



# Critical Literature Review of the Innovation and Adaptation Strategies of SMEs Led by First- and Second-Generation Leaders

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**Abstract:** The paper offers a comprehensive and critical review of the literature on the innovative and adaptive behavior of small and medium-sized family businesses, with a particular focus on differences between first- and second-generation leaders in the Central and Eastern European (CEE) context. Drawing on the Resource-Based View (RBV), the Knowledge-Based View (KBV) and the dynamic capabilities framework, the review synthesizes theoretical and empirical contributions on decision-making, knowledge processes, financing structures and open-innovation networks. Using a structured literature review protocol, we identify, screen and analyze peer-reviewed studies published mainly between 2000 and mid-2024 in leading international databases. The synthesis reveals that the relationship between innovation and performance in SMEs is highly context-specific: founders tend to favor exploitative, path-dependent innovation directions, while successors are more inclined towards exploratory, digitally and environmentally oriented strategies. However, this greater openness is strongly conditioned by institutional and financial constraints, particularly in risk-averse CEE environments. Leadership quality, intergenerational knowledge transfer and absorption capacity rise as key mediating mechanisms, whereas regional intermediaries and platform-based ecosystems partly compensate for resource and capability gaps. The review makes three main contributions: (1) it clarifies how generational leadership interacts with resource constraints and institutional conditions in CEE family SMEs; (2) it develops a thematic synthesis across four critical domains - decision-making, knowledge sharing, financing and openness; and (3) it derives an agenda for future research and a set of practice- and policy-oriented implications for supporting digital and green transformation in family SMEs.

**Keywords:** Family SMEs; Generational Leadership; Innovation and Adaptation; CEE Economies; Structured Literature Review

## 1 Introduction

SMEs form the backbone of CEE economies, providing employment for millions and driving a substantial share of regional value added and export growth. Yet global competition, accelerating digitalization and mounting sustainability pressures force these firms to reconfigure their operating logics and innovation strategies. The generational change in SMEs is a priority issue in CEE countries today, as the founders of companies established during the entrepreneurial boom of the 1990s are reaching retirement age en masse. A crossroads has arrived for a significant proportion of SMEs in the CEE region, affecting hundreds of thousands of SMEs in these countries, while in Western Europe, the succession of SMEs has been taking place at a steady pace over the past decades. Among family-owned SMEs in the CEE economies, these pressures are overlaid with the challenges of intergenerational succession. Strategic decisions about innovation, market positioning and organizational adaptation are embedded in the value frameworks, risk attitudes and knowledge bases of different generations of leaders.

In first-generation family SMEs, decision-making is frequently intuitive, experience-based and strongly anchored in the founder's personal networks and technical expertise. This tends to favor incremental process improvements and conservative growth paths oriented towards stability and long-term survival. By contrast, second-generation leaders are typically more formally educated, more exposed to international practices and more open to professionalized management, digital tools and sustainability agendas. These differences in cognitive frames and role concepts are increasingly recognized as key determinants of how family SMEs respond to digital, environmental and geopolitical shocks.

At the same time, the acceptance and diffusion of digital and eco-innovations, as well as the adoption of open-innovation models, depend not only on leadership style but also on the institutional and financial environment. In the CEE region – characterized by bank-based financial systems, relatively shallow equity markets and persistent administrative burdens – family SMEs often face structural constraints when attempting to experiment with new technologies or business models. Understanding how these contextual features intersect with generational change is therefore essential.

The aim of this paper is to provide a critical rather than descriptive synthesis of the literature on innovation and adaptation in family SMEs led by first- and second-generation leaders, with a particular focus on CEE economies. Our main research questions are the following:

- How do first- and second-generation leaders differ in their innovation and adaptation logics in family SMEs?

- Through which mechanisms – decision-making, knowledge processes, financing, networks – do these generational differences affect innovation outcomes?
- In what ways does the CEE context shape or constrain these mechanisms compared with other regions?

To answer these questions, we employ a structured literature review (SLR) approach inspired by Snyder (2019) and Webster and Watson (2002). We systematically identify and analyze peer-reviewed studies that address innovation, adaptation and generational leadership in family SMEs, paying particular attention to CEE cases. Rather than compiling an exhaustive annotated bibliography, we pursue a thematic synthesis that highlights conceptual tensions, conflicting empirical results and unresolved debates.

