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EDITORIAL

EMBRACING A WIDE PERSPECTIVE ON ENTREPRENEURSHIP EDUCATION

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Abstract

Purpose: *This article explores the shift from a 'narrow' to a 'wide' conceptualization of Entrepreneurship Education, emphasizing its role in fostering entrepreneurial mindsets beyond business creation. It discusses key challenges in evaluating 'wide' Entrepreneurship Education programs, integrating technology, and engaging students.*

Design/methodology/approach: *The study is based on a review of contemporary Entrepreneurship Education literature, highlighting evolving theoretical frameworks, performance evaluation methods, and technological integration in Entrepreneurship Education programs.*

Findings: *The transition to 'wide' Entrepreneurship Education requires new assessment methodologies, pedagogical innovations, and adaptive educational strategies. Traditional business-centric evaluation frameworks are insufficient for measuring mindset development and long-term impacts. Technology plays a dual role, both enhancing and challenging Entrepreneurial Education implementation. Additionally, social values and global challenges can serve as entry points to engage students in Entrepreneurship Education programs.*

Practical and social implications: *A broader Entrepreneurship Education approach can better equip students with competencies applicable across various social and economic domains. Insights into effective program design, student engagement strategies, and assessment methods can inform educational policies and institutional practices. Moreover, integrating digital tools and aligning Entrepreneurial Education with societal challenges can enhance its accessibility and relevance.*

Originality of the study: *This paper contributes to the ongoing discourse on 'wide' Entrepreneurship Education by synthesizing recent scholarly perspectives and identifying critical areas for future research. It highlights the need for new theoretical models, educator training strategies, and comprehensive evaluation frameworks to support the evolution of Entrepreneurship Education in contemporary educational contexts.*

1. The scope of Entrepreneurship Education

Entrepreneurship Education (EE) is a quite recent research topic, even though not in its infancy. Literature on EE expanded consistently over the last decades, leading to a great proliferation of articles and books exploring this pedagogical path from various standpoints. The growing interest in the EE field led to two main consequences. On the one hand, significant contributions have been achieved that enrich knowledge on EE in terms of pedagogical approaches, learning techniques, and expected outcomes – to mention a few. On the other hand, though, the lack of a structured approach to analyze the topic ended up in highly fragmented research outputs (Fayolle, 2013; Tiberius & Weyland, 2023), without a cohesive and widely accepted theoretical foundation.

The growth of the EE field is evident not only in academic research but also in educational practice. As Hägg and Gabrielsson (2020) emphasize, EE has experienced exponential growth in recent years both in terms of scholarly investigation and classroom implementation (Bitetti & Huber, 2023). This expansion is manifested in the increasing number of EE-based courses, the establishment of dedicated Ph.D. programs, the development of specialized research centers, and the implementation of tailored programs at every educational level - from elementary schools to universities or even after (Kuratko, 2005).

Historically, early EE research was primarily focused on the goal of new venture creation. This perspective, which dominated EE studies for years, was grounded in a narrow understanding of EE, where the primary objective was to equip students with the skills necessary to start a business. Over time, scholars recognized the need to extend EE's objectives beyond venture creation, prompting a broader reflection on the general goals and dimensions of EE, including 'what' should be taught, 'why', and 'how', as well as by 'who' (Fayolle, 2013). Gabrielsson *et al*. (2020) provide a chronological framework to understand this shift, identifying three key phases in the evolution of EE research. The first phase, in the 1980s, was characterized by traditional pedagogical approaches that emphasized the relevance of course content and theoretical knowledge. The second phase, emerging in the 1990s, saw a shift towards problem-solving techniques and experiential learning methods. The third phase, from the 2000s onward, has placed greater emphasis on practical experiences, direct engagement with entrepreneurs, real-world case studies, and the development of individual entrepreneurial mindsets.

This progression mirrors a fundamental transformation in how EE is conceptualized: from a 'narrow' to a 'wide' perspective. The 'narrow' approach is focused on teaching technical skills and methodologies necessary for venture creation. This traditional perspective dominated early EE pro-

grams and research, shaping how scholars and practitioners approached the fundamental questions of 'what' to teach and 'why' (Lackéus, 2015). The emerging 'wide' perspective emphasizes the development of individual entrepreneurial mindset and capabilities, rather than solely focusing on venture creation outcomes. This shift is reflected in recent literature, which demonstrates increasing attention to psychological aspects of entrepreneurship. As noted by Shabbir *et al*. (2022), there is a clear transition from teaching methodologies to personal outcomes, including entrepreneurial intention, motivation, and mindset development. Similarly, Tiberius and Weyland (2023) identify two main areas in contemporary EE research: psychological aspects of entrepreneurship (including attitudes, motivation, and volition) and measurable entrepreneurial dimensions (such as behavior, skills, and business creation).

This evolution from 'narrow' to 'wide' conceptualization of EE has profound implications for all dimensions of EE - the 'what', 'why', 'how', and 'who'. Particularly, in the context of this 'wide' perspective, the 'how' dimension has emerged as a critical area of focus (Nikou *et al*., 2023). As Baggen *et al*. (2022:531) note, "in order to make entrepreneurship available to all, the 'wide' EE practice and research should focus on the 'how' question (the design) thereby facilitating the development, implementation, and comparison of 'wide' EE programs across disciplines and educational levels."

This reconceptualization of EE from a 'wide' perspective is particularly relevant in current times, characterized by profound changes and continuous dynamism that create a complex context where educational needs are necessarily reassessed. Understanding the 'how' to effectively deliver EE programs that align with this 'wide' perspective - while simultaneously reconsidering the 'what', 'why', and 'who' dimensions - represents a crucial challenge for contemporary EE.

2. From a 'narrow' to a 'wide' perspective on Entrepreneurship Education

What does it mean to develop a 'wide' approach to EE? The field of EE has undergone significant transformation in recent years, shifting from a narrow focus on business creation to a broader perspective encompassing entrepreneurial mindset development. This evolution reflects a growing recognition that entrepreneurial capabilities extend beyond venture creation to include broader competencies valuable across various contexts.

The concept of 'wide' EE, introduced by Lackéus (2015) and supported by subsequent researchers like Baggen *et al*. (2022), represents a paradigm shift from 'becoming entrepreneurs' to 'becoming entrepreneurial'. In particular, the 'narrow' definition of entrepreneurship embraces as key concepts "opportunity identification, business development, self-employ-

ment, venture creation and growth" (Lackéus, 2015:9); this is what we can consider as 'becoming entrepreneurs'. At the same time, a 'wide' definition of entrepreneurship refers to 'becoming entrepreneurial', that is stimulating an entrepreneurial mindset and building on "personal development, creativity, self-reliance, initiative taking, action orientation" (Lackéus, 2015:9). Although many scholars acknowledge that the decision to launch a new venture often stems from an individual's entrepreneurial mindset, having such a mindset does not necessarily translate into entrepreneurial intention and the creation of a new business. An entrepreneurial mindset is described as a way of thinking that enables individuals to generate value by identifying and seizing opportunities, making decisions with limited information, and navigating uncertainty (Daspit *et al*., 2023:27; Shepherd *et al*, 2010:62). This broader conceptualization aligns with the European Union's 'EntreComp' framework, which offers a holistic view of entrepreneurship. From this perspective, entrepreneurship extends beyond the business world and can be regarded as a 'transversal key competence', pertaining to all spheres of an individual's life (Bacigalupo *et al*., 2016). It can be understood as a mental approach characterized by the ability to take initiative and autonomously manage one's learning path and professional development, elements that are particularly relevant in today's context of high uncertainty and complexity (Baggen *et al*., 2022; Carpenter & Wilson, 2022; Loi & Fayolle, 2021).

Depending on the conceptualization of entrepreneurship that educators have in mind, a variety of educational approaches should be applied in EE, based on differentiated teaching methods and design of programs (Mwasalwiba, 2010).

A 'wide' approach to entrepreneurship acknowledges that EE's value extends beyond fostering new business creation to encompass personal development and social impact. It recognizes entrepreneurship as a transformative experience that develops transferable skills applicable across various life contexts.

In this expanded view of EE, being entrepreneurial means developing a mindset oriented toward value creation, which can manifest in economic, social, cultural, and ecological domains: "Infusing value creation experiences across the entire curriculum can be one of the most important contributions entrepreneurship can make to education in the future" (Lackéus, 2015:16). The development of an entrepreneurial mindset through inclusive educational programs enables individuals to approach entrepreneurship as a daily practice, enriching their lives and actively contributing to addressing societal challenges (Baggen *et al*., 2022; Blenker *et al*., 2011; Lackéus, 2015, 2020).

3. Indeed, 'How to' design Entrepreneurship Education programs in a 'wide' perspective?

The adoption of a 'wide' perspective in EE requires a fundamental rethinking of how EE programs are structured, who should deliver them, following which type of educational methods (ranging from traditional lectures to technical-pragmatic or participating approaches) and which competencies educators should develop - essentially addressing the 'how' component of EE. While the existing literature exploring these aspects remains relatively limited, available contributions propose various methodological approaches and frameworks that could address the need to investigate the individual dimension of entrepreneurship focused on value creation.

Contemporary entrepreneurship literature encompasses various frameworks for value creation processes. Recent theoretical developments have shifted from traditional venture creation models toward broader models based on value creation, making them more applicable in general educational contexts. A significant theoretical perspective in this domain is effectuation theory (Sarasvathy, 2001) which conceptualizes entrepreneurial decision-making as an iterative process characterized by continuous refinement of decisions without predetermined outcomes. Complementary methodological approaches, including the Business Model Canvas (Osterwalder & Pigneur, 2010) or the Design Thinking approach (Brown, 2008), provide practical frameworks that emphasize creativity, collaborative work, and strategic planning in the entrepreneurial process, making them particularly suitable for comprehensive EE programs.

The transition to 'wide' EE requires abandoning traditional transmissive educational models in favor of more dynamic, experiential approaches. This shift poses challenges for programs design and delivery, particularly given the unpredictable, complex, and iterative nature of entrepreneurial value creation (Baggen *et al.*, 2022). Despite the growing interest toward 'wide' EE approaches, fragmentation is visible in the available studies. Several aspects of the 'how' dimension of EE require attention and represent promising research topics that could help sharpen the broader EE debate. Although these open questions have persisted in entrepreneurship literature for some time, they still represent a blue ocean for research, as there remains substantial scope for clarification and development in this field. In consideration of the state of the art on EE literature and the ongoing challenges related to such a research topic, we believe that there are great opportunities for EE researchers to further contribute to this theme. The following sections outline key unresolved issues in EE that present valuable opportunities for future research directions.

3.1 Converging on a theoretical framework for 'wide' Entrepreneurship Education

Regarding theoretical frameworks for designing EE programs that fully embrace a 'wide' perspective, there are several open issues that offer interesting opportunities to enrich the existing debate. For instance, there is a lack of theoretical frameworks that systematically integrate the role of context in EE design, which can assume varied meanings. Thomassen *et al*. (2020) emphasize the importance of considering context in the analysis of EE, proposing a three-level categorization. The macro-level of context is defined by national and international factors, including policy, economy, and culture. The meso-level pertains to regional and institutional factors, primarily university strategies and local ecosystems. Finally, the micro-level focuses on individual and course-related factors, such as pedagogy, teaching methods, and educator-student interactions. In general terms, the field needs coherent theoretical frameworks that integrate general education principles with 'wide' EE philosophy (Mohamed & Ali, 2021). These frameworks should guide educators in structuring comprehensive programs that develop entrepreneurial mindsets rather than merely technical business skills.

Baggen *et al*. (2022) propose a framework for developing EE programs based on a 'wide' conceptualization through the identification of eleven design principles, which illustrate the entrepreneurial process, its associated tasks, the context, and the relationships to be developed during an EE program. Although the framework proposed by the authors is highly valuable in better understanding how to address the 'how' dimension of EE, there is still a lack of consensus regarding its validity and adoption. Therefore, there remains room for contribution to this topic. Specifically, key questions remain to be addressed in detail, such as: how can faculty be guided in structuring 'wide' EE (Tiberius & Weyland, 2023)? Which theoretical approaches best support this process?

3.2 Redesigning performance metrics for 'wide' Entrepreneurship Education programs

The evaluation of 'wide' EE programs presents unique challenges. Traditional metrics, focused on entrepreneurial intention and business creation outcomes, are insufficient and inappropriate for measuring the development of entrepreneurial competencies. As Nabi *et al*. (2017) observe, many studies rely on short-term indicators, potentially missing significant long-term impacts. Fayolle and Gailly (2015) emphasize that EE's effects often manifest over extended periods, necessitating longitudinal assess-

ment approaches. Evaluating the effectiveness of EE programs is a complex issue and a highly debated topic in literature.

For a long time, the dominant evaluation framework has been Kirkpatrick's (1959) four-level model, which assesses EE effectiveness based on: reactions - the participants' perceptions of the program (subjects, instructors, agenda, etc.); learning - the skills acquired, techniques learned, and changes in attitudes; behavior - the application of acquired skills in daily activities and professional behavior; and results - the consequences of behavioral changes in terms of activities, performance, and productivity. Measuring these aspects is particularly challenging, especially concerning the latter two dimensions, which remain underexplored in literature. Fayolle and Gailly (2015) propose an initial approach to analyzing EE program performance involving a comparison of students' perceptions immediately after the program and in the medium term. However, this approach has limitations and underscores the necessity for further research to determine more precise and universally applicable metrics.

As highlighted by Tiberius and Weyland (2023), it is essential to 'open the black box of EE' to analyze its objectives (how to implement EE in practice?), content (what exactly should be taught?), teaching approaches and methods (how should it be taught?), and, most critically, how to universally decode performance evaluation processes (how should EE program success be measured?).

