

1. Oliveira-Dias, D.; Kneipp, J.M.; Bichueti, R.S.; Gomes, C.M. Fostering business model innovation for sustainability: A dynamic capabilities perspective. *Manag. Decis.* **2022**, *60*, 105–129. [CrossRef]
2. Chen, P.; Chu, Z.; Zhao, M. The Road to corporate sustainability: The importance of artificial intelligence. *Technol. Soc.* **2024**, *76*, 102440. [CrossRef]
3. Schaltegger, S.; Girschik, V.; Trittin-Ulbrich, H.; Weissbrod, I.; Daudigeos, T. Corporate change agents for sustainability: Transforming organizations from the inside out. *Bus. Ethics Environ. Responsib.* **2024**, *33*, 145–156. [CrossRef]
4. Bjartmarz, T.K.; Bocken, N.M.P. Sustainable business models and organizational boundaries—A literature review. *Bus. Strateg. Environ.* **2024**, *33*, 6716–6736. [CrossRef]
5. Benmira, S.; Agboola, M. Evolution of leadership theory. *BMJ Lead.* **2021**, *5*, 3–5. [CrossRef]
6. Khizar, H.M.U.; Iqbal, M.J.; Murshed, F.; Ahsan, M. Sustainability Outcomes in SMEs: A Configurational View of the Interplay of Strategic Orientations and Environmental Conditions. *J. Macromark.* **2024**, *44*, 534–552. [CrossRef]
7. Waite, A.M. Leadership's influence on innovation and sustainability. *Eur. J. Train. Dev.* **2013**, *38*, 15–39. [CrossRef]
8. McCann, J.T.; Holt, R.A. Defining sustainable leadership. *Int. J. Sustain. Strateg. Manag.* **2010**, *2*, 204. [CrossRef]
9. Werner-Lewandowska, K.; Wiecek-Janka, E.; Pawłowski, G. Determinants of Sustainability Maturity in Family Businesses. *Sustainability* **2025**, *17*, 1818. [CrossRef]
10. Teece, D.J. Business Models, Business Strategy and Innovation. *Long Range Plann.* **2010**, *43*, 172–194. [CrossRef]

11. Quintás, M.A.; Martínez-Senra, A.I.; Sartal, A. The Role of SMEs' Green Business Models in the Transition to a Low-Carbon Economy: Differences in Their Design and Degree of Adoption Stemming from Business Size. *Sustainability* **2018**, *10*, 2109. [CrossRef]
12. Silva, V.; Yang, X.; Fleskens, L.; Ritsema, C.J.; Geissen, V. Environmental and human health at risk—Scenarios to achieve the Farm to Fork 50% pesticide reduction goals. *Environ. Int.* **2022**, *165*, 107296. [CrossRef] [PubMed]
13. de Andrade, R.D.; Benfica, V.C.; de Oliveira, H.V.E.; Suchek, N. Investigating green jobs and sustainability in SMEs: Beyond business operations. *J. Clean. Prod.* **2025**, *486*, 144477. [CrossRef]
14. Al Jabr, M.; Matriano, M.T.D.G. An Empirical Study on SMEs Growth and Sustainability: A Case Study in Oman. *Glob. Sci. J.* **2023**, *11*, 110–122.
15. Litvaj, I.; Drbúl, M.; Bůžek, M. Sustainability in Small and Medium Enterprises, Sustainable Development in the Slovak Republic, and Sustainability and Quality Management in Small and Medium Enterprises. *Sustainability* **2023**, *15*, 2039. [CrossRef]
16. Maheshwari, G.; Schrage, B. Emerging trends in social entrepreneurship and sustainability: A Southeast Asia analysis. *Bottom Line* **2025**. *ahead-of-print*. [CrossRef]
17. Boeske, J.; Murray, P.A. The Intellectual Domains of Sustainability Leadership in SMEs. *Sustainability* **2022**, *14*, 1978. [CrossRef]
18. Poulsen, C.; Mønsted, M. Innovation and entrepreneurial practices in the wine sector: Constant experimentation and playfulness. In *Global Warming and the Wine Industry—Challenges, Innovations and Future Prospects*; IntechOpen: London, UK, 2023. [CrossRef]
19. Boltayev, N. Strategic Integration and Diversification in the Viticulture Sector: A Cluster-Based Approach to Sustainable Development. *EPRA Int. J. Agric. Rural Econ. Res.* **2025**, *13*, 18–25. [CrossRef]
20. Soler, I.P.; Gemar, G.; Guerrero-Murillo, R. Family and non-family business behaviour in the wine sector: A comparative study. *Eur. J. Fam. Bus.* **2017**, *7*, 65–73. [CrossRef]
21. Richter, B.; Hanf, J. Competitive Strategies for Wine Cooperatives in the German Wine Industry. *Wine Econ. Policy* **2020**, *9*, 83–98. [CrossRef]
