

THE ROLE OF ENTREPRENEURSHIP EDUCATION IN PREPARING DIGITAL-READY SUCCESSORS FOR SUSTAINABLE FAMILY BUSINESS SUCCESSION THROUGH ARTIFICIAL INTELLIGENCE ADOPTION

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ABSTRACT

The rapid advancement of Artificial Intelligence (AI) and digital transformation has reshaped business models worldwide, including family-owned enterprises. Family businesses in Indonesia face unique challenges in ensuring sustainability through generational succession while adapting to technological change. This study aims to examine the strategic role of entrepreneurship education in preparing the next generation of family business successors through the integration of AI adoption and digital literacy. Using a systematic literature review approach, this study analyzed 10 years of publications (2015–2025) from databases such as Emerald Insight, ScienceDirect, and Google Scholar. The findings reveal that AI and digital literacy play a pivotal role in maintaining family business continuity by fostering innovation, data-driven decision-making, and intergenerational collaboration. Entrepreneurship education serves as a catalyst that bridges the generational gap by embedding technological awareness, experiential learning, and AI-based pedagogical tools into its curriculum. The synthesis suggests that sustainable family business succession requires a holistic combination of entrepreneurial education, digital literacy enhancement, and readiness for AI integration. This integration is crucial to strengthen Indonesia's competitiveness and family business resilience in the era of digital disruption.

Key words: Entrepreneurship Education, Family Businesses, Business Succession, Digital literacy, AI Adoption

INTRODUCTION

Family businesses exhibit distinctive characteristics compared to non-family businesses, and family businesses are very important to the global economy (Soares et al., 2021). The uniqueness of family businesses lies in how the succession process influences the vision and characteristics of potential successors (Porfirio et al., 2020). However, the sustainability of family businesses remains a major challenge, especially in the face of intergenerational succession, which is often poorly planned. Research shows that only about 30% of family businesses survive to the second generation, and less than 15% reach the third generation (Poza & Daugherty, 2013). In family businesses, the most fundamental premise is that human resources offer valuable experience and perform well (Soares et al., 2021). Therefore, entrepreneurship education plays an important role in developing managerial competencies, especially in terms of new training methods (Almeida et al., 2019). This means that the perceived value of entrepreneurship education will be based on individual involvement in learning programs (Jones et al., 2017).

In the context of the 4.0 industrial revolution, according to Netguru AI adoption statistics 2025, around 78% of organizations now use AI in at least one business function, and a Family, Privately-Owned and Owner-Managed Business Survey (Armstrong Watson, 2024) found that around 11% of family businesses already use AI. This means that digital transformation and the integration of smart technologies such as Artificial Intelligence (AI) have become key drivers of change in business models, including family businesses. The application of AI offers great opportunities in operational efficiency, data-driven decision making, and service and product innovation. However, the implementation of AI provides great opportunities to improve operational efficiency, data-driven decision making, and service innovation, but it also requires a high level of digital literacy, especially for the younger generation who are projected to become business leaders in the future (Lannon, Lyons & O'Connor, 2023; Atienza-Barba et al., 2025).

Regarding entrepreneurship education for family business succession by adopting AI and digital literacy, a review of relevant literature found no research focusing on this topic. Previous studies have only covered entrepreneurship education, family business succession, and AI technology in family businesses, but not all three topics in relation to each other. This means that there has not been much research that holistically integrates these three aspects, namely how entrepreneurship education can be positioned as a strategic foundation in preparing the next generation of family businesses to be able to adopt AI and have strong digital literacy in the context of succession. In fact, the challenges of succession in the digital era are not only about ownership transition, but also about readiness to lead in a highly digitized business world.

Therefore, this study aims to discuss the role of entrepreneurship education in preparing for family business succession by adopting AI and digital literacy. The main focus is on how entrepreneurship education can be

designed or adapted to not only shape entrepreneurial character, but also improve the digital capabilities of the younger generation in the context of family business succession.

METHOD

This study employs a systematic literature review (SLR) approach to comprehensively examine the intersection between entrepreneurship education, family business succession, Artificial Intelligence (AI) adoption, and digital literacy. A systematic literature review was selected because the objective of this research is to synthesize and critically evaluate existing scholarly evidence in order to develop an integrated conceptual understanding of how entrepreneurship education can support AI-driven digital readiness within family business succession contexts. Unlike narrative reviews, the SLR approach follows a structured and replicable process to minimize bias and enhance analytical rigor.

The literature search was conducted using major international academic databases, including Emerald Insight, ScienceDirect, and Google Scholar. These platforms were selected due to their broad coverage of peer-reviewed journals in management, entrepreneurship, technology adoption, and family business research. Keywords and search combinations included “family business succession,” “entrepreneurship education,” “digital literacy,” “AI adoption,” “artificial intelligence in SMEs,” and “intergenerational leadership.” Boolean operators (AND, OR) were applied to refine search results and ensure relevance.