Such a need further amplifies when adopting a 'wide' EE perspective, aiming at the development of an entrepreneurial mindset. As Daspit *et al*. (2023:37) note, in pedagogical studies on EE qualitative methods or survey-based methods are often used, but a clear and commonly accepted method for measuring the entrepreneurial mindset does not exist and further research is encouraged to enrich knowledge on this topic. Future research lines should therefore aim to develop more valid and reliable measurement methods and indicators that capture the broader impacts of 'wide' EE, including competency development, mindset changes, and long-term outcomes beyond business creation (Nabi *et al*., 2017). Several open questions remain in this sense. How can the effectiveness of educational approaches aimed at developing entrepreneurial competencies be evaluated? For instance, prior exposure to entrepreneurship experiences before participating in a program could negatively affect the program's effectiveness. In this regard, differentiated programs tailored to specific student profiles could be considered, but what criteria should be used to design such programs? How should they be structured? (Fayolle & Gailly, 2015). Furthermore, how does EE translate training and interventions into measurable outcomes? What variables mediate this effect? What is the long-term impact of EE? When is the most appropriate time to evaluate its results? (Loi & Fayolle, 2021). Addressing these questions is essential for refining EE

evaluation frameworks and enhancing their applicability across diverse educational and professional contexts.

3.3 Profiling educators as primary leaders of 'wide' Entrepreneurship Education

The evolution toward 'wide' EE raises questions about educator qualifications and development as well. Future research should examine what competencies educators need and how to develop them effectively. Indeed, educators are key figures in 'wide' EE since they dramatically contribute to the development of an entrepreneurial mindset in students (Nikou *et al*., 2023). As Fayolle (2013) notes, educators must master diverse topics ranging from entrepreneurship to pedagogy while handling complex subjects like mindset development, opportunity recognition, work-life balance, failure management, or emotional management.

Research examining educators' role in enhancing EE and its outcomes remains scarce. The importance of addressing teachers' understanding of EE through appropriate knowledge and tools for integrating entrepreneurial competencies into their teaching has been highlighted in the literature (Teerijoki & Murdock, 2014), yet empirical investigations on methods to enhance teachers' perception of EE are limited. While some research has identified positive correlations between EE effectiveness and factors such as teachers' creative capabilities (Wibowo & Saptono, 2018) and their entrepreneurial background (Diegoli & Gutierrez, 2018), other potentially significant teacher characteristics and competencies remain unexplored. As noted by Jones and Underwood (2017), educators' function as mediators of EE continues to represent a significant research gap, particularly regarding classroom interaction patterns and students' emotional engagement with EE.

The emergence of novel theoretical approaches guiding 'wide' EE program design raises fundamental questions about the optimal profile of educational figures to lead such programs and their required competencies. This brings forth several interconnected issues: what are effective approaches for faculty development, who should conduct such training, and what competencies should these trainers possess? Furthermore, Thomassen *et al*. (2020) underline the relevance of understanding what tools and frameworks can support educators in navigating and adapting to dynamic educational contexts.

3.4 Unveiling benefits and pitfalls of technological integration

The role of technology in 'wide' EE deserves particular attention, especially given the acceleration of online learning in post-COVID-19 times. Research could examine how digital tools can enhance or potentially hin-

der 'wide' EE objectives (Petrolo *et al*., 2023; Fayolle, 2013). Petrolo *et al*. (2023), in a study on methodologies and research approaches applied to online EE, pose several key questions for further investigation, including: which digital tools are most effective in fostering active student participation in online programs? What are the reactions of students and educators to the adoption of digital tools in EE programs? Which tools and theoretical approaches best support the digital transition of EE courses? Similarly, Sitaridis and Kitsios (2024), analyzing the intersection of digital entrepreneurship and EE, highlight the need to better understand how to design EE courses that effectively integrate emerging technologies such as artificial intelligence. They also emphasize the importance of identifying educational methodologies that enhance learning digital competency, creating more robust frameworks for measuring educational initiative outcomes in digital contexts, and supporting female and diverse entrepreneurship in digital settings.

Basically, a fundamental question to consider is whether new technologies - already playing a key role in general education - are an ally or an obstacle in rethinking EE programs from a 'wide' perspective. In this sense, open questions include: Which technological tools can help educators navigate and adapt to evolving contexts? How can educational practices be developed to reflect the complexity of the current digital and cultural landscape (Thomassen *et al*., 2020)?

3.5 Engaging students toward Entrepreneurship Education programs

Finally, a 'wide' conceptualization of EE refers to teaching students not only the practical tools to create a new business venture but also instilling or reinforcing in them an entrepreneurial mindset (Shabbir *et al*., 2022). However, in cases when students do not have an entrepreneurial mindset and do not expect to be interested in developing it, how can such students be engaged in EE programs aimed at generating such a mindset?

A final question, therefore, concerns how to attract students to EE and help them understand the importance of entrepreneurial competencies (mindset). A partial answer comes from the study by Lackéus (2015), which highlights how the growing student interest in EE programs offered by universities, even in a non-mandatory format, may be linked to the increasing prevalence of social values among younger generations. Many young students share a common desire to proactively contribute to solving so-called 'grand challenges' - societal issues that require urgent solutions, such as climate change or reducing social and economic inequalities (Youniss *et al*., 2002).

From this perspective, it may be strategic to promote EE programs that leverage entrepreneurial competencies as a tool for actively engaging in addressing these global challenges. However, while this is one possible ap-

proach to stimulating student interest in EE programs, are there any others? On which dimensions of EE programs should educators focus? Which aspects resonate most with students? Addressing these questions is crucial for designing more effective EE initiatives that align with the motivations and values of contemporary learners.

4. Conclusions

The transition from 'narrow' to 'wide' EE represents a significant evolution in how we conceptualize and deliver entrepreneurial learning. This shift demands new approaches to program design, assessment, and educator development. Future research must address these challenges while maintaining focus on the ultimate goal: supporting individuals in becoming capable of creating value across various contexts.

As the field continues to evolve, researchers and practitioners must collaborate to develop robust frameworks, effective assessment methods, and innovative pedagogical approaches that support this broader vision of EE. Only through such concerted efforts can we fully realize the potential of 'wide' EE to foster entrepreneurial mindsets and capabilities that benefit both individuals and society.

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THE EVOLUTION OF DIGITAL TRANSFORMATION IN SMES: EVIDENCE FROM AN ITALIAN CASE STUDY

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Abstract

Purpose. *This study aims to investigate the digital transformation (DT) of internationalizing SMEs from an evolutionary perspective, highlighting the factors that facilitate or impede this journey.*
Design/methodology/approach. *This study adopts a longitudinal single-case study methodology. Primary data were collected through semi-structured interviews with top management of an Italian internationalizing SME. To ensure comprehensive analysis, primary data was augmented by secondary sources, employing triangulation techniques. Subsequently, content analysis was carried out using Nvivo 14 software.*
Findings. *The study identifies the enabling and hindering factors of DT. The findings highlight the enabling role of digital dynamic capabilities to succeed in different DT stages. Adopting data-driven decision-making models is crucial to reduce environmental complexity and derive actionable insights to support business strategy. In addition, the findings reveal the evolution from an efficiency-centered to a differentiation-centered approach to achieve a more structured international positioning. Organizational inertia and cybersecurity risks represent the main hindering factors an SME must cope with in the initial and mature stages of DT. Ensuring effective knowledge management mechanisms is a prominent challenge throughout the DT journey.*
Practical and social implications*. The study is rich in theoretical and managerial implications. Theoretically, the study contributes to the evolutionary theory of DT of SMEs. From the managerial standpoint, this research offers valuable recommendations for managers to take advantage of positive factors and limit the ongoing downsides of the DT process.*
Originality of the study. *This study's originality lies in adopting an evolutionary perspective to observe the DT of SMEs. The relevance and significance of this case study are further enriched by the dense and SME-concentrated Italian landscape.*

1. Introduction

Digital transformation (DT) has required organizations to rethink how they operate, particularly in terms of organizational structure, business processes, strategy, and business models (Tan et al., 2015; Urbinati et al., 2020; Vial, 2019; Volberda et al., 2021). Adopting new technologies involves identifying new ways of doing business and creating value (Matarazzo et al., 2021; Verhoef et al., 2021).

Despite the existing body of literature mainly focusing on the integration of digital technologies within large corporations (Ghosh et al., 2022; Warner & Wäger, 2019), extant literature has recognized the peculiar characteristics of DT in SMEs, prompting interest in studying the factors influencing the various stages of their DT journey (Matarazzo et al., 2021; Soluk & Kammerlander, 2021).

SMEs contribute significantly to the economy worldwide, generating added value and employment. Specifically, in 2021, SMEs accounted for 99.8 percent of European enterprises and 65 percent of global employment (European Commission, 2022). Despite their significant economic contribution at the national and global levels, SMEs are particularly vulnerable to the challenges of the digital age (OECD, 2017; Pencarelli, 2022). Limited resources and expertise, coupled with potential limitations in staff capacity and technological adoption, can impede SMEs' DT efforts and undermine firm performance (Feliciano-Cestero et al., 2023; Sanguineti & Zucchella, 2022). Additionally, SMEs face concerns such as cybersecurity risks and data breaches (Vial, 2019). At the same time, characteristics such as flexibility and agility can facilitate easier technological adoption compared to the more structured processes in larger organizations (Troise et al., 2022; Vial, 2019).

Thus, DT presents SMEs with both opportunities and threats. While it can enhance their ability to compete internationally, adapt to changing market conditions, and ensure privacy and information security, it also exposes them to increased competitive pressure and requires robust cybersecurity measures (Buer et al., 2020; Feliciano-Cestero et al., 2023; Mitrovic et al., 2023; Straková et al., 2022; Zahoor et al., 2022).

DT is a multi-stage evolutionary process influenced, among other factors, by firm-level characteristics, the development of dynamic capabilities, and knowledge management (Garzoni et al., 2020; Matarazzo et al., 2021; Urbinati et al., 2020; Vial, 2019; Volberda et al., 2021; Zahoor et al., 2022). Studies examining the DT of SMEs from an evolutionary perspective are still rare in the literature (Marino-Romero et al., 2024). Embracing such an approach allows for a deeper understanding of the multifaceted dynamics during DT, shedding light on the main factors that enable or hinder SMEs' progress toward DT maturity.

Considering the complexity of DT and its various facets, this study aims to explore the key factors that enable or hinder the DT of SMEs throughout their evolutionary trajectory. Therefore, our study aims to answer the following research question:

What are the key factors influencing the DT of internationalizing SMEs at different stages of evolution?

This contribution is particularly valuable considering the critical role of SMEs' DT in maintaining their competitiveness in rapidly evolving and dynamic environments, where leveraging DT offers substantial growth opportunities (Matarazzo et al., 2021). To accomplish this research aim, the study examines the case of an Italian internationalizing SME in the sportswear sector from a longitudinal perspective, providing a detailed understanding of the transformational phenomenon. The Italian context is especially relevant due to the historic and prevalent nature of such organizations. Data from semi-structured interviews, supplemented by secondary data, were analyzed through a content analysis performed with Nvivo 14 software to identify potential links within the textual data.

In conclusion, the study aims to contribute to the theory on the evolution of SMEs' DT by offering managerial and policy recommendations to support and incentivize SMEs' digital transition.

The study continues with the literature review in Section 2 and the methodology in Section 3. Section 4 presents the main results, while Section 5 discusses the implications. The paper ends with conclusions, limitations, and future research areas in Section 6.

2. Literature review

DT evolves from the phases of digitization and digitalization within organizations (Verhoef et al., 2021). Progressing through these phases and approaching DT requires organizations to rethink their business strategy and undergo deep transformation (Correani et al., 2020; Garzella et al., 2020; Müller et al., 2021). DT is a complex challenge that demands new resources, advanced information processing capabilities (Li et al., 2022), and integration into digital networks (Verhoef et al., 2021). These factors, however, do not ensure DT success, as there is no single solution for DT (Kane et al., 2019).

Some authors, such as Kane et al. (2019), have studied DT from a process perspective, considering digital maturity and accumulated organizational knowledge. Organizations strive to increase their digital maturity over time by integrating new technologies into their business model and strategies (Jones et al., 2021; Nguyen et al., 2015; Wang, 2008).

The evolutionary path of DT in SMEs commonly begins with a greater

market and consumer orientation, leading to significant changes in business processes and models (Marino-Romero et al., 2024). The success of SME DT depends on several enabling and hindering factors, which influence the ability to retain a competitive advantage (Ramdani et al., 2022). When managed effectively, DT can enhance business performance in terms of profitability, growth, market value, social and environmental performance, consumer satisfaction, and agility (Kitchens et al., 2018; Matarazzo et al., 2021; Rialti et al., 2019).

Based on these premises, SMEs encounter enabling and hindering factors during the DT journey. The following sub-sections will be devoted to illustrating such key factors.

2.2 Enabling factors

The size characteristics of SMEs, which make them particularly flexible and agile, can facilitate DT by allowing easier adaptation to market dynamics and technological changes compared to larger organizations (Chan et al., 2019; Fletcher & Griffiths, 2020; Levy et al., 2001; Neirotti et al., 2017).

Digital skills are critical for accelerating DT by successfully incorporating technological innovations (Demeter et al., 2020; Zahra & George, 2002). Skills in big data analytics, for instance, enable organizations to perform detailed data analyses, providing insights into consumer preferences and market trends, improving forecasts, and reducing decision-making uncertainty (Kraus et al., 2019; Ferraris et al., 2019; McAfee et al., 2012; Park & Mithas, 2020). This availability of data enhances decision-making (Grover et al., 2018), combining business knowledge with data insights to make decisions more informed and complete (Lin & Kunnathur, 2019; Manika et al., 2017).

The availability of data comes from digital platforms. The use of digital platforms strengthens SMEs' connections with consumers, reducing costs, achieving greater contact with the public, and facilitating internationalization (Li et al., 2018; Hånell et al., 2019; Taiminen & Karjaluoto, 2015). Digital platforms, such as Alibaba, Amazon, and eBay, have revolutionized the distribution of value and innovated the relationship with consumers (Perren & Kozinets, 2018; Ramaswamy & Ozcan, 2018). Information technology (IT) solutions enable progress toward SMEs' internationalization by improving communication quality and speed and enhancing SMEs' digital presence at reduced costs (Feliciano-Cestero et al., 2023).