22. Alessandri, G.; Dadd, T.; Iraldo, F. Environmental sustainability in the wine industry, a literature review. *Clean. Prod. Lett.* **2024**, *7*, 100067. [CrossRef]
23. Pedneault, K.; Provost, C. Fungus resistant grape varieties as a suitable alternative for organic wine production: Benefits, limits, and challenges. *Sci. Hortic.* **2016**, *208*, 57–77. [CrossRef]
24. Piccoli, A.; Viganò, F. Unveiling the Motivations Behind Cultivating Fungus-Resistant Wine Varieties: Insights from Wine Growers in South Tyrol, Italy. *Sustainability* **2025**, *17*, 2615. [CrossRef]
25. Trapp, O.; Avia, K.; Borrelli, C.; Eibach, R.; Merdinoglu, D.; Töpfer, R. More sustainability in Europe's vineyards—Using resistant grapevine varieties to reduce the input of pesticides. *Plants People Planet* **2025**. *under review*. [CrossRef]
26. Kiefer, C.; Szolnoki, G. Consumer Acceptance of Fungus-Resistant Grape Varieties—An Exploratory Study Using Sensory Evaluation Tests among Consumers in Germany. *Sustainability* **2023**, *15*, 10664. [CrossRef]
27. Schoemaker, P.J.H.; Heaton, S.; Teece, D. Innovation, Dynamic Capabilities, and Leadership. *Calif. Manage. Rev.* **2018**, *61*, 15–42. [CrossRef]
28. Verburg, R. Leadership, Innovation, and Sustainability. In *Innovation for Sustainability: Business Transformations Towards a Better World*; Springer International Publishing: Cham, Switzerland, 2019; pp. 117–133. [CrossRef]
29. Cortes, A.F.; Herrmann, P. Strategic Leadership of Innovation: A Framework for Future Research. *Int. J. Manag. Rev.* **2021**, *23*, 224–243. [CrossRef]
30. Reitz, H.J.; Pfeffer, J.; Salancik, G.R. *The External Control of Organizations: A Resource Dependence Perspective*; Stanford Graduate School of Business: Stanford, CA, USA, 1978. Available online: https://www.gsb.stanford.edu/faculty-research/books/external-control-organizations-resource-dependence-perspective (accessed on 7 October 2025).
31. Sarasvathy, S.D. Causation and Effectuation: Toward a Theoretical Shift from Economic Inevitability to Entrepreneurial Contingency. *Acad. Manag. Rev.* **2001**, *26*, 243–263. [CrossRef]
32. Schaltegger, S.; Wagner, M. Sustainable entrepreneurship and sustainability innovation: Categories and interactions. *Bus. Strateg. Environ.* **2011**, *20*, 222–237. [CrossRef]
33. Ferdig, M.A. Sustainability Leadership: Co-creating a Sustainable Future. *J. Change Manag.* **2007**, *7*, 25–35. [CrossRef]
34. Ernst, R.-A.; Gerken, M.; Hack, A.; Hülsbeck, M. SMES' reluctance to embrace corporate sustainability: The effect of stakeholder pressure on self-determination and the role of social proximity. *J. Clean. Prod.* **2022**, *335*, 130273. [CrossRef]
35. Rainey, D.L. *Sustainable Business Development: Inventing the Future Through Strategy, Innovation, and Leadership*; Cambridge University Press: Cambridge, UK, 2010. Available online: https://www.amazon.in/Sustainable-Business-Development-Innovation-Leadership/dp/052114843X (accessed on 7 October 2025).
36. Schaltegger, S.; Lüdeke-Freund, F.; Hansen, E.G. Business Models for Sustainability. *Organ. Environ.* **2016**, *29*, 264–289. [CrossRef]
37. Leyer, M.; Ivchenkov, K.; Kirschner, T. Requirements of German micro-sized entrepreneurial companies regarding the management of business processes. *Int. J. Entrep. Small Bus.* **2018**, *33*, 72. [CrossRef]

38. McGee, J.E.; Shook, C.L. Repsponding to Industry Consolidation in Fragmented Industries: The Role of Capabilities in Small Business Survival. *J. Small Bus. Strateg.* **2000**, *11*, 21–32.
39. Santini, C.; Cavicchi, A.; Gilinsky, A.; Newton, S. Niche Strategy and Resources: Dilemmas and open questions, an exploratory study. In Proceedings of the 8th International Conference, Geisenheim, Germany, 25–27 July 2014; Academy of Wine Business Research: Verona, Italy, 2014; pp. 1–13.