The inclusion criteria were defined as follows: (1) articles published between 2015 and 2025 to ensure contemporary relevance in the digital transformation era; (2) peer-reviewed journal articles, conference proceedings, and scholarly book chapters; (3) studies written in English; and (4) research addressing at least two of the following themes: entrepreneurship education, family business succession, AI adoption, or digital literacy. Articles focusing exclusively on large corporations without relevance to SMEs or family enterprises were excluded. After screening abstracts and removing duplicates, selected articles were assessed for conceptual alignment and methodological quality.

The review process followed four systematic stages: identification, screening, eligibility assessment, and synthesis. In the identification stage, a broad pool of literature was collected. During screening, abstracts and keywords were reviewed to determine relevance. The eligibility stage involved a full-text assessment to ensure theoretical and contextual alignment with the study’s objectives. Finally, the synthesis stage involved thematic coding and cross-study comparison.

Thematic analysis was employed to identify recurring concepts, relational patterns, and theoretical gaps across the selected literature. Specifically, the analysis focused on: (1) the role of entrepreneurship education in developing managerial and digital competencies; (2) the integration of AI and digital literacy in SME and family business contexts; and (3) succession readiness in digitally transforming environments. Through comparative analysis, the study identified conceptual overlaps and underexplored intersections among these domains.

By synthesizing findings across these thematic areas, this study constructs a conceptual framework that positions entrepreneurship education as a strategic enabler of digital transformation readiness in family business succession. The systematic review design ensures analytical transparency while providing a robust theoretical foundation for future empirical research.

RESULTS AND DISCUSSION

The development of digital technology and artificial intelligence (AI) has changed the business paradigm, including in the context of family businesses. Entrepreneurship education in the digital era is expected to not only shape innovative abilities, but also equip the next generation of family businesses with digital literacy and readiness to adopt new technologies. Based on a systematic review of several selected scientific articles from reputable journals such as the *Journal of Family Business Management* and other international sources, a thematic overview of the role of entrepreneurship education, digital literacy, and AI adoption in strengthening the sustainability of family businesses was obtained.

Relevant literature findings are presented in the table below:

Table 1. Results of Systematic Literature Review

No	Title & Year	Author(s)	Study Focus	Method/ Design	Main Results/Findings	Source
1	<i>Generation AI and Family Business: A Perspective Article</i> (2023)	Lannon, Lyons & O’Connor	Highlighting the emergence of the “AI Generation” in family businesses and	Conceptual Study (perspective article)	Family businesses remain skeptical of AI, but the younger generation has	<i>Journal of Family Business Management</i> , 14(3)

			their role in driving digital transformation		great potential to integrate it as a sustainability strategy.	
2	<i>The Family Business in the Digital Era: Advancing Towards Artificial Intelligence</i> (2025)	Atienza-Barba et al.	Analysis of the shift of family businesses towards the digital era and the role of AI as a catalyst for innovation.	Systematic Review	Digital literacy and a culture of innovation are key factors in enabling family businesses to implement AI effectively.	<i>Journal of Family Business Management</i>
3	<i>A Tale of Two Universities: Graduates' Perceived Value of Entrepreneurship Education</i> (2017)	Jones et al.	The value of entrepreneurship education in preparing students for the business world.	Mixed Methods	Entrepreneurship education is effective when it is oriented towards practice, reflection, and interactive digital learning.	<i>Education + Training</i>
5	<i>Technology Adoption in Mediating the Effect of Leadership Succession on Family Business Sustainability in West Sumatra</i> (2023)	Kamener et al.	Family business studies in Indonesia: the role of technology adoption in leadership succession.	Quantitative	Technology adoption mediates the relationship between leadership succession and family business continuity.	<i>KnE Social Sciences</i>

Based on the results of a systematic literature review obtained in Table 1, it can be concluded that Artificial Intelligence (AI) and digital literacy play a central role in strengthening the sustainability of family businesses in the digital era. Both are not merely operational tools, but have developed into the main foundations of generational transformation and family business innovation. This transformation is marked by a shift in the role of the younger generation, known as Generation AI, a group of successors who have grown up in a digital environment and are more adaptable to technological changes.

Lannon et al. (2023) highlight that although most family businesses still show skepticism towards the application of new technologies, the younger generation has great potential as a driving force for innovation. The difference in mindset between the older, conventionally-oriented generation and the new, digitally-savvy generation creates a gap in terms of technology acceptance and data-driven decision making. Therefore, entrepreneurship education plays an important role in bridging the gap between generations by instilling technological awareness while maintaining the core values that define the family business. Technology-based entrepreneurship learning can become a space for intergenerational dialogue, encouraging collaboration and building the digital readiness of the next generation of family businesses.

The findings of Atienza-Barba et al. (2025) reinforce this view by showing that digital literacy is a prerequisite for the successful adoption of AI in family businesses. Digital literacy encompasses not only the technical ability to operate digital devices, but also a strategic understanding of the impact, ethics, and security of technology in business decision-making. Family businesses with high levels of digital literacy tend to be better able to leverage AI for market analysis, financial management, and product innovation. Thus, digital literacy is not only a tool for technological transformation, but also a bridge between the traditional heritage of family businesses and modern, future-oriented innovation.