Dynamic capabilities, which promote opportunity identification and business process reconfiguration, are essential for maximizing DT benefits (Soluk & Kammerlander, 2021; Teece, 2007). Developing dynamic capabilities within SMEs contributes to their growth and improved performance (He & Wong, 2004; Lubatkin et al., 2006; Sunday & Vera, 2018). Dynamic

capabilities also enable the perception of the dynamics and changes arising from the external environment (Teece, 2007). To take full advantage of such emerging opportunities, entrepreneurs and managers must make themselves the drivers of change (Anwar, 2018; Cenamor et al., 2019). A corporate culture conducive to innovation and organizational change supports DT, especially in SMEs where the entrepreneur plays a leadership role (Franco et al., 2014; Garzoni et al., 2020; Matarazzo et al., 2021; Mintzberg & Waters, 1985). These managerial and entrepreneurial capabilities can drive DT, stimulating adaptation, agility to meet new challenges, and the ability to seize market changes and proactively respond to new demands (Lobo & Whyte, 2017; Vanhaverbeke, 2017; Vial, 2019).

2.3 Hindering factors

The rapid increase in data volume and complexity requires organizations to possess adequate analytical skills to manage data effectively (Asadullah et al., 2023; Veglio et al., 2020; Wamba et al., 2017). A lack of these skills can lead to poor decision-making and significant financial losses (Manika et al., 2017). SMEs must, therefore, be able to attract people with these analytical skills to compete in the market (Erevelles et al., 2016). The lack of skilled employees is a factor that further amplifies the digital divide between SMEs and large companies (Nguyen, 2009; van Laar et al., 2017). Therefore, a barrier to the adoption of DT for SMEs stems from a lack of adequate digital capabilities (Warner & Wäger, 2019).

Limited financial resources and digital skills make SMEs often resistant to change (Spithoven et al., 2013), complicating the transformation and reconfiguration needed for technology adoption (Coleman et al., 2016). Indeed, many SMEs struggle to recognize DT's value and relevance, remaining anchored to established routines (Coco et al., 2024; Coleman et al., 2016). The inertia of SMEs usually stems from the familiarity of the organization, which makes them more attached to habits accrued over time. Therefore, organizations need to engage in the creation of strategic partnerships to collaborate with experienced data management stakeholders that can facilitate DT or the activation of a learning process suitable for successfully managing DT, leading to greater digital literacy (Coco et al., 2024).

A strong management commitment is essential for aligning people, technologies, and organizational resources to transform into a data-driven organization (Sivarajah et al., 2017). This process must be gradual to primarily enable the organization to understand the true potential of data and successfully incorporate it into business routines and processes (Janssen et al., 2017). A step-by-step approach helps avoid organizational resistance and promotes coordination (Demeter et al., 2020). Flexible leadership and e-leadership are crucial for aligning business strategy with digital technol-

ogy to foster SME growth (Fachrunnisa et al., 2020; Garbellano & Da Veiga, 2019; Li et al., 2018; Soluk & Kammerlander, 2021).

3. Methodology

3.1 Qualitative and longitudinal methodology

The empirical data for this study were collected by applying the qualitative case study (Cunningham, 1997; Eisenhardt, 1989; Eisenhardt & Graebner, 2007; Yin, 1994). The qualitative research design includes multiple case studies and in-depth single-case or ethnographic studies.

Qualitative research helps to explore the identification of critical factors and other key variables that explain a phenomenon. Moreover, the SMEs' willingness to disclose strategic and organizational information in official documents is limited (especially if they are not listed), so direct contact is essential to understanding these profiles. The use of a single case study is aimed at describing in depth the phenomenon analyzed for a specific case (Baxter & Jack, 2015; Easterby-Smith et al., 2002; Eisenhardt & Graebner, 2007). Using a single case study approach, we faced a certain trade-off between the depth of analysis of the selected case and the potential generalization of the results. However, we addressed this issue by adopting a rigorous and high-quality research design based on the suggestions of Gerring (2004), Gibbert et al. (2008), and Ketokivi & Choi (2014).

The longitudinal case study methodology (Khanagha et al., 2014; Schmitt et al., 2018; Volberda et al., 2021) applied to a single case study is useful in order to understand the evolution of the strategic behaviors and, with a specific focus, adoption, implementation, and evolution of DT. According to Khanagha et al. (2014), this approach helps to understand the sequence of events that shape each decision path, and it is used by several scholars (Volberda et al., 2021) for the effectiveness in observing the development of the implementation of DT.

In general terms, according to Khanagha et al. (2014), a longitudinal case study approach is useful to provide the different stages of business model innovation, identifying the sequence of external and internal factors that are affecting the strategic decision (Hutzschenreuter & Kleindienst, 2006). The study by Plotnikova et al. (2021), focused on Ericsson, illustrates an in-depth analysis of the open strategizing processes applied to create and coordinate an online community. The same approach was applied by Aversa et al. (2021) to Amazon's various business models. The application of the longitudinal single case study is still limited (Barbieri et al., 2023; Isensee et al., 2023; Saratchandra, 2022).

3.2. Case study selection

Specific characteristics of the selected SME allowed us to gather rich data and explore the DT adoption of this firm. Several reasons justify the selection of this case study. The investigated SME is a first-generation family firm operating in Made in Italy fashion with a turnover of 37 million Euros and employing around 72 employees in 2022. Table 1 shows some of the company's balance sheet information from 2019 to 2022 that shows a significant recovery, after the COVID-19 pandemic, in terms of net profit (Aida, 2024).

Tab.1 Corporate data

Balance Sheet Data	2022	2021	2020	2019
Sales Revenue	37.543.760 Euros	35.901.888 Euros	35.481.475 Euros	40.132.773 Euros
EBIDTA	2.375.654 Euros	2.181.602 Euros	1.420.577 Euros	1.922.837 Euros
EBIDTA/Vendite (%)	6,19 %	5,94 %	3,83 %	4,54%
Net profit	559.905 Euros	550.640 Euros	179.873 Euros	391.193 Euros
Total assets return on equity (ROE)(%)	2,44 %	2,07 %	0,50 %	1,51 %
Total Assets	37.943.689 Euros	41.931.138 Euros	52.720.706 Euros	40.374.634 Euros
Debt/Equity Ratio	0,21	0,27	0,20	0,11
Bank debts on net profit %	12,18 %	19,36 %	19,07 %	6,47 %
Employees	72	78	100	50
Net Assets	22.970.122	26.663.565	35.806.103	25.978.675

Source: Authors' elaboration from Aida database.

The fashion industry and the Made in Italy domain have not been frequently used as the context of the study of this phenomenon because of the profiles of the industry in itself (traditional/low-tech industry) and of firms (SMEs). The rationale behind the selection of this specific case study is related to the fact that Freddy, despite being an entrepreneurial and family business operating in a traditional sector such as the sportswear sector, implemented a process of intense DT.

Freddy is a Made in Italy SME, operating in a specific segment of Fashion (e.g., textile/clothing, footwear, leather goods, eyewear, jewelry) focused on sportswear (dance, fitness, and leisure). In the general opinion,

"Made in Italy" is recognized as an umbrella brand, that offers a strategic image of quality differentiation at the international level (Matarazzo et al., 2021). Sportswear is mainly considered a global fashion industry, but Freddy, thanks to its focalization strategy on dance and wellness-fitness and local supply chain, was able to create an international brand with a Made in Italy anchorage. These profiles impacting the relationship with the market are powered by digital tools.

Moreover, Freddy is an SME. The SME domain is interesting for several reasons. It is well known that digital technologies, such as big data, artificial intelligence, and 4.0 machines are impacting, in particular, big companies' business models (Rothberg & Erickson, 2017; Volberda et al., 2017). For this reason, research focused on digital transformation in SMEs is still limited and the exploration of enabling factors and hindering factors is theoretically and practically relevant. The diffusion of platforms and social media, with the increasing relevance of mobile devices, have radically modified Freddy's business model, moving from an exclusive B2B perspective to an additional B2C one. The B2C perspective, enabled by digital technologies, helps the company to become an international player, reaching directly the final marketing.

The governance structure of SMEs, in terms of the leadership style of entrepreneurs and founders, identified in the family, tends to imprint the digital orientation. Freddy is a proper case of a small and entrepreneurial company, that is oriented to digital transformation (Li et al., 2018). The history of this case is paradigmatic in illustrating the role of DT in shaping strategic growth.

Founded in 1976 by Carlo Freddi, it has become known for the quality of its products, attention to design, and functionality, particularly in line with the needs of sports-loving consumers. The company has 76 employees and is based in Milan, Italy. The brand's philosophy supports people's fitness and wellness goals by promoting an active and healthy lifestyle (Freddy, 2023).

The company is best known for a particularly innovative clothing line, "WR.UP®," which introduced a unique design for leggings aimed at enhancing women's body shapes through specific patented technologies in 2013. This product line has also achieved great success internationally, contributing to the growth and expansion of SMEs (Freddy, 2023). This collection has also been extended over time with new versions, such as WR.UP® FITS BETTER, as well as expanding the product range, thus benefiting from the continuous studies and analyses regarding fabric technology to offer ever better fits to consumers (Freddy, 2024). Therefore, in recent years, other products have been designed and patented by Freddy.

Freddy conceived, designed, and manufactured the new 100% Made in Italy capsule collection, that was launched in 2017 (Penco et al., 2023). Fred-

dy has a strong presence in both the Italian and international markets, with single-brand stores and an extensive network of distributors that have enabled the brand to reach a wide audience in different parts of the world. In recent years, the extension has involved several new countries (Freddy, 2023).

With the onset of the COVID-19 pandemic, Freddy stepped up investment in its e-commerce, increasing online product sales by revamping the website and implementing new membership programs for the public (Freddy, 2024). In 2020/2021, Freddy was nationally awarded as the most performant operator in the fashion e-commerce category.

3.3 Data collection

Data collection included the conduct of semi-structured interviews, developed following a research protocol consisting of open-ended questions that gave respondents the freedom to answer about the topics of the study. The selected interviews were conducted in different periods, from December 2019 to April 2023, involving top figures in the company such as the director of e-commerce, finance, and management and control to outline the company's evolutionary trends. Other contacts, shared documents, and informal interviews have been inserted into the construction of the case study (Table 2).

Tab.2 Key informant profile

#	Data	Interview Date	Interviewee position
Freddy S.p.A.	- Semi-structured interviews; - Corporate Materials (corporate report, official website, and additional materials, etc.…).	December 2019	CFO and member of the Board of Directors
		December 2020	CFO and member of the Board of Directors Informal contact and Corporate Materials
		January 2021	CFO and member of the Board of Directors Informal contact
		November 2021	CFO and member of the Board of Directors E-commerce Director (informal contact, Corporate Materials, and award Corsera)
		April 2023	CFO; E-commerce Director Management Control Director.

Source: Authors' elaboration.

The research team created continuous contact with the selected firm, collecting corporate documents and involving the management in educational projects (seminars, workshops, presentations). The primary base of the research is constituted by interviews. They were conducted remotely, using the Microsoft Teams platform, and lasted an average of about one hour each. After obtaining the interviewees' consent, the interviews were recorded and transcribed by the researchers. Key informants' statements were triangulated with secondary data from shared company reports and materials available on the company's official Web site. Several pages of the company website as well as several sections of the company reports were explored to gather further information. The two company reports of reference were "Freddy - Fall-Winter 2019" and "Freddy - Company profile" of which, for the former, the sections related to "New B2C approach to the Collection", "Made in Italy grows", "New S.N.B.N WR.UP Projects" and "Freddy Revolutions" (Freddy, 2019) were explored, while for the latter the entire document composed of three main sections "Who we are", "What we do" and "How we communicate" were explored (Freddy, 2023).

The first report is analyzed, in section "2. New B2C approach to the Collection", which shows how the collections have been designed over time more and more for the consumer audience, also international, by defining both specific editorial plans and more satisfying and comfortable sales locations. In the section "3. Made in Italy grows", SME highlights how it has always tried to differentiate its offer from other competitors by emphasizing the typical characteristics of Made in Italy, such as the Italian taste in colors and fabrics. While in the sections on "New S.N.B.N WR.UP Projects" and "Freddy Revolutions", the company communicated its commitment to creating increasingly comfortable and technological collections for its public capable of bringing the sport into fashion and fashion into sport (Freddy, 2019).

The second report focuses on the history of the brand and in particular on "The brand and its evolution", highlighting some of the main milestones in the course of the company's evolution as well as the study from a technological point of view that led EMS to the implementation of patented technologies, not only about clothing but also about certain footwear (Freddy, 2023). The collection of secondary data allowed triangulation of information from multiple sources (Flick, 2022; Stake, 1995; Yin, 1994).

3.4 Data analysis

The interview transcripts and collected company materials were analyzed using a qualitative method, in particular, by conducting a content analysis using Nvivo 14 software. Content analysis is widely used in management studies as it represents a systematic and reproducible methodology to analyze textual data (Krippendorff, 2018).

The coding process led to the definition of two main themes, a semantic value and a time value, divided into codes and sub-codes. A coding process that enabled a better understanding of the phenomenon by breaking down codes into sub-codes (Gioia et al., 2013; Grbich, 2013). From the definition of these codes and sub-codes, it was possible to define a code tree and codebook composed of multiple levels (Grbich, 2013), as shown in Table 3. The codebook was then obtained by adopting a deductive approach to capture potential themes and codes from the analysis of relevant literature (Miles & Huberman, 1994).

Tab. 3 Codebook.