40. Saunila, M. Innovation capability in SMEs: A systematic review of the literature. *J. Innov. Knowl.* **2020**, *5*, 260–265. [CrossRef]
41. Forsman, H. Innovation capacity and innovation development in small enterprises. A comparison between the manufacturing and service sectors. *Res. Policy* **2011**, *40*, 739–750. [CrossRef]
42. Terziovski, M. Innovation practice and its performance implications in small and medium enterprises (SMEs) in the manufacturing sector: A resource-based view. *Strateg. Manag. J.* **2010**, *31*, 892–902. [CrossRef]
43. Casali, G.L.; Perano, M.; Presenza, A.; Abbate, T. Does innovation propensity influence wineries' distribution channel decisions? *Int. J. Wine Bus. Res.* **2018**, *30*, 446–462. [CrossRef]
44. Carchano, M.; Carrasco, I.; González, Á.; Sáez-Martínez, F.J. Analysis the nexus between internationalization and financial performance in wine industry: The effect of proactive environmental strategy and eco-innovation. *Corp. Soc. Responsib. Environ. Manag.* **2024**, *31*, 5954–5970. [CrossRef]
45. García-Cortijo, M.C.; Ferrer, J.R.; Castillo-Valero, J.S.; Pinilla, V. The Drivers of the Sustainability of Spanish Wineries: Resources and Capabilities. *Sustainability* **2021**, *13*, 10171. [CrossRef]
46. Chen, J.; Liu, L. Profiting from Green Innovation: The Moderating Effect of Competitive Strategy. *Sustainability* **2018**, *11*, 15. [CrossRef]
47. Dana, L.P.; Grandinetti, R.; Mason, M.C. International entrepreneurship, export planning and export performance: Evidence from a sample of winemaking SMEs. *Int. J. Entrep. Small Bus.* **2016**, *29*, 602. [CrossRef]
48. Covin, J.G.; Slevin, D.P. A Conceptual Model of Entrepreneurship as Firm Behavior. *Entrep. Theory Pract.* **1991**, *16*, 7–26. [CrossRef]
49. Granata, J.; Aytaç, B.; Roubaud, D. Innovation developments in the wine industry: A journey from the amphorae of old to the California wine cluster. *Int. J. Entrep. Small Bus.* **2019**, *36*, 249. [CrossRef]
50. Singer, M.; Donoso, P. Upstream or downstream in the value chain? *J. Bus. Res.* **2008**, *61*, 669–677. [CrossRef]
51. Dressler, M. Innovation management of German wineries: From activity to capacity—An explorative multi-case survey. *Wine Econ. Policy* **2013**, *2*, 19–26. [CrossRef]
52. Carter, A.P. Upstream and Downstream Benefits of Innovation. *Econ. Syst. Res.* **1990**, *2*, 241–257. [CrossRef]
53. Crossan, M.M.; Apaydin, M. A Multi-Dimensional Framework of Organizational Innovation: A Systematic Review of the Literature. *J. Manag. Stud.* **2010**, *47*, 1154–1191. [CrossRef]
54. Hauschildt, J.; Salomo, S.; Schuld, C. Innovations Management. Vahlen. 2022. Available online: https://www.amazon.in/Innovationsmanagement-Vahlens-HandbÃijcher-Wirtschafts-Sozialwissenschaften/dp/3800666243 (accessed on 7 October 2025).
55. Schumpeter, J.A. Business Cycles: A Theoretical, Historical, And Statistical Analysis of the Capitalist Process. First. 2014. Available online: https://www.amazon.com/Business-Cycles-Theoretical-Historical-Statistical/dp/1578985560 (accessed on 7 October 2025).
56. Kirner, E.; Kinkel, S.; Jaeger, A. Innovation paths and the innovation performance of low-technology firms—An empirical analysis of German industry. *Res. Policy* **2009**, *38*, 447–458. [CrossRef]
57. Le Roy, F.; Robert, M.; Giuliani, P. The concept of management innovation: Definition, state of the art and future research avenues. *Int. J. Entrep. Small Bus.* **2018**, *35*, 44. [CrossRef] [PubMed]
58. Prajogo, D.I.; Ahmed, P.K. Relationships between innovation stimulus, innovation capacity, and innovation performance. *RD Manag.* **2006**, *36*, 499–515. [CrossRef]
59. Prada, J.; Dinis, L.-T.; Soriato, E.; Vandelle, E.; Soletkin, O.; Uysal, Ş.; Dihazi, A.; Santos, C.; Santos, J.A. Climate change impact on Mediterranean viticultural regions and site-specific climate risk-reduction strategies. *Mitig. Adapt. Strateg. Glob. Change* **2024**, *29*, 52. [CrossRef]
60. Cosme, F.; Nunes, F.M.; Filipe-Ribeiro, L. (Eds.) *Global Warming and the Wine Industry—Challenges, Innovations and Future Prospects*; IntechOpen: London, UK, 2024. [CrossRef]
61. Şen, A.; Eren, E. Innovative Leadership for the Twenty-First Century. *Procedia-Soc. Behav. Sci.* **2012**, *41*, 1–14. [CrossRef]
62. Horth, D.; Buchner, D. Innovation Leadership How to Use Innovation to Lead Effectively, Work Collaboratively, and Drive Results. 2014. Available online: https://mcoed.edu.ng/library/ebooks/resources/Innovation_Leadership_by_david_horth.pdf (accessed on 7 October 2025).
63. Dana, L.-P.; Granata, J.; Lasch, F.; Carnaby, A. The evolution of co-opetition in the Waipara wine cluster of New Zealand. *Wine Econ. Policy* **2013**, *2*, 42–49. [CrossRef]
64. Hojman, D.E. Radical innovation in luxury carmenere wine from Chile. *J. Wine Res.* **2015**, *26*, 40–63. [CrossRef]
65. Forbes, S.L.; King, L. An Exploratory Analysis of Marketing Innovations in the New Zealand Wine Industry. In Proceedings of the AWBR International Conference, St. Catharines, ON, Canada, 12–15 June 2013; pp. 1–9. Available online: http://academyofwinebusiness.com/wp-content/uploads/2013/04/Forbes-King.pdf (accessed on 7 October 2025).