The paper is organized as follows. Section 2 outlines the review design and methodology, including database selection, search strategy and inclusion/exclusion criteria. Section 3 presents the theoretical background, combining RBV/KBV, dynamic capabilities and ambidexterity with the CEE regional perspective. Section 4 offers a thematic synthesis of the empirical literature across four domains: decision-making, knowledge processes, financing constraints, and openness and networks. Section 5 discusses the integrative contribution of the review and articulates its added value relative to existing surveys. Section 6 derives practical and policy implications. Section 7 concludes by summarizing research gaps and outlining a future research agenda, followed by limitations.

## **2. Review Design and Methodology**

### **2.1. Review approach and research questions**

We adopt a structured literature review approach in order to ensure transparency, replicability and analytical depth. Following Snyder (2019), the review process is organized into four stages: (1) planning and scope definition; (2) search and selection; (3) coding and thematic synthesis; and (4) structuring and reporting the findings. The research questions guiding the review focus on the interplay between generational leadership, innovation strategies and contextual constraints in family SMEs, with particular emphasis on CEE economies.

The review combines elements of systematic and narrative reviews. While the search and selection procedures are systematic and rule-based, the synthesis is interpretive: rather than aggregating effect sizes, we focus on mechanisms, boundary conditions and explanatory tensions.

## 2.2. Search strategy and database selection

The literature search was carried out between March and June 2025 and updated with a focused scan in October 2025 to capture very recent contributions on digital transformation and green innovation in SMEs. To capture the multidisciplinary nature of the topic, we consulted four major databases: Web of Science Collection, Scopus, EconLit, Business Source Complete (EBSCO)

In addition, we manually screened key specialist journals in family business, small-business management and regional studies (e.g. Family Business Review, Journal of Family Business Strategy, Small Business Economics, Journal of Small Business Management, Regional Studies) and performed a backward and forward snowballing procedure on seminal articles (e.g. De Massis et al., 2013; Nason et al., 2019).

The core searching strings combined three sets of keywords:

1. **Firm type & ownership:** “family firm\*”, “family business\*”, “family SME\*”, “family-owned SME\*”
2. **Innovation & adaptation:** “innovation”, “innovative behaviour”, “digital\* transformation”, “eco-innovation”, “green innovation”, “adaptation”, “dynamic capabilities”, “open innovation”
3. **Generation & leadership:** “first generation”, “second generation”, “succession”, “successor”, “transgenerational”, “generational leadership”

To emphasise the regional focus of the review with respect to the importance of succession SMEs, we included additional filters using country and regional identifiers such as “Central and Eastern Europe”, “CEE”, “Visegrad”, and the names of specific CEE countries (Hungary, Poland, Czech Republic, Slovakia, Romania, Bulgaria, etc.) when assessing regional patterns.

### 2.3. Inclusion criteria

The initial search resulted in over 150 records then we applied the following **inclusion criteria**:

- Peer-reviewed journal articles or scholarly book chapters.
- Published between **2000 and mid-2024**, expanded with a small number of earlier seminal works retained for theoretical background (e.g. Barney, 1991; Grant, 1996).
- Empirical or conceptual studies explicitly addressing **family businesses or family-controlled SMEs**.
- A clear focus on **innovation, adaptation**, or related capabilities (digitalization, green innovation, open innovation, dynamic capabilities, ambidexterity).
- Studies that discuss **generational aspects** (first vs. later generation, succession, transgenerational orientation) or provide data disaggregated by generation, leadership cohort or family involvement.
- Studies that include **CEE countries** in their empirical scope or offer insights that can be meaningfully transferred to the CEE context.

Exclusion criteria were:

- Non-scholarly publications, practitioner reports or conference abstracts without full peer-reviewed papers.

- Studies focusing exclusively on large corporations or non-family firms without any identifiable family-business subset.
- Articles dealing with generic entrepreneurship or SME policy without an explicit link to innovation and adaptation in family firms.
- Purely descriptive case reports lacking analytical content relevant to generational differences.

After title and abstract screening, 65 articles were retained for full-text review. Applying the above criteria, we arrived at a final sample of 34 core studies, of which approximately one third explicitly discussed CEE cases or included CEE countries in a comparative design. In addition, around 20 conceptual and methodological contributions (e.g. on RBV, KBV, dynamic capabilities, ambidexterity and SLR methods) were used to frame the theoretical discussion.