Themes	Codes	Sub-Codes	References
Semantic Value	Enabling factors in DT journey	Open culture for change	Garzoni et al., 2020
		SMEs dimensions	Chan et al., 2019; Fletcher & Griffiths, 2020; Levy et al., 2001
		Agility and flexibility	Chan et al., 2019; Fletcher & Griffiths, 2020; Levy et al., 2001
		Entrepreneurial intuition	Matarazzo et al., 2021; Mintzber & Waters, 1985
		Role of top management	Lobo & Whyte, 2017; Sivarajah et al., 2017; Soluk & Kammerlander, 2021
		Innovative digital product	Marino-Romero et al., 2024
		Dynamic capabilities	Soluk & Kammerlander, 2021; Teece, 2007
		Product standardization	Buer et al., 2020; Feliciano-Cestero et al., 2023
	Hindering factors in DT journey	Knowledge constrain	Wamba et al., 2017; Warner & Wäger, 2019
		Resistance to change	Spithoven et al., 2013
		Organizational inertia	Coleman et al., 2016
		Uncertainty of market trends	Ferraris et al., 2019; Park & Mithas, 2020
		Data privacy issues	Mitrovic et al., 2023
		Dependence on third-party platforms	Asadullah et al., 2023
	Effects of the DT	Penetration into international markets	Hånell et al., 2019; Straková et al., 2022
		Enhanced performance (e.g., sales, market share)	Kraus et al., 2019; Matarazzo et al., 2021; Perren & Kozinets, 2018; Ramaswamy & Ozcan, 2018; Ramdani et al., 2022; Rialti et al., 2019
		Increased efficacy (e.g., customer loyalty)	Li et al., 2018; Matarazzo et al., 2021
		Increased efficiency (e.g., process optimization)	Buer et al., 2021; Feliciano-Cestero et al., 2023; Taiminen & Karjaluoto, 2015
		Business model transformation	Marino-Romero et al., 2024; Neirotti et al. 2017
Time Value	Before	2019	
	Middle	2020-2021	
	After	2023	

Source: Authors' elaboration.

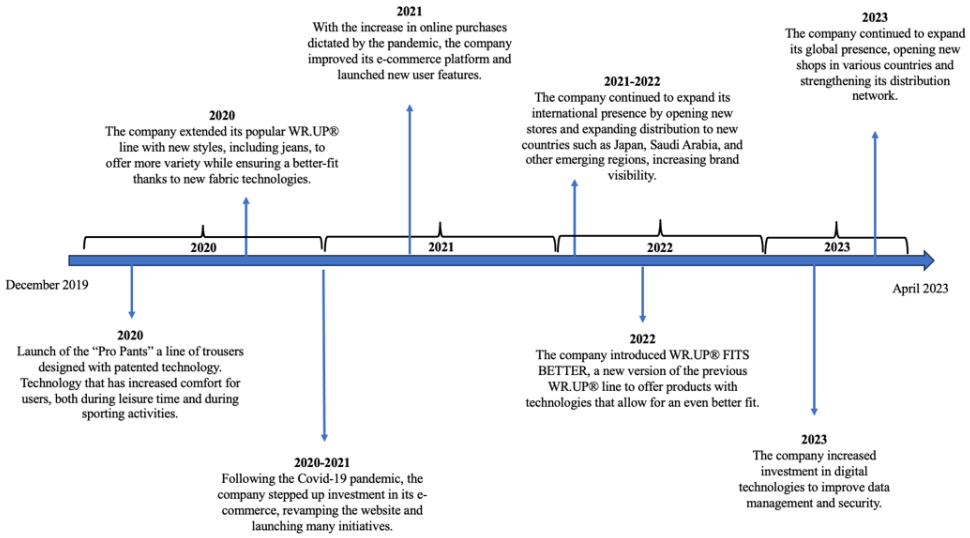
Specifically, the codebook shown in Table 3 describes at the time value the different moments of the analysis while at the semantic value, it presents 3 codes relating to the factors at play in the DT pathway (Enabling Factors and Hindering Factors) and the potential effects of DT. The time value reflects the desire to analyze the evolutionary perspective of DT, identifying for the different periods the efforts committed by the SME. The time value reflects the "temporal bracketing" analysis strategy described by Langley (1999, p. 703) and reiterated by Soluk & Kammerlander, 2021.

Therefore, each textual unit was coded with this codebook in mind, both for semantic and temporal value, as proposed in other studies in the literature (Beattie et al., 2004). The researchers coded the data collected independently, comparing only when they disagreed. Specifically, one or more semantic codes were assigned to the collected data, as well as a time code to track the evolutionary process of SMEs' DT. This analysis made it possible to explore the interactions between the different codes and discover connections and patterns among the collected data (Krippendorff, 2018).

4. Findings

Figure 1 shows the main events that occurred along the DT process, from 2019 to 2023, in the company's history such as technological innovations, new products, and penetration of new markets.

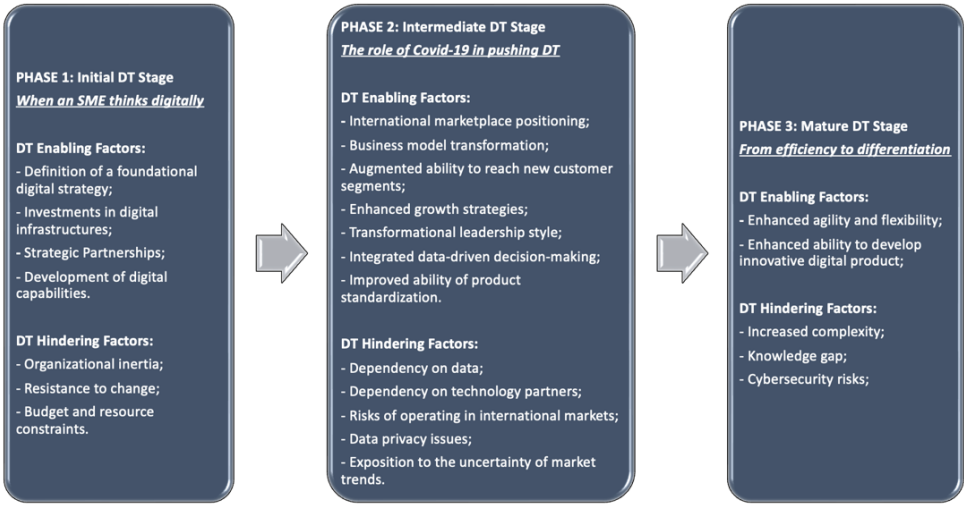
Fig. 1: Timeline of the main events in the company's history in the period December 2019-April 2023.



Source: Authors' elaboration

The content analysis of the secondary and the interview data revealed three major phases along Freddy's DT process. These phases can be split into (1) the initial stage of DT; (2) the intermediate stage of DT; and (3) the mature stage of DT, shown in Figure 2 to give an evolutionary representation. The analysis of enabler and hindering factors encountered in each phase helps to explore the "reason why" of the entire process. In the following sections, we describe each phase and, when possible, we use representative quotes to illustrate our interpretations.

Fig. 2: The SME digital transformation journey.



Source: Authors' elaboration.

4.1 Phase 1 - Initial DT stage: When an SME thinks digitally

Different hindering factors emerged in the initial stage of DT, such as a relatively limited adoption of advanced digital technologies, organizational inertia, and resistance to change due to established processes and routines. At this stage, the firm also faced challenges related to budget and resource constraints that hindered the strengthening of the digital infrastructure and the ability to invest in digital skills research. The lack of digital capabilities could hamper the firm's ability to manage the evolutionary challenges. To overcome this limitation, the firm undertook ad-hoc training to stimulate employees' digital literacy before investing in digital talent recruitment. It emerged how "There was a need to hire people with new profiles like the e-commerce manager that we didn't have before, so people dedicated to the digital part, also social, and start working with

agencies and with new suppliers related to the social and Internet world […]". Simultaneously, the firm established strategic partnerships to facilitate knowledge transfer and overcome capability gaps. Strategic partners provided access to specialized expertise and resources, accelerating the organization's DT efforts. Partners provided the firm with analytics capabilities, playing a relevant role in defining strategic goals, increasing sales, and defining scenarios for internationalization.

Realizing the DT's challenges, key decision-makers proactively crafted a more comprehensive digital strategy to identify areas for improvement, priorities for establishing investments in digital infrastructures, and a roadmap for future digital initiatives. Thus, DT's initial stage enhanced the firm's digital awareness and online presence by laying the foundation for a cultural shift to integrate digital tools into daily micro-practices. In this stage, the firm allocated much of the initial investment towards fortifying the e-commerce website. Such an investment would prove pivotal in the ensuing years as the e-commerce website evolved into a cornerstone touchpoint for nurturing customer relationships and driving sales growth, leading to increased market share.

4.2 Phase 2 - Intermediate DT stage: The role of COVID-19 in pushing DT

In the intermediate DT stage, the firm recognized the importance of positioning itself in the international marketplace to expand its global reach, enhance brand visibility, and capitalize on emerging market opportunities.

COVID-19 was a triggering event that shaped the firm' DT journey. It is important to recognize that the DT process was initiated before the pandemic, but this shock helped to create a significant booster. First of all, because of the crisis of physical commerce, the firm increased its e-commerce channel. Moreover, the firm invested in digitalization, accelerating the investment in digital marketing. This time was also devoted to new investments in logistics and CRM digital systems (back-end).

To accomplish such a purpose, the firm invested in developing digital capabilities to improve the ability to seize, sense, and transform the business model and increase operational efficiency and product standardization, ultimately resulting in cost reductions and process optimization. Investments in digital platform capabilities played a pivotal role in enhancing the firm's data collection capacity and strengthening connections with customers.

These enhanced capabilities enabled an improved ability for strategic renewal. Strategic renewal has been supported by the ongoing cultural shift towards embracing an innovation mindset. In addition, the adopted transformational leadership style fostered a culture of experimentation and adaptation, streamlining change management processes through continuous support to employees, collaborative approaches, informal communication, and learning-by-doing mechanisms.

By combining augmented digital marketing capabilities and renewed digital infrastructure, the firm reached new customer segments. In the effort to increase customer loyalty, the firm effectively deployed digital capabilities and technologies improved CRM activities, fostering higher customer engagement and satisfaction, and culminating with enhanced business-customer relationships. The firm also embraced an omnichannel approach, exemplified by smartwalls in-store, to integrate online and offline channels and deliver a seamless customer experience across multiple touchpoints.

Improved ability to collect customer data has gone in parallel with increased data dependency about decision-making and market insights: "[..] in a world dominated by data, where there are millions of data available, both commercial data and marketing data, you must make sure you know how to manage it properly." To enable effective data management, the firm adopted data management practices, establishing data quality, security, and accessibility benchmarks. This implied implementing data storage solutions, data backup procedures, and basic data security measures.

The firm has endeavored to transform data challenges into opportunities by developing an integrated decision-making framework that blends entrepreneurial intuition and managerial expertise with data-driven empirical evidence: "Over the years, there has been a shift from models increasingly based on intuition, concerning experience and the company's vision or the manager's discernment, to models increasingly assisted by scientific evidence to support strategic decisions". Data represent the key element "to do business in an increasingly competitive market, adapt to change, and take advantage of it". Leveraging data to make decisions adds a layer of complexity since it risks slowing down "the decision-making process […] due to the increased analysis of structured data. This analysis incorporates external factors in simulations that explore various scenarios". However, the informants recognize the potential value-added deriving from data-driven decision-making: "While this may introduce a slight delay in decision-making, it has the potential to result in more informed decisions".

At the same time, however, operating in international markets introduced new hindering factors, stemming from cultural barriers, geopolitical uncertainties, and evolving market trends. Additional risks include regulatory compliance and data privacy concerns. Another prominent hindering factor of the intermediate stage is the dependence on technology partners. Relying on technology partners exposes the firm to the risk of inhibiting effective alignment between technological activities and strategic and functional objectives across critical areas. However, by enhancing strategic alignment capabilities, the firm successfully mitigated this risk and optimized its utilization of technology to drive overall business success. Therefore, proactive risk management and strategic planning revealed essential factors for success in these critical areas during DT's mid-stage.

4.3 Phase 3 - Mature DT stage: From efficiency to differentiation

In the maturity stage, the firm faced an increasing complexity deriving from global crises, increased costs, and evolving market trends, exacerbating knowledge gaps within the organization. To overcome these hindering factors, the firm prioritized agility and flexibility to adapt to rapidly changing markets. Enhanced organizational agility enabled the firm's ability to anticipate and respond timely to unexpected external changes, resulting in a more resilient and competitive business system.

Investments in the development of product innovation capabilities started to pay out, as the firm showed an enhanced ability to create highly innovative products aimed at meeting customer demands. For example, the firm invested in developing a new pant with peculiar characteristics. The launch of innovative products differentiated the firm from competitors and met the evolving customer needs, contributing to enhanced market share. In particular, "There is always great work on the product in the sense that we are working on collections but also on patented products, for example, the Wrap product is a product that has a patent behind it […] this is the aspect of strategic direction". In addition, strong product innovation capabilities fortified brand positioning and reputation for quality in the marketplace.

Implementing predictive analytics represents an area for future development to anticipate market trends and customer behavior. The interviews confirm that "[...] making informed decisions based on data, not only historical but also predictive, is critical". In particular, the firm is trying to create «a business analytics system that links information sources from different functions that will allow us to have more complex analysis and to make forecasts on sales and orders for agents and distributors to maximize sales». Also, predictive analytics would enable a more sophisticated approach to the international market and the ability to effectively engage new consumer segments by knowing more about their preferences and questions.

As the firm relied more on digital technologies for scenario analysis, it faced heightened cybersecurity risks. Cybersecurity is a critical strategic area that needs to be improved in the future. As the expansion of the customer base has increased the value of data and the company's potential for differentiation, data theft can decrease competitiveness and growth prospects. In addition, the loss of sensitive data can undermine the bond of trust between the company and its customers, increasing the churn rate.

5. Discussion and implication

This study examines the DT journey of an Italian internationalizing SME through an evolutionary lens, emphasizing the significant factors encountered during this progression.

The results reveal how each DT stage presents opportunities and threats; in the initial stage, the tensions were internal to the firm, while in the intermediate and mature stages, the threats came from outside. In the initial DT stage, the firm focused on overcoming internal hindering factors, such as organizational inertia and resistance to change (Vial, 2019), and creating favorable conditions to enable DT. In the intermediate and mature stages, the focus was instead on the factors facilitating the DT, capturing, and capitalizing on opportunities deriving from DT.