66. Gilinsky, A.; Santini, C.; Lazzeretti, L.; Eyler, R. Desperately seeking serendipity. *Int. J. Wine Bus. Res.* **2008**, *20*, 302–320. [CrossRef]
67. Porter, M.E. From Competitive Advantage to Corporate Strategy. *Harv. Bus. Rev.* **1988**. Available online: https://hbr.org/1987/05/from-competitive-advantage-to-corporate-strategy (accessed on 10 July 2025).
68. González-Benito, J.; Suárez-González, I. A Study of the Role Played by Manufacturing Strategic Objectives and Capabilities in Understanding the Relationship between Porter's Generic Strategies and Business Performance. *Br. J. Manag.* **2010**, *21*, 1027–1043. [CrossRef]
69. Pertusa-Ortega, E.M.; Molina-Azorín, J.F.; Claver-Cortés, E. Competitive strategy, structure and firm performance. *Manag. Decis.* **2010**, *48*, 1282–1303. [CrossRef]
70. Barney, J.B. Is the Resource-Based 'View' a Useful Perspective for Strategic Management Research? Yes. *Acad. Manag. Rev.* **2001**, *26*, 41. [CrossRef]
71. Dess, G.G.; Davis, P.S. Porter's (1980) Generic Strategies as Determinants of Strategic Group Membership and Organizational Performance. *Acad. Manag. J.* **1984**, *27*, 467–488. [CrossRef]
72. Bozarth, C.; McDermott, C. Configurations in manufacturing strategy: A review and directions for future research. *J. Oper. Manag.* **1998**, *16*, 427–439. [CrossRef]
73. Ward, P.T.; Duray, R. Manufacturing strategy in context: Environment, competitive strategy and manufacturing strategy. *J. Oper. Manag.* **2000**, *18*, 123–138. [CrossRef]
74. Speed, R.J. Oh Mr Porter! A Re-Appraisal of Competitive Strategy. *Mark. Intell. Plan.* **1989**, *7*, 8–11. [CrossRef]
75. Zahra, S.A.; Pearce, J.A. Research Evidence on the Miles-Snow Typology. *J. Manag.* **1990**, *16*, 751–768. [CrossRef]
76. MacDaniel, S.W.; Kolari, J.W. Marketing strategy implications of the Miles and Snow strategic typology. *J. Mark.* **1987**, *51*, 19–30.
77. Anwar, J.; Butt, I.; Ahmad, N. SMEs' strategic orientation through Miles and Snow typology: A synthesis of literature and future directions. *Manag. Res. Rev.* **2025**, *48*, 258–286. [CrossRef]
78. Neely, A.; Hii, J. Innovation and Business Performance: A Literature Review. 1998. Available online: https://www.researchgate.net/publication/264870158_Innovation_and_Business_Performance_A_Literature_Review (accessed on 7 October 2025).
79. Miller, D. Relating Porter's Business Strategies to Environment and Structure: Analysis and Performance Implications. *Acad. Manag. J.* **1988**, *31*, 280–308. [CrossRef]
80. Porter, M.E. How Competitive Forces Shape Strategy. *Harv. Bus. Rev.* **1979**. Available online: https://hbr.org/1979/03/how-competitive-forces-shape-strategy (accessed on 7 October 2025).
81. Islami, X.; Mustafa, N.; Latkovikj, M.T. Linking Porter's generic strategies to firm performance. *Futur. Bus. J.* **2020**, *6*, 3. [CrossRef]
82. Newton, S.K.; Gilinsky, A.; Jordan, D. Differentiation strategies and winery financial performance: An empirical investigation. *Wine Econ. Policy* **2015**, *4*, 88–97. [CrossRef]
83. Berenguer, G.; Gil, I.; Ruiz, M.E. Do upscale restaurant owners use wine lists as a differentiation strategy? *Int. J. Hosp. Manag.* **2009**, *28*, 86–95. [CrossRef]
84. Dimitratos, P.; Liouka, I.; Young, S. A Missing Operationalization: Entrepreneurial Competencies in Multinational Enterprise Subsidiaries. *Long Range Plann.* **2014**, *47*, 64–75. [CrossRef]
85. Audretsch, D.B.; Castrogiovanni, G.J.; Ribeiro, D.; Roig, S. Linking Entrepreneurship and Management: Welcome to the International Entrepreneurship and Management Journal. *Int. Entrep. Manag. J.* **2005**, *1*, 5–7. [CrossRef]
86. Gibb, A.; Scott, M. Strategic Awareness, Personal Commitment and the Process of Planning in the Small Business. *J. Manag. Stud.* **1985**, *22*, 597–631. [CrossRef]
87. Deimel, K. Stand der strategischen Planung in kleinen und mittleren Unternehmen (KMU) in der BRD. *Z. Für Plan. Unternehmenssteuerung* **2008**, *19*, 281–298. [CrossRef]
88. Zahra, S.A.; George, G. Absorptive Capacity: A Review, Reconceptualization, and Extension. *Acad. Manag. Rev.* **2002**, *27*, 185. [CrossRef]
89. Mallak, L. Putting Organizational Resilience to Work. 1998. Available online: https://www.researchgate.net/publication/291863333_Putting_Organizational_Resilience_to_Work (accessed on 7 October 2025).