## **2.4. Coding and thematic synthesis**

Each core study was coded along four main dimensions:

- **Contextual scope:** country/region (CEE vs. non-CEE), industry, firm size.
- **Generational focus:** first generation only, second or later generation, mixed or comparative.
- **Innovation domain:** product/process innovation, digital transformation, eco-innovation/green transition, organisational innovation, open innovation and networks.
- **Key mechanisms and outcomes:** decision-making style, knowledge sharing, financing and governance structures, network embeddedness, innovation outcomes (performance, growth, resilience).

Thematic coding followed an abductive logic: we started from theoretically informed categories (RBV/KBV, dynamic capabilities, ambidexterity) and iteratively refined these categories as recurrent patterns and tensions emerged from the empirical material. This process led to the identification of four cross-cutting themes which structure the Results section:

1. Decision-making characteristics of owner-managers.
2. Knowledge sharing and learning mechanisms.
3. Financing and structural constraints.
4. Openness, collaboration and ecosystem embeddedness.

To enhance transparency, **Table 1** summarises a selection of key studies that are repeatedly referenced in the synthesis, mainly indicating their regional scope, generational focus and main findings (Sætre & Van De Ven, 2021).

### 3. Theoretical Background

#### 3.1 RBV and KBV: Resources, knowledge and family-specific

The Resource-Based View (RBV) posits that sustainable competitive advantage stems from the possession and effective deployment of resources that are valuable, rare, inimitable and non-substitutable (Barney, 1991). In family-owned SMEs, such resources include specialised technological know-how, reputation and relational capital, and the founder's entrepreneurial experience and social networks. These assets can support innovation, but

they may also underpin conservative path dependencies when leaders prioritise preservation over renewal (Wierzbicka et al., 2022; Cioca et al., 2020).

The Knowledge-Based View (KBV) extends the RBV by placing knowledge at the centre of firm competitiveness (Grant, 1996). In SMEs, innovation often relies on tacit knowledge embedded in routines, intergenerational learning and close customer interaction (Scuotto et al., 2024; Urbaníková et al., 2020). In family businesses, knowledge transfer across generations can enable successors to recombine inherited experiential knowledge with new digital or eco-innovative practices (Holl et al., 2023). Yet poor intergenerational communication or rigid hierarchies may hinder such recombination (Zahra et al., 2007; Woodfield & Husted, 2017).

### **3.2. Dynamic capabilities and ambidexterity**

Dynamic capabilities theory emphasises the capacity of firms to sense opportunities and threats, seize them through investments and organisational changes, and reconfigure their resource base accordingly. For resource-constrained SMEs, such capabilities are neither automatic nor evenly distributed; they depend on leadership vision, learning routines and external support (Bouncken et al., 2022).

The exploration-exploitation ambidexterity literature is particularly relevant: SMEs must balance the search for new opportunities (exploration) with the refinement and extension of existing activities (exploitation) (O'Reilly et al., 2004). Given constrained resources, many SMEs default to exploitation, favouring incremental innovation with short-term, measurable benefits. Family firms may be especially prone to this logic due to socio-emotional wealth preservation and risk aversion (Zhang et al., 2024). However, when transformational leadership, strong knowledge processes and networked collaboration are present, family SMEs can achieve temporal or structural ambidexterity, combining renewal with continuity (Brunswick et al., 2015; Greco et al., 2019).

### **3.3. Leadership, succession and generational logics in family SMEs**

Succession in family firms is more than a technical transfer of ownership: it involves shifts in values, decision logics and governance structures. First-generation founders often embody charismatic, centralized leadership, with tight control over strategic decisions and strong attachment to the “founder’s legacy”. Second-generation leaders are frequently more formally educated and more open to external advice, institutionalised processes and professional management (Calabrò et al., 2018; Cesaroni et al., 2021). These differences can influence risk preferences, time horizons and openness towards digitalization and green innovation (Liu et al., 2025).

However, the empirical evidence is not one-sided. Some studies find that second-generation involvement increases innovation intensity, internationalization and strategic renewal; others identify

cases where successors, facing financial constraints or conservative stakeholder expectations, adopt risk-averse strategies that dampen green or radical innovation (Chen et al., 2023). This heterogeneity underscores the need for context-sensitive analysis (Downton et al., 1973).