According to previous research (Matarazzo et al., 2021; Soluk & Kammerlander, 2021; Warner & Wäger, 2019), the results confirm the significant role played by dynamic capabilities as enablers of DT. In particular, this research contributes to the theory by identifying and discussing digital dynamic capabilities especially relevant alongside various DT stages. Developing dynamic capabilities from the initial stages of DT is crucial to succeed in this evolutionary process. By developing digital dynamic capabilities, SMEs can successfully implement digital technologies, cultivate strategic value for innovation and growth, and better position in the international competitive scenario, rapidly responding to changes in the digital landscape (Marino-Romero et al., 2024). These findings align with existing literature, which suggests that firms require non-imitable and non-replicable capabilities to support their strategies (Schilke et al., 2018; Teece, 2007). Constant adaptation of growth strategies requires SMEs to cultivate business strategy alignment and dynamic managerial capabilities through a transformational leadership style (Akter et al., 2016; Helfat & Martin, 2015; Volberda et al., 2021). These are keys to aligning business objectives with digital initiatives and fostering a culture of innovation based on continuous learning and experimentation.

Following Janssen et al. (2017) and McAfee et al. (2012), our results emphasize the relevance of implementing integrated data-driven decision-making models. From the intermediate to mature DT stage, the firm leveraged data-driven insights complemented by entrepreneurial intuition to drive informed strategic decision-making. Integrated decision-making models enable SMEs to synthesize data from various sources, analyze it effectively, and derive actionable insights to support business strategy and business model innovation (Ciacci & Penco, 2023; Pedota, 2023; Persaud & Zare, 2023; Vial, 2019). E-commerce and other digital channels have reinforced the validity of data-driven decision-making (Matarazzo et al., 2021). The successful integration of data-driven decision-making models into a

decisional structure strongly based on the entrepreneurial role aligns with previous findings (McAfee et al., 2012), highlighting the use of big data does not compromise the need for human vision. On the contrary, the case study shows that human decision-makers are still key in identifying business opportunities and market changes. Through creative thinking and innovative ideas, they cover centrality in decision-making, using big data to validate their original insights. This finding is also consistent with previous literature highlighting the strategic role of data-driven decision-making as an augmenting factor of human capabilities in decisional processes (Grover et al., 2018).

This study sheds light on the effectiveness of a small, family-style decision-making group in driving the DT. This contribution provides an original perspective of governance in SMEs, suggesting that such a governance style can enhance reactiveness and effectiveness in DT and related strategic decisions, in contrast to more hierarchical governance models of larger organizations. A family-style, small decision-making group equips the firm with enhanced flexibility and speed in making strategic decisions, enabling it to stay agile in changing business environments (Škare & Soriano, 2021). Integrating predictive analytics stands as a prospect for future advancement. Therefore, the firm expects to evolve the current descriptive analytics model to implement predictive and prescriptive analytics, enabling the anticipation of market trends and customer behaviors (van Rijmenam et al., 2019).

The shift from efficiency-focused strategies to differentiation and market development as DT matures contributes to strategic management literature by providing empirical evidence of how strategic priorities evolve in response to DT. In the initial to mid-stages of DT, the firm prioritized efficiency approaches to optimize operations and save costs. However, as DT progressed toward maturity, the approach shifted towards differentiation and market development to better sustain growth and profitability (Verhoef et al., 2021). Similarly, as the firm progressed towards the DT mature stage, agility and flexibility became increasingly crucial to pivot quickly in response to changing market dynamics and customer demands, setting the stage for enhanced competitiveness (Teece et al., 2016; Troise et al., 2022).

Looking ahead, the firm must address several challenges to sustain its DT efforts. For example, transforming dependence on technology partners into a digital ecosystem that promotes greater integration of digital systems is essential for long-term success (Stonig et al., 2022). The firm must also prioritize cybersecurity risk management to safeguard digital assets and maintain customer trust (Vial, 2019).

5.1. Theoretical and managerial implications

The study contributes to the advancement of the academic debate on the evolutionary DT of internationalizing SMEs (Marino-Romero et al., 2024). This paper improves the theoretical understanding of how DT is not a monolithic process but evolves through evolutionary stages, each of them influenced by specific internal and external factors. This perspective can contribute to the literature on organizational and strategic change by emphasizing stage-specific dynamics. In particular, the study shows that when an SME reaches a certain digital development, in that it offers its product digitally and has already implemented changes inherent in business processes, the focus shifts to the ability to manage and analyze data to make internal decision-making increasingly rich, complete, and informed (McAfee et al., 2012). This advancement enables SMEs to respond more proactively and dynamically to market changes.

This research's focus on integrated decision-making models enhances the theoretical understanding of how SMEs can leverage data-driven insights alongside entrepreneurial intuition to inform strategic decisions. This empirical evidence contributes to the intersection between data-driven and entrepreneurial decision-making, demonstrating that adopting a hybrid model can be particularly effective for SMEs undergoing DT for internationalization. Interestingly, our case study shows that SMEs exhibiting a strong entrepreneurial orientation, visionary leadership, and innovative culture do not suffer from patriarchal decision-making, i.e., a skeptical personal attitude toward digital initiatives (Giotopoulos et al., 2017; Penco et al., 2023; Soluk & Kammerlander, 2021). This means that SMEs should analyze the characteristics of their decision-making structures and nurture an organizational culture in line with the evolution they wish to undertake. Demonstrating the effectiveness of a small, family-style decision-making group in driving DT, this research contributes to understanding governance styles' effectiveness in DT contexts in SMEs, suggesting that an informal, collaborative, and visionary governance style can improve responsiveness and effectiveness in DT and strategic decisions.

Data-driven decision-making requires SMEs to continuously learn and move beyond established routines and knowledge, fostering the development of digital dynamic capabilities that foster growth and competitiveness (Matarazzo et al., 2021). In this regard, the case study adds to the theoretical discourse on dynamic capabilities by illustrating their critical role in enabling SMEs to adapt to and capitalize on digital technologies for innovation and growth. This research identifies the different digital capabilities at play along the entire DT journey, capturing their distinctiveness in enabling efficiency, strategy alignment, and innovation development.

The study also offers managerial implications, providing managers

with guidance on key factors facilitating DT. In their initial approach to DT, managers should define a comprehensive foundational digital strategy anchored with organizational goals to guide digital initiatives (Feliciano-Cestero et al., 2023; Ross et al., 2017). Key strategic steps could consist of establishing strategic partnerships, essential to facilitate knowledge transfer, bridge capability gaps, and facilitate continuous learning. Managers should also invest in training to enhance employees' digital literacy before seeking additional digital talent. Since DT is not only a technological process but requires coordination and the ability to steer strategic renewal, developing dynamic managerial capabilities becomes an essential factor of success (Helfat & Martin, 2015).

In the initial stage and along the entire journey, firms should invest in developing digital capabilities, such as business strategy alignment, digital platform, big data analytics, and digital marketing capabilities, to improve business model transformation and operational efficiency while expanding the customer base (Bargoni et al., 2024; Ciacci et al., 2024; Ciacci & Penco, 2023; Marino-Romero et al., 2024). Developing product innovation capabilities is crucial to enable differentiation strategies during the intermediate DT stage. In the digital maturity stage, firms should prioritize agility and flexibility to adapt to evolving market dynamics and successfully cope with global crises (Teece et al., 2016).

6. Conclusions, limitations, and future research agenda

This research focuses on the DT of SMEs undergoing internationalization from an evolutionary perspective, highlighting the enabling and hindering factors that accompany this journey, particularly in the Italian dense and concentrated landscape of SMEs. The case study highlighted three crucial phases of the DT process – initial, intermediate, and maturity stage – that required a major strategic realignment aimed initially at pursuing greater efficiency, then differentiation and greater flexibility and agility suitable for proactively responding to ongoing market changes.

Despite the valuable contribution to the state-of-the-art, the study is not without limitations that could be overcome by future research.

First, the analysis of only one case study makes the results difficult to generalize. Therefore, future studies could extend the analysis by including cases from different countries and sectors to highlight differences related to the geographical context of SMEs and the dynamics of individual production sectors.

Finally, content analysis while adopting a codebook inferred from the literature presents problems of subjectivity in researchers' attribution of codes at the time of coding. This limitation has been partially overcome with the coding carried out by all researchers.

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RELATIONAL DIMENSION OF WOMEN IN SMALL BUSINESSES FOR THE VALUE CO-CREATION

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Abstract

Purpose. *Relationships are an important component for the growth of organizations. Through the original lens of dimensional publicness theory, this research aims to highlight the role of women in small businesses in co-creating economic, public, and social value through the relational dimension of capital.*
Methodology. *A survey of the literature and visualization of the research field was conducted on a sample of articles concerning the topics of women in small businesses, relational capital and the value of entrepreneurial initiatives. Subsequently, a classification of the studies and a thematic analysis was carried out aimed at identifying the contribution of relational capital to the co-creation of value at different levels of publicness.*
Results. *The literature was mainly developed in contexts characterized by a low level of publicness highlighting positive implications on value creation attributable to the relational dimension of capital. We propose a theoretical framework useful for capturing the extent to which the relational capital of women in small businesses contributes to the co-creation of value, complemented by the development of propositions to be tested empirically.*
Managerial implications. *In order to increase the importance of the value co-created for the ecosystems by women in small businesses, policy makers could support programs that enable the development of women's business networks with public or publicly supported institutions where resources, knowledge and skills can be shared and systematized.*
Limits of the research. *The research is based on a literature review conducted on a limited number of papers extracted from Isi Web of Knowledge and takes a purely theoretical approach.*
Originality. *Overcoming the traditional dichotomy between the private and public sectors based on the proprietary nature of resources, the study contributes to the existing literature by identifying theoretical propositions based on the dimensional publicness approach to be empirically tested to enrich the understanding of the value of the relational dimension of women in small businesses for the value co-creation.*

1. Introduction

Relational capital constitutes an important strategic resource for all types of organizations (Kordab et al., 2020). More often than not, hierarchy and bureaucracy represent a kind of constraint to value creation from relationship development (Ramadan et al., 2017). Previous literature reviews have shown that studies on the importance of interpersonal relationships have been enriched over the past two decades with new themes and different theoretical perspectives emphasizing the importance of individual characteristics, organizational context, and cultural context (Ben-Hafaïedh et al., 2023). Previous research argue that female attributes plays an important role with reference to the growth of relational capital even if sometimes they have fewer opportunities to participate in entrepreneurial ventures (Espinoza and Welter, 2022).

The literature on women's entrepreneurship originated in the private sector and in recent decades extended to public administration as the process of value creation for citizens that occurs by combining public and private resources with the aim to exploit the opportunities (Morris and Jones, 1999). This process underscorses the importance of relationships between different actors (Kearney et al., 2009).

It has also pointed out that women-led business ventures, whether private or public or organized in a hybrid form (e.g., public-private partnerships), in the education, insurance, and health sectors are usually geared toward creating economic, public, and social value for the owners and the society as a whole (Moulton, 2009; Steccolini, 2019).

Particulatly, female attitudes and roles (Lyngsie and Foss, 2017) might have a differential effect on the way in which inter and intra-organizational relationship are enacted in terms of key motivations (Cardon et al., 2009), behaviors (Powell and Baker, 2017), decision making (Mathias and Williams, 2017), strategic actions (Powell and Baker, 2014), and performance (Mathias and Williams, 2018).

Relational capital in women's enterprises consent more effective access to distinctive and richer resources for value creation (Paoloni and Dal Mas, 2022), generate competitive advantages and foster the creation of value (Nadeem et al., 2018), and might lead female entrepreneurs to improve value for the community.

A large body of research has focused on stand-alone organization neglecting the business relationship along the value chain with the aim of testing whether one type of organization is more effective than others in creating value for the community. However, there is gap in the literature regarding the need to develop a theoretical model for the interpretation of the role of relationships within and between different types of small and entrepreneurial organizations in creating and disseminating public and so-

cial value (Agrifoglio et al., 2021), in terms of real welfare (economic, social, environmental, cultural, etc.) in the community.

In this research we aim at reviewing previous literature on women in small businesses and relational capital in order to conceptualize how the relational dimension of women entrepreneurs is able to influence the intensity of value co-created for the ecosystem. In doing so, we refer to the theoretical framework of dimensional publicness (Bozeman, 1987, 2013), which is particularly useful in explaining the extent to which the relational dimension of women in small businesses, is transformed into economic, public and social value to be shared with the entire ecosystem (Bozeman and Moulton, 2011; Anderson, 2012).

A survey of the literature based on the PRISMA methodology and cluster analysis visualization technique was methodologically conducted on a sample of articles based on a number of parameters (including geographic context, and editorial location, the main theories most widely used in women's entrepreneurship studies) and classifying these studies to frame the role of relational dimension of women in small businesses according to different levels of publicness.

Analysis of the literature shows that research has developed around five closely connected clusters (performance and value creation; women in governance and entrepreneurship; female human capital and career opportunities; corporate social responsibility, diversity and inclusion; relational dimension of women in small business) and has adopted multidisciplinary theoretical lenses with a prevalence of organizational managerial and sociological theoretical framings. Most of the studies have been conducted in the context of private firms reporting positive implications on value creation for the owners of resources. Our analysis confirms that relational dimension of women in small businesses has mostly been analyzed in contexts characterized by low levels of publicness and favors value co-creation.

This study contributes to the literature on the role of women in small business and value creation by developing a conceptual model accompanied by a number of theoretical propositions suggesting how relational capital in organizational structures characterized by different level of political and/or economic authority plays a significant role in the co-creation of economic, public, and social value for the ecosystem by women in small businesses. This model provides a benchmarking tool for advancing research on the relational dimension of women in small businesses and value co-creation, and provides policymakers with useful suggestions to support programs for female entrepreneurial initiatives.

2. Relational capital and entrepreneurship

The relational capital is a distinct feature of "doing business" (Edvinsson, 1997), as it is a key asset for any firm, being a source of competitive advantage and value creation (Edvinsson et al., 2022).

It is well known that firms do not are isolated systems but rather they are embedded systems (Granovetter, 1985) depending, to a great extent, on their relations with their environment. Nowadays, the firm's success is strongly connected to the relationships holded with other actors in the more open and interconnected ecosystem (Edvinsson et al., 2022).

The relational capital is defined as a collection of actual or potential resources embedded in, accessible through, and extracted from interpersonal and social organization networks existing between cooperative partners (Nahapiet and Ghoshal, 1998).