90. Thomas, L.C.; Painbéni, S.; Barton, H. Entrepreneurial marketing within the French wine industry. *Int. J. Entrep. Behav. Res.* **2013**, *19*, 238–260. [CrossRef]
91. Read, S.; Dolmans, S. Effectuation 10 Year Waypoint. *Int. Rev. Entrep.* **2012**, *10*, 25–46.
92. De Wolf, P.; Schoorlemmer, H.; Jukema, N.; van der Waal, B. Exploring the Significance of Entrepreneurship in Agriculture. 2007. Available online: https://orgprints.org/id/eprint/10915/1/de-wolf-schorlemmer-2007-esof_000.pdf (accessed on 7 October 2025).
93. Nienhüser, W. Resource Dependence Theory—How Well Does It Explain Behavior of Organizations? In *Human Resources, Labour Relations and Organizations*; Nomos Verlagsgesellschaft mbH & Co. KG: Baden, Germany, 2017; pp. 192–219. [CrossRef]
94. Mwai, N.W.; Kiplang'at, J.; Gichoya, D. Application of resource dependency theory and transaction cost theory in analysing outsourcing information communication services decisions. *Electron. Libr.* **2014**, *32*, 786–805. [CrossRef]
95. Biermann, R.; Harsch, M. Resource Dependence Theory. In *Palgrave Handbook of Inter-Organizational Relations in World Politics*; Palgrave Macmillan: London, UK, 2017; pp. 135–155. [CrossRef]

96. Akram, F.; Haq, M.A.U. Integrating agency and resource dependence theories to examine the impact of corporate governance and innovation on firm performance. *Cogent Bus. Manag.* **2022**, *9*, 2152538. [CrossRef]
97. Sarasvathy, S.D. Effectuation: Elements of entrepreneurial expertise. In *Effectuation*; Edward Elgar Publishing: Cheltenham, UK, 2008. [CrossRef]
98. Sarasvathy, S.D.; Dew, N. Entrepreneurial logics for a technology of foolishness. *Scand. J. Manag.* **2005**, *21*, 385–406. [CrossRef]
99. Dew, N.; Read, S.; Sarasvathy, S.D.; Wiltbank, R. Effectual versus predictive logics in entrepreneurial decision-making: Differences between experts and novices. *J. Bus. Ventur.* **2009**, *24*, 287–309. [CrossRef]
100. Fiet, J.O.; Norton, W.I.; Clouse, V.G.H. Search and discovery by repeatedly successful entrepreneurs. *Int. Small Bus. J. Res. Entrep.* **2013**, *31*, 890–913. [CrossRef]
101. Fisher, G. Effectuation, Causation, and Bricolage: A Behavioral Comparison of Emerging Theories in Entrepreneurship Research. *Entrep. Theory Pract.* **2012**, *36*, 1019–1051. [CrossRef]
102. Coviello, N.E.; Joseph, R.M. Creating Major Innovations with Customers: Insights from Small and Young Technology Firms. *J. Mark.* **2012**, *76*, 87–104. [CrossRef]
103. Fischer, E.; Reuber, A.R. Social interaction via new social media: (How) can interactions on Twitter affect effectual thinking and behavior? *J. Bus. Ventur.* **2011**, *26*, 1–18. [CrossRef]
104. Dew, N.; Read, S.; Sarasvathy, S.D.; Wiltbank, R. Outlines of a behavioral theory of the entrepreneurial firm. *J. Econ. Behav. Organ.* **2008**, *66*, 37–59. [CrossRef]
105. Matsuno, K.; Mentzer, J.T.; Özsomer, A. The Effects of Entrepreneurial Proclivity and Market Orientation on Business Performance. *J. Mark.* **2002**, *66*, 18–32. [CrossRef]
106. Robles, L.; Zárraga-Rodríguez, M. Key Competencies for Entrepreneurship. *Procedia Econ. Financ.* **2015**, *23*, 828–832. [CrossRef]
107. Coda, R.; Krakauer, P.V.d.C.; Berne, D.d.F. Are small business owners entrepreneurs? Exploring small business manager behavioral profiles in the São Paulo Metropolitan region. *RAUSP Manag. J.* **2018**, *53*, 152–163. [CrossRef]
108. Alegre, J.; Sengupta, K.; Lapiedra, R. Knowledge management and innovation performance in a high-tech SMEs industry. *Int. Small Bus. J. Res. Entrep.* **2013**, *31*, 454–470. [CrossRef]
109. Carroll, G.R.; Khessina, O.M. The Ecology of Entrepreneurship. In *Handbook of Entrepreneurship Research*; Springer: Boston, MA, USA, 2005; pp. 167–200. [CrossRef]
110. Gilinsky, A., Jr.; Newton, S.K.; Vega, R.F. Sustainability in the Global Wine Industry: Concepts and Cases. *Agric. Agric. Sci. Procedia* **2016**, *8*, 37–49. [CrossRef]
111. Gbejewoh, O.; Keesstra, S.; Blancquaert, E. The 3Ps (Profit, Planet, and People) of Sustainability amidst Climate Change: A South African Grape and Wine Perspective. *Sustainability* **2021**, *13*, 2910. [CrossRef]
112. Krämer, L. Planning for Climate and the Environment: The EU Green Deal. *J. Eur. Environ. Plan. Law* **2020**, *17*, 267–306. [CrossRef]