Entrepreneurship education plays a catalytic role in strengthening the synergy between AI and digital literacy. Jones et al. (2017) emphasize that the effectiveness of entrepreneurship education greatly depends on the extent to which learning is able to integrate real-world practices, critical reflection, and interactive digital experiences. An entrepreneurship curriculum that utilizes technology such as digital business simulations and AI-based learning analytics can improve students' strategic decision-making skills and foster creativity and innovation.

Through this approach, entrepreneurship education is transformed from a mere academic space into an incubator for the competencies of the next generation of family businesses that are adaptive to technological changes and global economic dynamics.

In the Indonesian context, research by Kamener et al. (2023) provides empirical evidence that technology adoption plays an important mediating role in the relationship between leadership succession and family business sustainability. These findings indicate that the success of intergenerational transitions is not only determined by internal factors such as family values or managerial experience, but also by the extent to which family businesses are able to integrate technology to improve efficiency, productivity, and competitiveness. Although family businesses in Indonesia still face challenges such as limited digital infrastructure and competency gaps, the opportunities to optimize technology, including AI, are enormous, especially in the micro, small, and medium enterprise (MSME) sector, which is the backbone of the national economy.

From all the literature reviewed, it can be concluded that the sustainability of family businesses in the digital era requires a combination of technology-based entrepreneurship education, strengthening digital literacy, and the readiness of the next generation to adopt AI. These three aspects do not stand alone but reinforce each other in forming an innovative and highly competitive family business ecosystem. Theoretically, this synthesis broadens the understanding of how entrepreneurship education can be a strategic instrument in overcoming the digital divide between generations. Practically, these results emphasize the need for collaboration between educational institutions, government, and family business associations in developing digital capacity building programs and AI entrepreneurship training for prospective successors of family businesses.

With the strengthening of these three pillars, family businesses in Indonesia have great potential not only to survive, but also to transform into innovative, competitive, and sustainable entities in the face of future technology-based economic challenges.

CONCLUSION

The findings of this study confirm that entrepreneurship education holds a strategic and transformative role in preparing the next generation of family businesses to navigate the complexities of the digital era. In the context of accelerating technological disruption, succession is no longer limited to the transfer of ownership, authority, and managerial knowledge. Instead, it increasingly involves the transmission of digital competencies, innovation capabilities, and a technology-oriented mindset that enables successors to lead in data-driven and AI-integrated environments. Family business continuity in the twenty-first century depends not only on preserving legacy and relational values but also on developing digital adaptability and technological readiness.

The systematic literature review demonstrates that artificial intelligence (AI) and digital literacy function as foundational enablers of sustainable transformation. AI adoption enhances operational efficiency, predictive decision-making, strategic market analysis, and service innovation. However, AI implementation cannot occur effectively without adequate digital literacy. Digital literacy extends beyond technical proficiency; it includes strategic awareness, ethical consideration, cybersecurity understanding, and the ability to evaluate technological risks and opportunities. Therefore, entrepreneurship education must evolve to integrate these dimensions, equipping successors with both entrepreneurial mindset and technological competence.

Moreover, the review reveals that generational differences in technology acceptance often create tension within family firms. The older generation may prioritize stability and experiential knowledge, while the younger "Generation AI" tends to demonstrate greater openness to digital experimentation and innovation. Entrepreneurship education can serve as a bridge between these generational perspectives by creating structured learning environments that encourage dialogue, collaborative problem-solving, and shared technological understanding. Through experiential learning models, digital simulations, and AI-integrated curriculum design, entrepreneurship education becomes a platform for intergenerational alignment rather than division.

Despite the growing body of literature on entrepreneurship education, AI adoption, and family business succession, this study identifies a significant theoretical gap. Existing research often treats these domains independently, with limited efforts to integrate them into a cohesive framework. Few studies conceptualize entrepreneurship education as a strategic mechanism that directly facilitates AI readiness and digital transformation within succession planning. This fragmentation limits theoretical advancement and practical application. Accordingly, future research should focus on developing empirical models that test causal relationships among entrepreneurship education quality, digital literacy development, AI adoption intensity, and long-term family business sustainability. Measurement instruments capable of capturing these multidimensional interactions are also needed.

From a practical perspective, the findings highlight the importance of collaborative ecosystem development. Educational institutions should design AI-oriented entrepreneurship curricula that incorporate real-world digital business challenges. Governments can support digital literacy acceleration programs tailored to family-owned MSMEs. Family business associations may facilitate mentoring networks and intergenerational learning platforms to reduce resistance and enhance technological competence. Structured collaboration among these stakeholders will strengthen the adaptive capacity of family enterprises.

Ultimately, the sustainability of Indonesian family businesses in the digital age depends on the alignment of three interdependent pillars: entrepreneurship education, digital literacy, and AI adoption readiness. When these pillars are strategically integrated, family firms can transform from traditionally managed enterprises into resilient, innovative, and globally competitive organizations. Rather than perceiving digital disruption as a threat to legacy, family businesses can leverage technological advancement as a catalyst for renewal, ensuring continuity across generations while maintaining their core identity and values.

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