According to Prahalad and Ramaswamy (2000), relational capital is the knowledge entrenched in the relationships with any stakeholder that influences the life of an enterprise and revives its overall competence of the organization. Such stakeholders may include customers, suppliers, employees, producers other firms belonging to the same or a different industry, public bodies, local communities, universities, schools, and research centres, among others (Yen et al. 2015).

In this respect, relational capital consists of a set of formal and informal, temporary and permanent relationships, formed and developed over time, that help in promoting business development (Ghosh and Datta, 2020), improving innovation capability (Wu et al., 2021) and environmental adaptability (Tian et al., 2022) of the firms. Moreover, relational capital plays an important role in promoting information sharing and resource integration, increasing the value of the firm reputation in the market and among investors, which can significantly impact the firms' perfomance (Arena et al., 2023).

Relational capital also includes the stock of trust, fidelity, loyalty and company's reputation that the company must increase in order to be competitive over time (Costabile, 2001).Trust is the relational dimension of social capital (Tsai and Ghoshal, 1998). Connected to the continuous exchange of resources between companies, trust reduces the threat of opportunistic behavior by partners, improves cooperation efficiency, promotes mutual learning and effective synergies (Pastore, 2021), can attract more like-minded organizations to join the existing relationship network (Tian et al., 2022), having a significant effect on both the success of the relationships and their competitive and economic performance. The direct or indirect interactions beetwen firms and other counterparties that have similar personal attributes, preferences, norms, and attitudes (Neumeyer et al. 2019) gradually fosters cooperative athmosphere and mutual trust which,

in turn, favor the development of stable and long-term partnerships. These partnerships boosting firms' performance and, then, lead to an increase in their economic value (Iiturrioz et al., 2015). These characteristics make relational capital a resource whose value tends to grow with the consolidation of relationships. Indeed, stable and continuous social relationships allows the individual actor to develop trusting relationships that reduce information asymmetries and transaction costs, positively contributing to the creation of value (Gulati, 1999). In this respect, some scholars suggested that the effect of entrepreneurs' personal networks and their relational capital affect the small business performance, depending on the type of venture, age, industry, and institutional context of the small firms (Neumeyer et al., 2019). But these effects can also vary with race, ethnicity (Light and Dana, 2013) and gender (Brush et al., 2009), until it leads to the formation of social boundaries in entrepreneurial ecosystems (Neumeyer et al., 2019).

In women-led enterprises relational capital plays a strategic role (Paoloni and Dumay, 2015). On the one hand, these enterprises are especially characterized by a high attitude to networking, with significant attention paid to relational aspects throughout all stages of a company life (cooperative approach) for the development of personal and business activities (Idowu and Ogundipe, 2013).

The relational dimension of women's enterprises is related to women's innate traits and social skills such as expressiveness, community, education and support (Eagly and Wood, 2012). Indeed, women entrepreneurs thanks to their social skills denote a strong orientation to collaborative networks and community behaviors (Marshall, 2010). Social interactions, especially within ecosystems characterized by a collaborative culture, open hierarchy, and continuous learning are critical for the creation and accumulation of technical and organizational skills and competencies (Ramadan et al., 2017), which enable the production of greater value in various organizational contexts (Pfeffer and Salancik, 1978). Recent studies point out that the relational dimension of women in small businesses is critical for corporate entrepreneurship especially with reference to the value creation for the entire ecosystem (Setini et al., 2020).

However, despite the efforts from governments and other institutional and social players, women are subjected to inherent barriers to entrepreneurship (Liñán et al., 2020), which inhibit their entry into the entrepreneurial space, the kind of business they engage as well as the success of these initiatives (Ilie et al., 2021).

Despite, their established ability to create and maintain social ties, women are more likely than men to be excluded from both leadership positions (Lauring and Selmer, 2012) and the opportunity to participate in innovation-oriented social exchanges (Ljunggren et al., 2010). Moreover, despite the same levels of qualification and experience and although women and

men can exchange and combine skills equally, women continue to be underrepresented at the institutional, political and economic levels, confirming the existence of a significant gender gap in employment, leadership and entrepreneurship (Duberley and Cohen, 2010). This happens despite, as recent literature highlight, women make a significant contribution to entrepreneurship and economic development (Noguera et al., 2013) in terms of creating new jobs in their communities and increasing the gross domestic product, with positive impacts on reducing poverty and social exclusion (Rae, 2015).

According to the Institutional theories (North, 1991) and the Social comparison theory (Festinger, 1954), women in entrepreneurship frequently face social and cultural discriminations as well as gender stereotypes (Joyce et al., 2021), which negatively affect their ability to recognize and develop opportunities (Bullough et al., 2014) and, then, their intention to pursue an entrepreneurial career path.

Such as stereotypes, on the one hand, does make it more difficult for women to undertake an entrepreneurial career in any sector (Marlow and Swail 2014). On the other hand, they become significant, also, at later stages (Gupta et al. 2019), when women entrepreneurs face both more obstacles in business management as well as in accessing funding (Villaseca et al., 2020) and difficulties in developing their professional venture networks (Liñán et al., 2020).

However, there are many reasons why lifting the second glass ceiling and empowering women could be an opportunity. Experienced women leaders and entrepreneurs have the potential to add enormous value to organizations. As such, they can promote role models and putting coaching, tutoring and mentoring actions and other support relationships in place, so providing opportunities for women as well as benefiting younger women's development.

Gender issues literature highlights irreducible differential characteristics between female and male entrepreneurship that must be distinguished from gender-based discrimination (Serafini, 2021), considering that entrepreneurial capacity is connected with particular qualities possessed by the individual entrepreneur (Marshall 2010), regardless of gender.

In this regards, according to Albert Bandura's social cognitive theory (1991) and social role theories (Eagly and Wood, 2012), as women behave differently from men, their entrepreneurship provides society with different, and often innovative solutions to management and organizational problems as well as to the exploitation of new opportunities (Santos et al., 2016).

Huang et al., (2022) argued that gender biases and stereotypes widely documented in the literature, and their influence on female psychologi-

cal capital, have been weakening and are decreasing. This trend seems to be associated, on the one hand, with the continuous change in people's beliefs, attitudes, and perceptions, and, in the other hand, with to the increased opportunity for education and training, a more social awareness, their political and economic empowerment (Garg and Agarwal, 2017) as well as the evolution of the social roles for women (Bhatia and Bhatia, 2020), which have more active role outside of the home and some of them enter entrepreneurship and become successful entrepreneurs (Liñán et al., 2020, p.1052).

Previous theoretical and empirical articles, mainly referring to Behavioral economics literature (Yousafzai et al., 2015), have highlighted how the determinants and the degree itself of entrepreneurship within a country depend on a variety of factors which refer to the combination of external as well as the internal features of on organization (Urbano et al., 2022), such as: (a) individual characteristics of entrepreneurs; (b) organizational and managerial aspects; (c) enviromental/entrepreneurial ecosystem conditions.

At the individual level, scholars ranging from psychology to sociology and economics, have considered important factors in the entrepreneurial decision-making approaches (Lyngsie and Foss, 2017) and initiating, promoting, and nurturing entrepreneurship activities (Turner and Pennington, 2015) the mix of skills and personality traits (including attitudes, values and beliefs, educational background, previous professional experience, age and gender) associated with behavioral characteristics (such as the willingness to change, risk taking, innovativeness, networking, being social etc.) of the entreprenurs.

At the organizational level, literature highlights how companies' organizational size, structure and values, the resource availability and the access to them (Nason et al., 2015) as well as the governance and ownership systems and role of managers and gender diversity at different hierarchical levels (Radaelli and Sitton-Kent, 2016) influence the firms' overall entrepreneurial strategic orientation, both in new entrepreneurial initiatives and in strategic and organizational renewal processes within existing organizations (Pettit and Crossan, 2020).

At the environmental level, the entreprenurship appears to be influenced by competitive, technological, political, economic and social conditions as well as by industry-related variables (Basu et al., 2011), such as the market dynamism, the competitive intensity, the degree of industry growth or the level of complexity.

Instead, among the institutional factors that influence the propensity for entrepreneurship and its level, some scholars highlighted that national culture (Hayton et al., 2002) can strengthen or wehaken certain distinctive personal traits, and, accordingly, encourage (or not) entrepreneurial be-

haviors and/or define different entrepreneurship models. Other scholars pointed out that efficience (or not) of regulations in the economy (Begley et al., 2005) can stimulate (or deter) people to start one's own business.

Other scolars argued that gender attitudes and roles (Lyngsie and Foss, 2017) can have a significant effect on entrepreneurship. From this perspective, over the past few decades a growing body of literature has emphasized the identity-based perspectives of entrepreneurs (Mmbaga et al., 2020). This perspective delves into distinctive characteristics of (male or female) entrepreneurs, in terms of key motivations (Cardon et al., 2009), behaviors (Powell and Baker, 2017), decision making (Mathias and Williams, 2017), strategic actions (Powell and Baker, 2014), and performance (Mathias and Williams, 2018).

Tian et al. (2022) stated that entrepreneurial traits can encourage entrepreneurs to build and gradually expand the social relationship network and accumulate relational capital, leading to more performing results and a more decisive competitive advantage.

Although some studies stated that women entrepreneurs have lower levels of relational capital than male entrepreneurs, but experienced female entrepreneurs have a higher degree of relational capital than women entrepreneurs with little to no entreprenurial experience (Neumeyer et al., 2019).

3. The relational dimension of women in small business and the value co-creation: the publicness theory approach

The relational dimensions of women in small businesses is characterized by a network approach that is distinguished by women's tendency to integrate different spheres of their professional and private lives. Relationships are mandatory to maintain the connections with the partners, sharing knowledge, and creating new business opportunities, even empowering resilience in crisis management (Paoloni et al., 2023). Entrepreneurial traits can encourage entrepreneurs to build and gradually expand the social relationship network and accumulate relational capital, and then can improve enterprise performance (Tian et al., 2022).

Relational capital in women's enterprises is configured as the set of formal or informal durable or temporary relationships and public–private partnerships that consent more effective access to distinctive and richer resources for value creation (Paoloni and Dal Mas, 2022), generate competitive advantages and foster the creation of value (Nadeem et al., 2018), particularly in the case of female entrepreneurship.

More properly, the enactment of value creation through interactions with multiple stakeholders can be referred as value co-creation, that is the process by which firms seek to engage stakeholders as active co-developer

of value everywhere in the system (Ramaswamy and Ozcan, 2018).

Managing current grand challenges demands relational leaders who encourage collaboration, coordination, and trust with various stakeholders (Oliver et al., 2024). However, not all relationships and interactions result in positive or value-creating outcomes; sometimes, the relationships even could result in negative outcomes (Buhalis et al., 2020).

This occurs when actors experience objectives and resource misalignments (that could be misintegrated or misused intentionally or unintentionally), inadequate coordination; a power or dependence imbalance, inadequate communication and problems of information asymmetry, opportunistic behaviors due to absence of trust. In this regard, referring to relational capital and women's entrepreneurship, female entrepreneurs could face other new barriers or cliffs on which they risk running aground (the so-called "glass cliff": Ryan and Haslam, 2007). Within the relational capital-based partnerships, they could experience not meet their goals environmentally, or achieve environmentally, socially or economically undesirable effects. They often are exposed to a higher risk of failure, criticism, and psychological distress, thus a danger of falling off an invisible cliff.

In this regard, Spigel (2017) and Stam (2015) highlight the importance of incubator organizations, universities, and SMEs support services promoting activities, initiatives, and meetings that help women entrepreneurs in order to increase their relational capital and diversify their networks between networks of stakeholders, depending on industry, type of entrepreneurial venture, or socioeconomic status of the entrepreneur-to-be (Mason and Brown 2013). The infrastructures and support organizations such as accelerators or incubators can support women to start their entrepreneurial career (by offering access to physical resources, administrative services, access to financial resources, assistance with start-up procedures and access to networks). Universities can provide a broad stream of intellectual property, creating various opportunities for new technology-driven ventures. Business associations provide female and minority entrepreneurs with the opportunityto connect and build social capital.

The literature on women in small businesses has emphasized that entrepreneurial ventures led by women, whether private or public or organized in hybrid form in the education, insurance, and health sectors are usually oriented toward the creation of economic, public, and social value for stakeholder and community (Moulton, 2009; Steccolini, 2019). The nature and complexity of such value places emphasis on the interaction between the different actors who directly or indirectly intervene in the processes of resource acquisition and allocation through the mutualistic integration of their respective contributions. In this sense, the economic, public, and social value created through the involvement of different actors participating in entrepreneurial initiatives tends to take the form of co-created value

(Cui and Aulton, 2023).

To identify how the relational dimension of women in small businesses is able to influence the intensity of co-created value for the ecosystem we resort to dimensional publicness theory (Bozeman, 1987; Moulton, 2009; Bozeman, 2013). This perspective was developed based on the notion of source of economic and political control or authority rather than ownership of resources to distinguish between public and private organizations. In the dimensional publicness theory (Bozeman, 2013), organizations as open systems (Scott, 2003) stand on two cross-dimensions of publicness and privateness based on the specific mix of political and economic authority that distinguishes them and helps define their attributes and performance.

In particular, all organizations are characterized by varying levels of political and/or economic authority and therefore are distributed along a continuum in which it is possible to identify:

- organizations characterized by a high level of publicness, whose resources are under the economic control of market or political authority and are subject to greater regulatory pressure and oversight;
- organizations characterized by a low level of publicness, maintain a higher degree of autonomy from regulatory and market controls on the basis of their "privatness," in the allocation and management of resources.

Publicness is conceptualized in various ways, as the influences of external political and economic authority (Bozeman 1987), as organizational ownership, or as the relationship between the two (Rainey and Bozeman 2000). Businesses, then, operate in a broader social context, and the actions of organizations are determined largely by that context.To understand the degree of publicness of an organization, therefore, it is necessary to understand the context in which the organization is or operates.