### 3.4. Why CEE is a meaningful context for studying generational innovation

CEE economies provide a particularly illuminating context for studying generational differences in family SME innovation for at least three reasons.

First, many family SMEs in CEE are **relatively young**, often founded during the transition period of the 1990s or early 2000s. The first generation thus experienced radical systemic change, privatisation and market opening, while the emerging second generation has grown up in a more stable, EU-integrated environment. This creates distinct experiential profiles and mental models within the same firms.

Second, CEE countries share structural features of **collateral-intensive financial systems**, where SMEs often rely on internal funds and relationship lending. Persistent information asymmetries, high collateral requirements and administrative burdens constrain access to growth and innovation finance (Belas et al., 2017). EU and national innovation schemes exist but are frequently complex and bureaucratic, favouring better-capitalised or more networked firms.

Third, the **institutional fabric of innovation ecosystems** – universities, technology centres, clusters and intermediaries – has developed rapidly but unevenly. While some CEE regions host dynamic clusters and competence centres, others suffer from fragmented networks and limited absorptive capacity at the SME level (Lengyel et al., 2011). Family SMEs thus operate in an environment where the benefits of openness and collaboration are real but not equally accessible (Teece et al., 1997).

Taken together, these features make CEE an analytically rich setting for examining how generational leadership interacts with resource constraints, institutional support and market pressures in shaping innovation and adaptation trajectories.

## 4. Results: Thematic Literature Synthesis

The reviewed studies indicate that SMEs' innovation and adaptation are shaped by the interplay of resources and knowledge bases (RBV/KBV), dynamic capabilities and leadership logics. Succession in family SMEs emerges as a critical juncture in this interplay. Across contexts, four domains recur as decisive for understanding differences between first- and second-generation leaders: decision-making characteristics, knowledge and learning mechanisms, financing and structural constraints, and openness and networks. These generational differences are summarized in Table 1.

**Table 1. Illustrative key studies on generational differences, innovation and context**

| Author(s) | Year | Region/<br>Country | Generational<br>focus | Innovation/<br>Adaptation<br>focus | Insight<br>(condensed) |
|-----------|------|--------------------|-----------------------|------------------------------------|------------------------|
|           |      |                    |                       |                                    |                        |

|                  |      |                          |                      |                                      |  |
|------------------|------|--------------------------|----------------------|--------------------------------------|--|
| Belas et al.     | 2017 | Visegrad countries (CEE) | SMEs (incl. family)  | Financing constraints                | Financial constraints significantly hinder innovative SMEs in V4 countries, reinforcing conservative strategies.       |
| Cesaroni et al.  | 2021 | Italy                    | Founder vs successor | Innovation from founder to successor | Successors often professionalise and open up innovation, but path dependence remains strong.                           |
| Chen et al.      | 2023 | China                    | Second generation    | Green innovation                     | Second-generation involvement can reduce green innovation under specific financing and governance conditions.          |
| Civelek et al.   | 2020 | Pan-European incl. CEE   | SMEs                 | Open eco-innovation                  | KET-based networks and platforms help SMEs overcome capability gaps in green innovation.                               |
| De Massis et al. | 2013 | International            | Mixed                | Technological innovation             | Family firms show heterogeneous innovation patterns depending on governance and generation.                            |
| Hafeez et al.    | 2025 | International SMEs       | Not family-specific  | Digital transformation               | Knowledge-based view and dynamic capabilities explain SME digitalisation; relevant for successors' digital strategies. |

|                   |      |                |                              |                                      |   |
|-------------------|------|----------------|------------------------------|--------------------------------------|---|
| Scuotto et al.    | 2024 | European SMEs  | Family & non-family          | Knowledge processes & innovation     | Knowledge sharing and absorptive capacity are central mediators between resources and innovation outcomes.  |
| Urbaníková et al. | 2020 | Slovakia (CEE) | Not explicit but family SMEs | Innovation activities in family SMEs | Slovak family SMEs tend to prioritise incremental innovation; resource limits and risk aversion are strong. |

**4.1. Decision-making characteristics: intuitive heuristics versus data-driven approaches**

Founders of family SMEs often rely on **intuitive, experience-based decision-making**, grounded in personal knowledge of markets, customers and technologies. This style can be highly effective in turbulent early stages, enabling quick responses and frugal innovations. However, it typically favours projects with visible, short-term returns and clear operational benefits – process improvement, quality stabilisation, cost reduction – while more radical or exploratory initiatives are postponed or rejected due to perceived risk and uncertainty.