113. Mailly, F.; Hossard, L.; Barbier, J.-M.; Thiollet-Scholtus, M.; Gary, C. Quantifying the impact of crop protection practices on pesticide use in wine-growing systems. *Eur. J. Agron.* **2017**, *84*, 23–34. [CrossRef]
114. Dumitriu (Gabur), G.-D.; Teodosiu, C.; Cotea, V.V. Management of Pesticides from Vineyard to Wines: Focus on Wine Safety and Pesticides Removal by Emerging Technologies. In *Grapes and Wine*; IntechOpen: London, UK, 2022. [CrossRef]
115. Adner, R.; Zemsky, P. A Demand-Based Perspective on Sustainable Competitive Advantage. *Strateg. Manag. J.* **2006**, *27*, 215–239. [CrossRef]
116. del Brío, J.Á.; Junquera, B. A review of the literature on environmental innovation management in SMEs: Implications for public policies. *Technovation* **2003**, *23*, 939–948. [CrossRef]
117. Gladwin, T.N.; Kennelly, J.J.; Krause, T.-S. Shifting Paradigms for Sustainable Development: Implications for Management Theory and Research. *Acad. Manag. Rev.* **1995**, *20*, 874. [CrossRef] [PubMed]
118. Castro, G.M.-D. Exploring the market side of corporate environmentalism: Reputation, legitimacy and stakeholders' engagement. *Ind. Mark. Manag.* **2021**, *92*, 289–294. [CrossRef]
119. Hart, S.L. A Natural-Resource-Based View of the Firm. *Acad. Manag. Rev.* **1995**, *20*, 986. [CrossRef]
120. León-Soriano, R.; Muñoz-Torres, M.J.; Chalmeta-Rosaleñ, R. Methodology for sustainability strategic planning and management. *Ind. Manag. Data Syst.* **2010**, *110*, 249–268. [CrossRef]
121. Marshall, R.S.; Cordano, M.; Silverman, M. Exploring individual and institutional drivers of proactive environmentalism in the US Wine industry. *Bus. Strateg. Environ.* **2005**, *14*, 92–109. [CrossRef]
122. Seuneke, P.; Lans, T.; Wiskerke, J.S. Moving beyond entrepreneurial skills: Key factors driving entrepreneurial learning in multifunctional agriculture. *J. Rural Stud.* **2013**, *32*, 208–219. [CrossRef]
123. Dias, C.S.; Rodrigues, R.G.; Ferreira, J.J. What's new in the research on agricultural entrepreneurship? *J. Rural Stud.* **2019**, *65*, 99–115. [CrossRef]
124. McElwee, G. The enterprising farmer: A review of entrepreneurship in agriculture. *R. Agric. Soc. Engl. J.* **2006**, *167*, 66–75.
125. Torgerson, D. The uncertain quest for sustainability: Public discourse and the politics of environmentalism. In *Greening Environmental Policy*; Palgrave Macmillan: New York, NY, USA, 1995; pp. 3–20. [CrossRef]

126. Zaborek, P.; Mabrouk, A.K. The Role of Social and Environmental CSR in Shaping Purchase Intentions: Experimental Evidence from the Cosmetics Market. *Sustainability* **2025**, *17*, 1792. [CrossRef]
127. Brandi, C.; Schwab, J.; Berger, A.; Morin, J.-F. Do environmental provisions in trade agreements make exports from developing countries greener? *World Dev.* **2020**, *129*, 104899. [CrossRef]
128. Mehling, M.A.; van Asselt, H.; Das, K.; Droege, S.; Verkuijl, C. Designing Border Carbon Adjustments for Enhanced Climate Action. *Am. J. Int. Law* **2019**, *113*, 433–481. [CrossRef]
129. Condor, R. Entrepreneurship in agriculture: A literature review. *Int. J. Entrep. Small Bus.* **2020**, *40*, 516. [CrossRef]
130. Perez-Sanchez, D.; Barton, J.R.; Bower, D. Implementing environmental management in SMEs. *Corp. Soc. Responsib. Environ. Manag.* **2003**, *10*, 67–77. [CrossRef]
131. Shrivastava, P. The Role of Corporations in Achieving Ecological Sustainability. *Acad. Manag. Rev.* **1995**, *20*, 936. [CrossRef]
132. Sustainability and Sustainable Development—What is Sustainability and What Is Sustainable Development? *Ciruclar Ecol.* **2025**. Available online: https://circularecology.com/sustainability-and-sustainable-development.html (accessed on 16 July 2025).
133. Khajuria, A.; Matsui, T.; Machimura, T.; Morioka, T. Promoting Sustainability with Ecological, Economic and Social Dimensions in Developing Countries. *Chin. J. Popul. Resour. Environ.* **2009**, *7*, 15–18. [CrossRef]
134. Folke, C. Resilience: The emergence of a perspective for social–ecological systems analyses. *Glob. Environ. Change* **2006**, *16*, 253–267. [CrossRef]
135. Bérubé, N.; Donia, M.; Gagné, M.; Houlfort, N. Validation of the Satisfaction with Work Scale. 2007. Available online: https://www.researchgate.net/publication/277865862_Validation_of_the_satisfaction_with_work_scale (accessed on 7 October 2025).