Most studies on dimensional publicness have focused on institutions, organizations, and their strategic management in various fields including management and social entrepreneurship (Choi et al., 2021), information and commmmunication technology (Rocheleau and Wu, 2002), accounting (Bracci et al., 2021), and ethical business (De Graaf and Van Der Wal, 2010).

Dimensional publicness theory lends itself to explaining and guiding organizational strategies and behavior (Bozeman and Moulton, 2011), and empirical analyses attest that it promotes the realization of public value (Moulton, 2009), such as facilitating public service delivery (Miller and Moulton, 2014) or improving organizational performance (Anderson, 2012).

Not only public organizations but also private organizations (nonprofit and for-profit) increasingly pursue the goal of economic, public, and social value creation. The main link between these organizations and their public counterparts is the external "social control" that binds both sets of organizations (Moulton, 2009). This does not negate the importance of internal

organizational variables; in fact, internal structures, processes and people are essential to "acting" (or interpreting) and managing the external environment for the organization (Pfeffer and Salancik, 1978).

The critical determinant of an organization's behavior, however, is often found in its source of social control and its interpretation of that control (Moulton, 2009).

In this respect, dimensional publicness theory by emphasizing the importance of the political and economic control structure of organizations (Seepma et al., 2021) allows for a link between relational dimension of women in small businesses and the economic, public, and social value co-created in different kind of organization.

4. Methodology

This paper conducts a survey of the literature on a sample of peer-reviewed articles published in English extracted from Isi Web of Knowledge through a bibliometric search relative to the period December 2015 to December 2022.

In oder to reduce the bias affecting the literature review, we followed the guidance provided by PRISMA-P (Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocol).

We choose this time frame due to capture some of the effects of both the EU's Innovation Strategy and Gender Equality Strategy (and their correlated policies), taking into account that women entrepreneurship have become a growing multidisciplinary field of academic study, particularly since 2015.

On the one hand, since the Lisbon Strategy (2000-2010) until the recent "2022 New European Innovation Agenda", the European innovation strategy and policies have been encouraged collaboration and networking, able to build up relational capital for SMEs. In the contemporary, globalized and knowledge-based economy, EU's strategies, policies and actions supporting collaborative networks within the European Union generally have the broader goal of strenghtening regional and SMEs businesses development[1]. The relational capital that comes from diversified and valuable

[1] The EU's main goal of creating a dynamic, competitive and innovative Europe through a knowledge-based economy incentivising innovation, encouraging collaboration and networking and supporting cluster development has been incorporate within the comprehensive EU Innovation strategy, policies and actions. Among these, by way of example, the mention may be made of some of the most important ones (as this is not the aim of this paper): 1) the Lisbon Strategy (2000-2010, aimed at making Europe "the most dynamic and competitive knowledge-based economy in the world capable of sustainable economic"); 2) New European Innovation Agenda" (adopted in 2022, aimed at positioning "Europe at the forefront of the new wave of deep tech innovation

networks connects resources, facilitates innovation, sustains competitive advantage of regional businesses, creates collective value and increases sustanable economic development[2].

On the other hand, since 2010 a wide range of policies and targeted actions have been placed in the EU Agenda, aimed at promoting gender equality and women's empowerment, in terms of increased participation of women to businesses and reducing gender stereotypes in the workplace[3]. Achieving a gender-equal Europe by 2025 is a strategic goal for the EU; gender equality is also the fifth among the 17 Sustainable Development Goals within the 2030 Agenda for Sustainable Development adopted by all United Nations Member States in 2015.

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and start-ups"); 3) the European Commission's "New Industrial Strategy for Europe" (adopted in 2021 and updated in 2024, aimed to delivering on three key priorities: maintaining European industry's global competitiveness and a level playing field, at home and globally, making Europe climate-neutral by 2050 and shaping Europe's digital future); 4) the "SME Strategy for a sustainable and digital Europe" (2020, aimed at supporting European SMEs through strengthening their capacities to adapt to climate neutrality challenges, help them to reap the benefits of digitalisation, reduce the regulatory burden that SMEs face, and improve their opportunities to access finance); 5) the Horizon Europe strategic plan for 2025-2027, through which investment in R&I is directed towards tackling key global challenges such as: climate change; pollution; the loss of biodiversity; the digital transition; an ageing population; and building a more resilient, competitive, democratic and inclusive Europe; 6) the Programme for the Competitiveness of Enterprises and SMEs - COSME (2014-2020), that is the programme for EU actions to promote entrepreneurship and entrepreneurial culture, to improve access to finance for SMEs in the form of equity and debt as well as the acces to markets inside and outside the Union, to improve framework conditions for businesses and to support the competitiveness of business, with special emphasis on small and medium-sized ones; 7) the "Small Business Act –SBA (adopted in 2008), whose the main priorities were to improve market conditions for small and medium-sized enterprises and boost the economy, to promote entrepreneurship, improve access to finance, reduce the regulatory burden and improve access to markets and internationalisation. Examples of support services for SMEs and networks in the EU include, among others, the Enterprise Europe Network (providing business support, offering comprehensive assistance to SMEs with aspirations to grow internationally) and the SME Relief Package (2023) aimed at bolstering SMEs competitiveness and resilience as well as at creating a more favourable business environment that fosters growth and innovation.

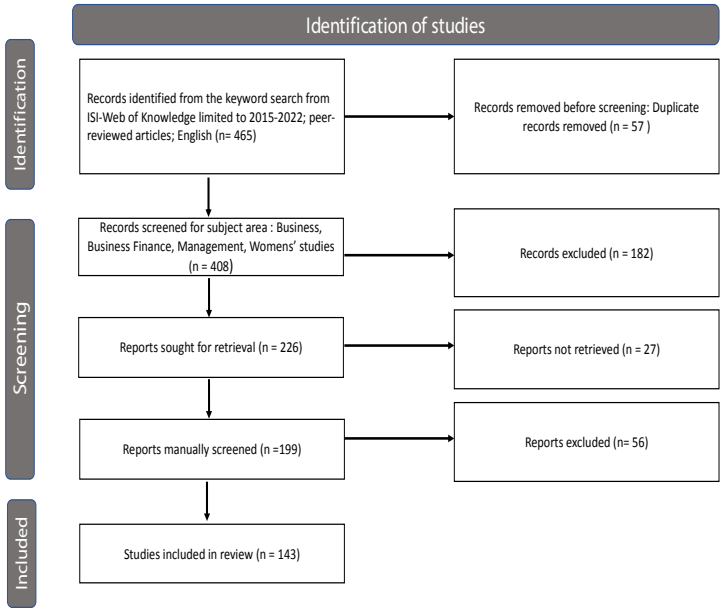
[2] See https://www.consilium.europa.eu/en/policies/support-to-small-and-medium-sized-enterprises/

[3] Overall, the EU's strategy to promote gender equality and women's empowerment, to stand a broad and meaningful women's participation and inclusion in all aspects of life, as well as to eliminate gender stereotypes is contained in the following (among others) programmatic documents: 1) The "Strategy for equality between women and men (2010-2015)", aimed at improving the place of women in the labour market, in society and in decision-making positions both in the European Union and the world; 2) the "European Pact for Gender Equality (2011–2020)", aimed at encouraging the EU and Member States to take measures to: eliminate gender stereotypes, ensure equal pay for equal work and promote the equal participation of women in decision-making; 3) the Strategic engagement for gender equality (2016-2019), focused on the following key areas: increasing female labour market participation and economic independence of women and men; equal pay for work of equal value; equality in decision-making; dignity, integrity and ending gender-based violence; and promoting gender equality beyond the EU; 4) the Gender Balance in Corporate Boards Directive (2012, 2022); 5) the Work-Life Balance Directive (2019). More recently

Figure 1 shows the flow diagram for the identification of studies.

Specifically, we indentify 465 articles were selected containing the following keywords: “gender”, “women”, “woman”, “female”, “SME”, “entrepreneuer”, “owner”, “leader”, “relational capital”, “networking”, “social capital”, “social”, “relation”, “performance”, “value”. These keyworks were chosen following relevant research in the fields of women in small business (Serenko and Bontis, 2017). After removing duplicates and applying the eligibility criteria related to subject areas, 239 articles were eliminated. The resulting 266 articles were searched for a pdf document and screened manually in order to check for relevance to the research topic. During these last steps we removed 83 articles and reached a final sample of 143 screened articles.

Fig..1 The PRISMA diagram for review



Source: author's elaboration.

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the European Commission has adopted: 1) the Gender Equality Strategy 2020-2025, setting the current framework for EU action to promote gender equality in the EU; 2) the EU's new Action Plan on Gender Equality and Women's Empowerment in External Relations 2020–2025 (GAP III) aiming at accelerating progress on empowering women and girls, and safeguarding gains made on gender equality 30 years after the (1995) Beijing Declaration and its Platform for Action; 3) the #EndGenderStereotypes campaign (2023) to challenge gender stereotypes in different spheres of life, including career choices, sharing care responsibilities and decision-making. For further information, refer to https://commission.europa.eu/strategy-and-policy/policies/justice-and-fundamental-rights/gender-equality_en; https://commission.europa.eu/strategy-and-policy/policies/justice-and-fundamental-rights/gender-equality/gender-equality-strategy_en.

The review of the 143 studies was developed in two phases. In the first stage, we synthetized the literature through a cluster analysis visualization technique in order to understand the most investigated topics in terms of keywords that have been most frequently used in the field of women in small businesses. For this purpose, we employed Vos Viewer software (Van Eck and Waltman, 2017).

Afterward, we conducted a systematic review of the literature on the basis of a number of parameters such as geographic context, publishing location, the theories most widely used in women in small businesses studies.

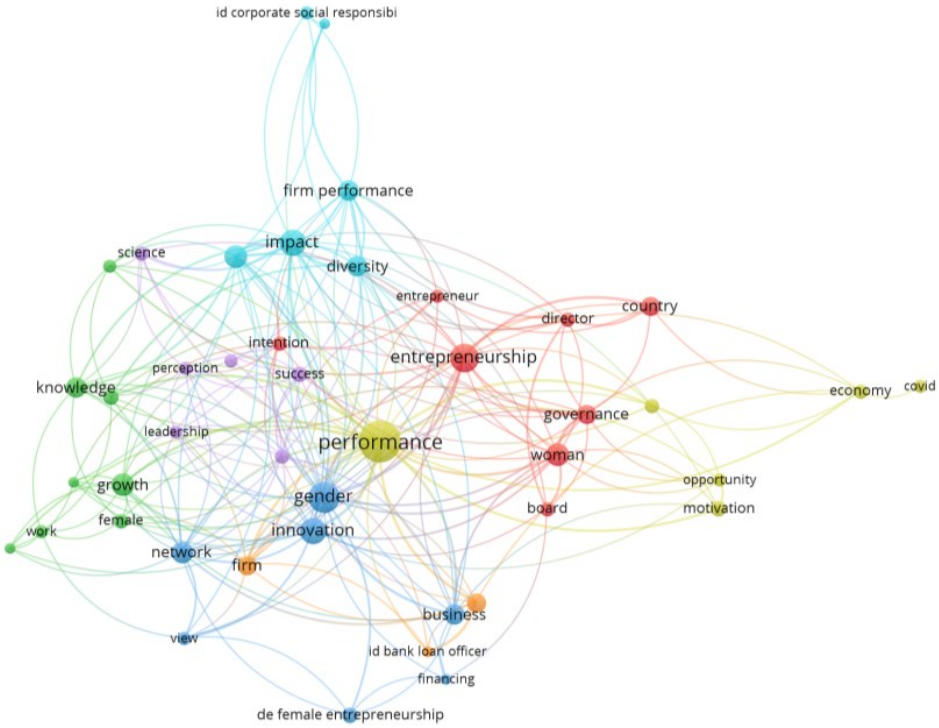
In the second stage, a thematic analysis of women in small businesses studies was conducted to frame the role of relational capital of women in small businesses according to different levels of publicness.

The two phases thus outlined allowed for the development of a conceptual framework based on dimensional publicness theory useful for capturing the extent to which the relational capital of women's entrepreneurship contributes to the co-creation of public value to be shared with the entire ecosystem. This framework is complemented by the development of propositions to be tested empirically.

5. Results

In the first phase of research a visualization of the keyword co-occurrence network clustering was conduced. Figure 2 displays the results of the keyword network clustering. The size of each circle represents the number of times of occurrence, and the colours indicate the cluster to which each keyword belongs.

Fig.. 2. Keyword network clustering



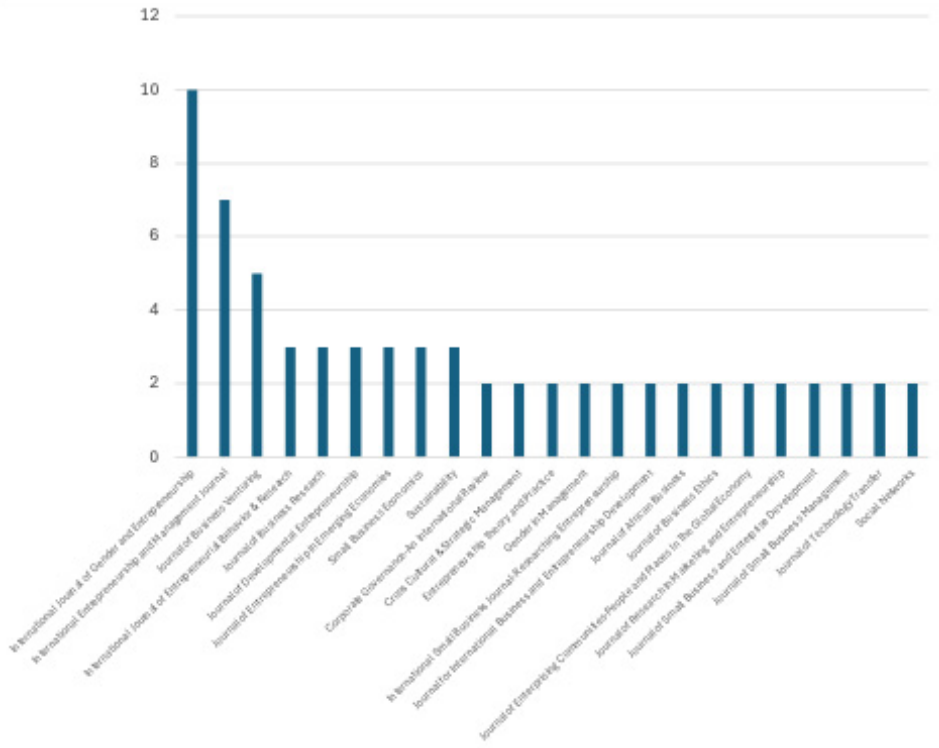
Source: author's elaboration.