Second-generation leaders, by contrast, are more likely to use **formal planning tools, benchmarking information and digital dashboards**. They may also have greater exposure to international networks and professional advisers. This tends to increase openness towards digitalisation, servitisation and eco-innovation initiatives (Park et al., 2019; Yin et al., 2023). Yet empirical findings suggest that such openness is often moderated by family governance norms and the financing environment. In many CEE contexts, strong family risk aversion and the memory of previous crises limit the scope of experimentation even when successors are personally inclined towards innovation (Bharadwaj et al., 2013).

Critically, the literature warns against simplistic narratives that equate “second generation” with “more innovative”. In green innovation, for instance, recent large-sample evidence shows cases where second-generation involvement correlates with **lower** levels of green innovation, due to stricter financial discipline or conservative risk-management practices (Chen et al., 2023). This suggests that generational leadership interacts with broader governance, financing and market pressures rather than determining innovation outcomes on its own.

#### 4.2. Knowledge sharing, learning and intergenerational transfer

Knowledge processes are central to the innovation capacity of family SMEs. Founders often possess extensive tacit knowledge about production, customers and local networks. Yet this knowledge is frequently **under-codified** and transmitted informally through day-to-day interactions. In many CEE firms, explicit knowledge management systems remain underdeveloped, and training budgets are modest.

Studies on intergenerational knowledge transfer highlight both strengths and weaknesses. On the one hand, close family ties can facilitate rich, long-term mentoring relationships, enabling successors to internalize complex routines and relational norms. On the other hand, role ambiguity, authority conflicts and emotional tensions may hinder open dialogue and experimentation, especially when founders are reluctant to relinquish control or recognize the value of new digital or green competences brought in by the successor (Jabbour Al Maalouf et al., 2025).

Second-generation leaders tend to engage more actively with external knowledge sources - universities, consultants, digital communities, lead customers. This can enhance absorptive capacity and enable the integration of AI, data analytics and eco-innovative solutions. However, without complementary internal learning routines and supportive organizational culture, such external knowledge may remain peripheral or fail to translate into implemented innovations. In CEE contexts where formal R&D departments are rare in SMEs, the quality of intergenerational communication and the ability to codify and recombine knowledge become critical levers (Nieto et al., 2013).

#### 4.3. Financing and structural constraints: capital scarcity and risk aversion

Across the literature, **financing constraints** emerge as one of the most robust impediments to SME innovation, and this is particularly pronounced in CEE countries. Bank-based financial systems, high collateral requirements and limited risk capital availability push family SMEs towards self-financing, retained earnings and conservative debt policies (Belas et al., 2017). Innovation projects - especially digital and green transformations with uncertain payoffs - are often perceived as too risky relative to available collateral and cash-flow stability.

These structural conditions interact with generational leadership in non-trivial ways. Founders may have strong relational ties with local banks, but these relations are typically geared towards working capital and incremental capacity investments, not high-uncertainty innovation. Successors who wish to pursue digital or eco-innovation strategies often find that they must reframe financing narratives, build new relationships with public agencies or EU programmes, and justify investments to risk-averse family councils.

Studies indicate that during crisis periods, credit constraints disproportionately affect innovative SMEs, leading to postponed or scaled-down projects (Rosenbusch et al., 2011). In CEE regions with limited alternative finance, this reinforces a path-dependent emphasis on exploitation. Some authors argue that generational change can mitigate these constraints when successors are able to strategically leverage EU funds, regional development grants or private equity. Yet this presupposes sufficient financial literacy, administrative capacity and network access - conditions that are unevenly distributed.

#### **4.4. Innovation beyond boundaries: openness, networks and ecosystems**

Open innovation is often portrayed as a natural response to SMEs' resource and capability constraints. The literature on family SMEs confirms that external knowledge search and collaborative projects can enhance innovation performance but also stresses that the benefits of openness are contingent on governance, absorptive capacity and institutional supports (Stremersch et al., 2024).

For resource-constrained family SMEs, partnerships with suppliers, customers, universities and technology centres can provide access to specialized knowledge, testing facilities and new markets. Pan-European initiatives around key enabling technologies (KETs), including those involving CEE firms, show that platform-based ecosystems can accelerate eco-innovation and digital adoption by offering pre-validated solutions and support structures (Civelek et al., 2020).