136. Jiang, G.; Alvarado, R.; Murshed, M.; Tillaguango, B.; Toledo, E.; Méndez, P.; Isik, C. Effect of Agricultural Employment and Export Diversification Index on Environmental Pollution: Building the Agenda towards Sustainability. *Sustainability* **2022**, *14*, 677. [CrossRef]
137. Carrasco, I.; Castillo-Valero, J.S.; Córcoles, C.; Carchano, M. Greening Wine Exports? Changes in the Carbon Footprint of Spanish Wine Exports. *Int. J. Environ. Res. Public Health* **2021**, *18*, 9035. [CrossRef]
138. Gherghina, Ș.C.; Botezatu, M.A.; Hosszu, A.; Simionescu, L.N. Small and Medium-Sized Enterprises (SMEs): The Engine of Economic Growth through Investments and Innovation. *Sustainability* **2020**, *12*, 347. [CrossRef]
139. Zhao, Y.L.; Parry, M.E. Mental Models and Successful First-mover Entry Decisions: Empirical Evidence from Chinese Entrepreneurs. *J. Prod. Innov. Manag.* **2012**, *29*, 590–607. [CrossRef]
140. Schuhmacher, M.C.; Kuester, S.; Hultink, E.J. Appetizer or Main Course: Early Market vs. Majority Market Go-to-Market Strategies for Radical Innovations: Appetizer or Main Course. *J. Prod. Innov. Manag.* **2018**, *35*, 106–124. [CrossRef]
141. PWC. Innovation and Digital Transformation: How do European SMEs Perform? *2018*. Available online: https://www.pwc.nl/nl/assets/documents/pwc-europe-monitor-innovation-sme.pdf (accessed on 7 October 2025).
142. Costa, A.I.A.; Greco, M.; Grimaldi, M.; Cricelli, L.; Corvello, V. Inter-organisational innovation processes in the European food and drink industry. *Int. J. Manag. Enterp. Dev.* **2016**, *15*, 191. [CrossRef]
143. Porter, M.E.; van der Linde, C. Toward a New Conception of the Environment-Competitiveness Relationship. *J. Econ. Perspect.* **1995**, *9*, 97–118. [CrossRef]
144. Toften, K.; Hammervoll, T. International market selection and growth strategies for niche firms. *Int. J. Entrep. Innov. Manag.* **2011**, *13*, 282. [CrossRef]
145. Kotler, P. Reinventing Marketing to Manage the Environmental Imperative. *J. Mark.* **2011**, *75*, 132–135. [CrossRef]
146. Choi, S.; Feinberg, R.A. The LOHAS (Lifestyle of Health and Sustainability) Scale Development and Validation. *Sustainability* **2021**, *13*, 1598. [CrossRef]
147. Helmke, S.; Scherberich, J.U.; Uebel, M. LOHAS-Marketing: Strategie. 2016. Available online: https://www.amazon.in/LOHAS-Marketing-Strategie-Instrumente-Praxisbeispiele-German-ebook/dp/B019I7TGGY (accessed on 7 October 2025).
148. Darby, J.L.; Fugate, B.S.; Murray, J.B. The role of small and medium enterprise and family business distinctions in decision-making: Insights from the farm echelon. *Decis. Sci.* **2022**, *53*, 578–597. [CrossRef]
149. Somboonvechakarn, C.; Taiphapoon, T.; Anuntavoranich, P.; Sinthupinyo, S. Communicating innovation and sustainability in family businesses through successions. *Heliyon* **2022**, *8*, e11760. [CrossRef]
150. Sott, M.K.; Bender, M.S. The Role of Adaptive Leadership in Times of Crisis: A Systematic Review and Conceptual Framework. *Merits* **2025**, *5*, 2. [CrossRef]
151. Vagtborg, F.H. Corporate Responsiveness and Sustainability Transition: Insights from a Danish–Malaysian Palm Oil Multinational. In *Sustainable and Resilient Global Practices: Advances in Responsiveness and Adaptation*; Emerald Publishing Limited: Leeds, UK, 2024; pp. 149–191. [CrossRef]
152. Magnusson, T.; Werner, V. Conceptualisations of incumbent firms in sustainability transitions: Insights from organisation theory and a systematic literature review. *Bus. Strateg. Environ.* **2023**, *32*, 903–919. [CrossRef]
153. Dressler, M. Sustainability as Vehicle for Strategic Entrepreneurship: The German Wine Industry. In *Handbook of Research on Sustainability Challenges in the Wine Industry*; IGI Global: Hershey, PA, USA, 2023; pp. 95–120. [CrossRef]

154. Kruja-Demneri, A. Entrepreneurial Orientation, Synergy and Firm Performance in the Agribusiness Context: An Emerging Market Economy Perspective. *Cent. Eur. Bus. Rev.* **2020**, *9*, 56–75. [CrossRef]
155. Baron, R.A.; Tang, J. The role of entrepreneurs in firm-level innovation: Joint effects of positive affect, creativity, and environmental dynamism. *J. Bus. Ventur.* **2011**, *26*, 49–60. [CrossRef]
156. Callegari, B.; Nybakk, E. Schumpeterian theory and research on forestry innovation and entrepreneurship: The state of the art, issues and an agenda. *For. Policy Econ.* **2022**, *138*, 102720. [CrossRef]
157. Porter, M.E.; van der Linde, C. Green and Competitive: Ending the Stalemate. *Harv. Bus. Rev.* **1995**. Available online: https://hbr.org/1995/09/green-and-competitive-ending-the-stalemate (accessed on 15 July 2025).