However, over-extended or poorly governed openness can generate coordination costs, intellectual property concerns and dilution of focus. Some family firms limit collaboration due to fears of losing control or disclosing sensitive knowledge. In such cases, generational change may act as a trigger for reframing openness: successors are often more willing to participate in clusters, accelerators and cross-border projects, if governance arrangements preserve core family values and control.

In the CEE context, the spatial unevenness of innovation ecosystems is a key moderator. In regions with strong universities, incubators and clusters, family SMEs can tap into dense networks and public support instruments. Elsewhere, openness may be largely symbolic or depend on individual bridging actors. The literature thus suggests that generational leadership, openness and ecosystem quality jointly shape innovation trajectories.

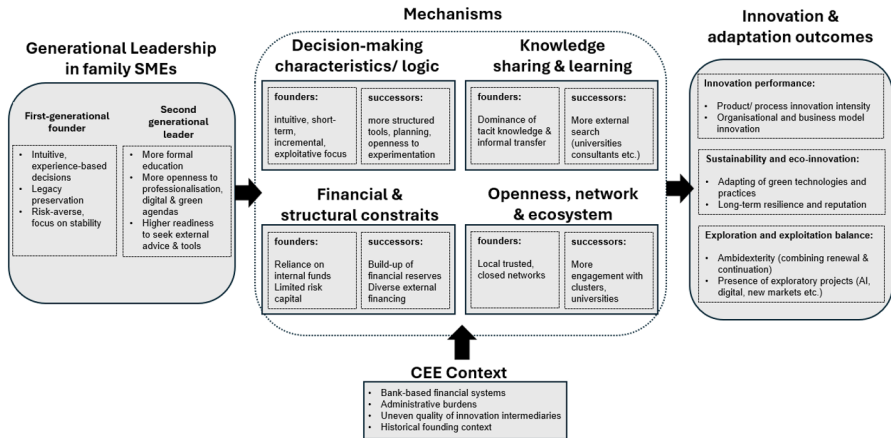
#### **5. Discussion: Integrative contribution and CEE-specific insights**

This review contributes to the literature in three different interconnected ways. Firstly, it integrates generational leadership with RBV/KBV and dynamic capabilities in a CEE setting. Rather than treating generation as a simple categorical variable, the review shows that first- and second-generation leaders differ in their cognitive frames, knowledge networks and financing approaches, which in turn influence how resources and capabilities are deployed for innovation. The CEE context – with its young family firms, bank-based finance and evolving innovation ecosystems – amplifies the visibility of these mechanisms.

Secondly, the review offers a thematic synthesis across four domains – decision-making, knowledge processes, financing and openness – highlighting the conditions under which successors' greater openness and digital orientation translate into actual innovation outcomes. We show that generational change does not automatically increase innovation; instead, its impact is mediated by knowledge transfer quality, absorptive capacity, ecosystem embeddedness and access to appropriate finance. This helps reconcile seemingly contradictory empirical findings in the literature.

Thirdly, by focusing on CEE economies, the review extends predominantly Western-centric family-business debates. It demonstrates that institutional and historical legacies – including the timing of firm founding, the maturity of financial markets and the density of innovation intermediaries – shape the translation of generational intentions into concrete innovations. The review therefore argues that

future research and policy design must take these context-specific mechanisms seriously rather than importing models from Western Europe or North America without adaptation.



*Figure 1. Conceptual framework of generational leadership and innovation outcomes in CEE family SMEs.*

The figure illustrates how first- and later-generation leadership influences innovation outcomes through four mechanisms (decision-making, knowledge and learning, financing and structural constraints, openness and networks), embedded in and moderated by the CEE institutional and financial context.

## 6. Managerial and Policy Implications

### 6.1. Implications for family SME leaders

For family-business owners and successors in CEE, the review suggests several actionable lessons:

- Invest in structured intergenerational knowledge transfer.** Founders should make tacit know-how explicit where possible, through systematic mentoring, documentation and joint problem-solving projects. Successors should actively seek to combine this knowledge with new digital and sustainability competencies rather than discarding it.

- **Balance intuition with data and experimentation.** First-generation leaders' intuitive heuristics can be complemented by successors' data-driven tools. Establishing small-scale experimentation routines - pilots, A/B tests, prototyping – can help reconcile risk aversion with the need for exploration.
- **Professionalise financing strategies.** Rather than relying solely on internal funds and traditional bank loans, family SMEs should build capacity to access EU programmes, development-bank instruments and where suitable, patient equity finance. Joint ventures or consortia can reduce individual firm risk when adopting new technologies.
- **Engage selectively with innovation ecosystems.** Participation in clusters, university partnerships or technology-platform projects can enhance access to knowledge and markets, but should be aligned with the firm's strategic focus. Clear governance agreements and trust-building mechanisms are essential to address concerns about control and knowledge leakage.

## 6.2. Implications for regional innovation agencies and policymakers

For policymakers and regional development actors, several implications follow:

- **Design targeted succession and scaling programmes.** Support instruments could explicitly address generational change, offering advisory services, leadership coaching and co-financed innovation projects that bring founders and successors together around digital and green transitions.
- **Reduce administrative and financial frictions.** Simplifying application procedures for innovation grants and improving transparency in evaluation can make public support more accessible to smaller family SMEs. Collateral-light financing instruments and guarantee schemes can partially offset banks' risk aversion.
- **Strengthen intermediaries and competence centres in CEE regions.** Well-resourced regional innovation agencies, KET centres and university-based labs can act as bridges between family SMEs and complex technological or regulatory environments (e.g. AI or green standards). Ensuring that such intermediaries are accessible beyond capital cities is particularly important in CEE.
- **Encourage network-based learning across generations.** Peer-learning programmes, where successors from different family firms share experiences on digitalisation or eco-innovation, can complement formal support schemes and build trust in more open innovation models.

## 6.3 Conclusions and Future Research Directions

This review has examined how first- and second-generation leaders in family SMEs design and implement innovation and adaptation strategies, with a particular emphasis on CEE economies. Using a structured review methodology, we synthesised findings from 68 core studies and additional

conceptual contributions, organising them around four domains: decision-making, knowledge processes, financing constraints and openness and networks.

The evidence suggests that first-generation founders tend to emphasise exploitation-oriented innovations that reinforce existing capabilities and relationships, while successors are generally more open to exploration, especially in digital and eco-innovation domains. However, this generational pattern is strongly moderated by the quality of intergenerational knowledge transfer, the availability of finance, institutional support and the maturity of innovation ecosystems. In some contexts, second-generation involvement may even dampen green innovation when conservative financial logics and risk-management concerns prevail.

For CEE family SMEs, the combination of young firm age, bank-based finance and developing innovation infrastructures creates both opportunities and constraints. Generational change can serve as a lever for professionalisation and openness, but only when accompanied by enhanced absorptive capacity, access to networks and supportive policy frameworks.

Based on the synthesis, we identify three promising directions for future research:

1. **Causal identification of generational effects.** More longitudinal and quasi-experimental designs are needed to disentangle generational influence from firm age, size, industry and macroeconomic conditions. Multi-country CEE studies could clarify how institutional variance shapes these effects.
2. **Micro-mechanisms of digital, AI and eco-innovation in family SMEs.** Detailed process studies could explore how successors introduce AI tools, green technologies or platform-based business models into founder-centric organisations, including resistance, learning and capability-building dynamics (Jabbour Al Maalouf et al., 2025).
3. **Ecosystem architectures and intermediaries in CEE.** There is room for in-depth analysis of how regional intermediaries, clusters and KET centres co-create innovation projects with family SMEs, and how governance arrangements can align family control with open collaboration.

By addressing these gaps, future research can move beyond broad claims about “conservative founders” and “innovative successors”, offering more nuanced, context-aware explanations and informing more effective support strategies.

## 7. Limitations

While this review provides a systematic synthesis of theoretical and empirical contributions, it is subject to several limitations. First, it relies on published, mainly English-language literature, which may under-represent locally disseminated CEE studies and practitioner knowledge. Second, heterogeneity in research designs, operationalization of “generation”, and measurement of innovation outcomes make direct comparison difficult and preclude meta-analytic aggregation. Third, the review captures a dynamic field at a particular moment; new developments in AI, green regulation and

financial instruments may quickly alter the opportunity structures faced by family SMEs in CEE. Future work could combine systematic review methods with primary empirical research to validate and refine the mechanisms proposed here.

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