158. Degato, D.D. Innovation and paths to social-ecological sustainability. *J. Innov. Sustain. RISUS* **2017**, *8*, 3. [CrossRef]
159. Hasan, M.J.; Rahman, M.S. Determinants of eco-innovation initiatives toward sustainability in manufacturing SMEs: Evidence from Bangladesh. *Heliyon* **2023**, *9*, e18102. [CrossRef]
160. Maier, D.; Maier, A.; Aşchilean, I.; Anastasiu, L.; Gavriș, O. The Relationship between Innovation and Sustainability: A Bibliometric Review of the Literature. *Sustainability* **2020**, *12*, 4083. [CrossRef]
161. Singh, A. Sustainability Practices in Business Operations. *Int. J. Res. Publ. Semin.* **2024**, *15*, 18–34. [CrossRef]
162. Cantele, S.; Valcozzena, S.; Campedelli, B. How do firm social practices produce social impacts? Investigating the role of social and long-term orientation. *J. Clean. Prod.* **2024**, *434*, 140020. [CrossRef]
163. Ignjatijević, S.; Tankosić, J.V.; Lekić, N.; Petrović, D.; Brkanlić, S.; Vapa, B.; Tomašević, V.; Puvača, N.; Prodanović, R.; Milojević, I. Agro-Environmental Practices and Business Performance in the Wine Sector. *Agriculture* **2022**, *12*, 239. [CrossRef]
164. Bandinelli, R.; Acuti, D.; Fani, V.; Bindi, B.; Aiello, G. Environmental practices in the wine industry: An overview of the Italian market. *Br. Food J.* **2020**, *122*, 1625–1646. [CrossRef]
165. Borrello, M.; Cembalo, L.; Vecchio, R. Consumers' acceptance of fungus resistant grapes: Future scenarios in sustainable winemaking. *J. Clean. Prod.* **2021**, *307*, 127318. [CrossRef]
166. Montaigne, E.; Coelho, A.; Zadmehran, S. A Comprehensive Economic Examination and Prospects on Innovation in New Grapevine Varieties Dealing with Global Warming and Fungal Diseases. *Sustainability* **2021**, *13*, 13254. [CrossRef]
167. Dressler, M. Meeting Market and Societal Ambitions with New Robust Grape Varietals: Sustainability, the Green Deal, and Wineries' Resilience. *Agriculture* **2024**, *14*, 2138. [CrossRef]
168. Gaur, A.; Sachin; Verma, S. Sustainable Development Transformation through European Green Deal. *J. Emerg. Technol. Innov. Res.* **2023**, *10*, 690–706. Available online: https://www.jetir.org/papers/JETIR2310398.pdf (accessed on 7 October 2025).
169. Prigoreanu, I.; Ungureanu, B.A.; Ungureanu, G.; Ignat, G. Analysis of Sustainable Energy and Environmental Policies in Agriculture in the EU Regarding the European Green Deal. *Energies* **2024**, *17*, 6428. [CrossRef]
170. Shabir, I.; Dash, K.K.; Dar, A.H.; Pandey, V.K.; Fayaz, U.; Srivastava, S. Carbon footprints evaluation for sustainable food processing system development: A comprehensive review. *Futur. Foods* **2023**, *7*, 100215. [CrossRef]
171. Hoque, A.; Padhiary, M.; Roy, S. Precision Agriculture Meets Sustainable Chemistry. In *Sustainable Chemistry and Pioneering Green Engineering Solutions*; IGI Global: Hershey, PA, USA, 2025; pp. 233–270. [CrossRef]
172. Bögel, P.M.; Augenstein, K.; Levin-Keitel, M.; Upham, P. An interdisciplinary perspective on scaling in transitions: Connecting actors and space. *Environ. Innov. Soc. Transit.* **2022**, *42*, 170–183. [CrossRef]
173. Davis, J. Role of Strategic Leadership in Fostering a Culture of Innovation within Organizations. *Int. J. Strateg. Manag.* **2024**, *3*, 1–13. [CrossRef]
174. Jardon, C.; Martínez-Cobas, X. Leadership and Organizational Culture in the Sustainability of Subsistence Small Businesses: An Intellectual Capital Based View. *Sustainability* **2019**, *11*, 3491. [CrossRef]
175. Alemu, B.A. Cultivating a Culture of Sustainability: The Role of Organizational Values and Leadership in Driving Sustainable Practices. *Bus. Ethics Leadersh.* **2025**, *9*, 79–94. [CrossRef]
176. Ahsan, M.J.; Khawaja, S. Sustainable leadership impact on environmental performance: Exploring employee well-being, innovation, and organizational resilience. *Discov. Sustain.* **2024**, *5*, 317. [CrossRef]
177. Matalamäki, M.J. Effectuation, an emerging theory of entrepreneurship—Towards a mature stage of the development. *J. Small Bus. Enterp. Dev.* **2017**, *24*, 928–949. [CrossRef]