The figure shows that research on women in small businesses has covered a variety of topics that can be grouped in four main research clusters. The most frequently used keywords are "Performance", "Gender", "Entrepreneurship". Our analysis shows overlapping topics that are closely connected around five main clusters s that are coloured in yellow, red, blue, green, and light blue. The five clusters identify the following field of studies: (i) "Performance and value creation" (yellow); (ii) "Women in governance and entrepreneurship" (red); (iii) "Female human capital and career opportunities" (green); (iv) "Corporate Social Responsibility, Diversity and Inclusion" (light blue); (v) "Relational dimension of women in small business" (blue), respectively.

The systematic literature review conducted in the first phase of the research shows that the topic of women in small businesses is recent and growing, and has been analyzed mainly in the U.S. and European geographic context.

The Figure below (Figure 3) reports the most frequent journals.

Fig. 3. Most frequent journals



Source: author's elaboration.

Most of the studies have been published in journals related to gender, entrepreneurship, and relational capital management, including "International Journal of Gender and Entrepreneurship," "International Entrepreneurship and Management Journal", "Small Business Economics", "Gender In Management", and "Social Networks".

The analysis of the theories adopted from the literature shows that research has employed multidisciplinary theoretical lenses with a prevalence of organizational, managerial, sociological, and psychological approaches. The following table (Table 1) summarizes the main features of the theo-

retical approaches employed with special reference to reference authors, theoretical assumptions, and implications.

Tab. 1 Theoretical approaches employed in studies of women in business and the relational dimension of capital

Feminist Theories		
Theories	Theorerical assumption	Implications for women in business
Liberal Feminst Theory (Rosemarie,1992; De Tienne and Chandler, 2007)	Systematic bias for women Lack of experience Legal /customary constraints Access to resources Societal perceptions.	If women had equal access to the opportunities available to men, they would behave the same way. Lack of experience and limited access to resources affect the ability of women's businesses to expand.
Social Feminist Theory (Carter and Williams, 2003; Kennedy, 2008; Muntean and Ozkazanc-Pan, 2015)	Methods of socialization Perception of risk	The socialization process influences the ecosystem view and, indirectly, business choice by weighing social risk and expected reward.
Feminist Standpoint Theory (Chasserio et al., 2014; Powell and Baker, 2014; van der Tuin, 2016)	Multiple roles/identities Diverse social positions "Insiders-outsiders" experience Responsibility to family	Women in businesses' success can be hindered or enhanced by interactions of multiple identities, which can constrain behavior with implications for the legitimacy of actions.
Psychological Theories		
Personality Traits Theory (Simpeh, 2011)	Level of internal control External level of control Support from family and society	The success of the entrepreneur derives from her abilities and also from external support. Personality traits influence women's inclination toward entrepreneurship.
Need for Achievement Theory McClelland (1961)	Need for achievement Motivation for success	Human beings need to succeed, overcome obstacles and achieve a high standard. Entrepreneurs are driven by the need to compete. Risk-taking and innovativeness have a positive influence on entrepreneurial inclination.
Anthropological Theories		
Transnationalism Theory (North, 1991; Mitchell et al., 2002)	Culture Customs, traditions and beliefs of a community	Cultural environments can produce differences in attitude as well as differences in entrepreneurial behavior. Human transactions are influenced by the outcome of their biological, socio-linguistic, intellectual and cultural experience.
Management and Organization Theories		

Resource-based Theory (Coleman, 1988; Unger et al., 2011)	Human capital Social-relational capital Financial capital	Human capital is composed of knowledge, habits, personal social attributes, which enhance the ability to create economic value. Social-relational capital is the set of mutually beneficial relationships with various stakeholders that impacts the firm's performance and reputation. Financial capital helps exploit entrepreneurial opportunities.
Recent Theories on Entrepreneurship		
Effectuation Theory (Sarasvathy, 2008; Chandler et al., 2011)	Ability of the entrepreneur to create opportunities (personality, characteristics, skills) Knowledge of markets Networking with partners	Combines personality trait theory, resource-based theory, and social network theory. Entrepreneurs must view the market environment not as "given" but as the result of their own actions, based on the resources -internal and external- that they are able to mobilize.
Opportunity–Based Entrepreneurship Theory (Ardichvili et al., 2003)	Identification and exploitation of opportunities Entrepreneurial readiness Information and knowledge	Entrepreneur personality traits, social networks, and knowledge represent antecedents of entrepreneurial readiness necessary for successful business opportunities.

Source: author's elaboration.

It can be seen that some of the theories traced as the theoretical framework of the analyzed papers decry the role of women in small businesses with respect to relational capital for value creation. In particular, feminist theories (social feminist theory) emphasize the importance of socialization methods, management and organizational theories (resource-based theory) emphasize the importance of social-relational capital while entrepreneurship theories (effectuation theory and opportunity-based entrepreneurship theory) highlight the importance of networking with partners. However, none of the theories employed by the analyzed studies manages to explain how the value co-created by women in small businesses initiatives translates into economic, public and social value shared by the community.

In the second phase of the research, in order to deepen the understanding of the role of the relational dimension of women in small businesses in different levels of publicness, the studies were grouped according to the intensity of the relational capital dimension of women in small businesses and according to the degree of publicness of the organizations i.e., political and/or economic control of resources. The relational capital intensity of women's businesses was qualified as low when relational capital is defined as the set of formal or informal relationships developed and employed by women entrepreneurs within organizations. Where the set of formal or informal relationships transcends the boundaries of organizations to extend

to the ecosystem in which the firm operates, the size of relational capital is configured as medium to high. With reference to the degree of publicness, on the other hand, organizations as unlisted sole proprietorships and/or concentrated-ownership firms are characterized by a low degree of publicness because they maintain a high degree of strategic autonomy and/or are not subject to the constraints of market authority. Conversely, organizations such as widely owned listed firms, professional and nonprofit associations, universities, and government agencies are characterized by a medium to high degree of publicness because they are subject to greater regulatory pressure and their resources are under the control of a political and/or economic authority.

Table 2 shows the distribution of the studies that analyze the economic, public and social value created by women in small businesses according to the two parameters discussed above.

Tab. 2 Creation of value for women in small bisinesses

	Low publicness	Medium-High publicness
Low relational capital	40%	15%
High relational capital	26%	19%

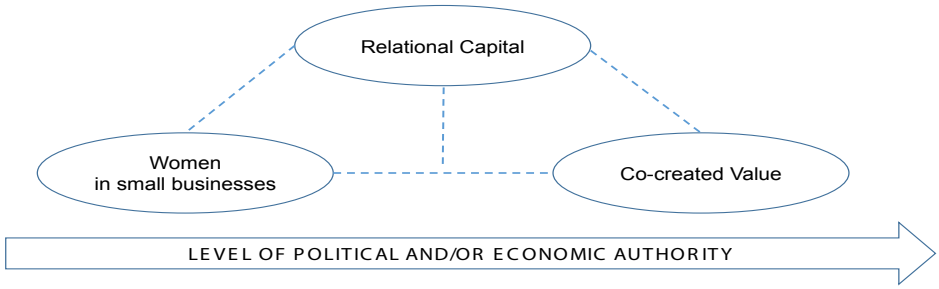
Source: author's elaboration.

The table first shows that despite the potential of women in small businesses to create value through the deployment of relational capital in organizations with medium to high levels of publicness, studies have predominantly investigated value creation in contexts where relational capital of women is deployed within organizations characterized by low levels of publicness. However, it is observed that in organizations characterized by medium to high levels of publicness, value creation is pursued by predominantly leveraging the relationships that women in small businesses also weaves with external stakeholders. In this case, given the high influence of political and/or market control and the value of the relationships that women entrepreneurs also develop outside the organization, economic, public and social value is configured as a co-created value for the community, as it results from the collaboration of women's entrepreneurial initiatives with the multiple stakeholders who intervene in the processes of resource acquisition and allocation.

6. Discussion of results and development of propositions

Having investigated how the relational dimension of women is able to influence the intensity of value created for the ecosystem provides an opportunity to formulate certain propositions framed in the dimensional publicness perspective to understand how women-led small businesses can co-create economic, public and social value through relational capital practices (Figure 4).

Fig..4 The theoretical framework of value co-creation for women in small businesses



Source: author's elaboration.

The figure illustrates that the economic, public and social value co-created by women in small businesses is determined by the level of publicness and the intensity of relational capital.

Based on the theoretical framework of dimensional publicness in women's entrepreneurship studies and the insights emanating from the results of the classification of the studies, we develop certain theoretical propositions aimed at interpreting systemically the relationships between women in small businesses, relational capital intensity, and co-creation of economic, public, and social value that future studies could empirically validate.

First, it is recognized how women in small businesses can be interpreted as a particularly favorable domain for the co-creation of economic, public and social value. This is because women entrepreneurs have a greater preference for collaborative network orientation (Sorenson et al., 2008) and less centralized organizational structures, encourage interaction among employees in all roles and levels of seniority (Foss et al., 2013), support knowledge diffusion and spillover within the ecosystem (Hayter, 2013).

As a result, women-led small businesses' initiatives can be directed toward the co-creation of value in the broader interest of society at large.

Indeed, women in small businesses possess superior relational capital due to their innate traits and social skills and denote a strong orientation toward collaborative networks. These social interactions, especially within

ecosystems characterized by high levels of economic and political control of resources, are crucial in fostering collaboration among different actors, mutualistic integration of their respective contributions, and the sharing of outcomes with public valence. Based on these arguments, it is assumed that relational capital can exert an influence on the relationship between women in small businesses and co-creation of economic, public, and social value in organizations characterized by different levels of economic and political authority. Therefore, the following theoretical proposition is formulated (Proposition 1):

Proposition 1: The relational dimension of women in small businesses contributes to the co-creation of economic, public and social value in all levels of publicness.

A high relational dimension achieved by women complementing the interaction between members of the same organization with inter-organizational networking, implies the mutualistic involvement of different actors who, through the sharing of their respective contributions, enable the co-creation of value for women-led small businesses to be achieved, which translates into widespread value for the ecosystem. Specifically, the conjoint employment of relational capital within organizations and with external partners enhances the ability of women entrepreneurs to co-create economic and social value for the community. Therefore, it is assumed that women in small businesses that develop relationships with partners outside organizations through networking are able to co-create superior economic, public and social value. Therefore, the following theoretical proposition is formulated (Proposition 2):

Proposition 2: The greater the relational dimension of women in small businesses the higher the economic, public and social value co-created for the ecosystem in all levels of publicness.

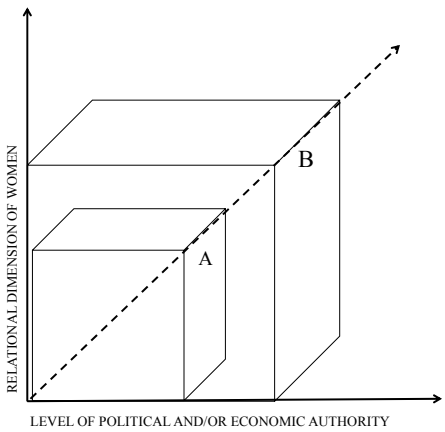
Third, it is recognized that as the level of publicness of organizations increases, so does the degree to which resources are controllable or acquirable by the community. Therefore, organizational structures based on strategic public-private alliances, bilateral contracts, business-to-business agreements and other forms of collaboration are likely to create higher economic, public and social value. In fact, women-led small businesses' initiatives conducted in collaboration with institutions whose resources are under public control and/or authority are based on collaborative networks, technological and organizational practices, and gender norms institutionalized in society that are more likely to fuel economic development, promoting inclusiveness and equality for the benefit of all members of society (Ozkazanc-Pan and Muntean, 2018). Therefore, it is assumed that organi-

zations in which the resource base derives from government authority or market control can become an ideal context for women in small businesses to foster economic, public, and social value through network relationships (Dimitriadis et al., 2017). Therefore, the following theoretical proposition is formulated (Proposition 3):

Proposition 3: The greater the relational dimension of women in organizational structures characterized by a high level of political and/or economic authority the greater the economic, public and social value co-created for the ecosystem.

The following figure (Figure 5), therefore, summarizes the relationships suggested in the theoretical propositions and illustrates how the economic, public, and social value co-created by women in small businesses increases as the relational dimension of women and the level of publicness of organizations increase. In particular, the shift from the smaller cube represented by the letter A to the bigger cube represented by the letter B highlights how co-creation of economic, public, and social value is greater in organizations in which women in small businesses make significant use of both internal and inter-organizational relationships in the medium to high levels of publicness.

Fig. 5. Co-creation of value for women in small businesses through relational capital in different levels of publicness



Source: author's elaboration.

In summary, using the theoretical framework of dimensional publicness, the propositions developed offer an opportunity to contribute to the advancement of studies of women in small businesses that address the interconnections between the management of relational capital and the creation of economic, public and social value.

7. Conclusions

This research conducts a literature review aimed at framing the co-creation of economic, public and social value of women in small businesses through the use of relational capital using the theoretical lens of dimensional publicness. Based on a systematic literature review and a visualization of the most investigated topic in the research field, we arrive at the development of a theoretical framework of publicness in women business studies, complemented by the formulation of certain theoretical propositions aimed at investigating: (i) the

relational dimension of women in small businesses and the co-creation of economic, public and social value; (ii) the complementarity of internal and external relationships in the co-creation of economic, public and social value; and (iii) the role of different organizational structures for the creation of economic, public and social value.

Our examination of the relational capital using the publicness approach as framing advances the literature on women in small businesses in several ways. We suggest that among interpersonal characteristics, gender is an important factor in value co-creation (Cui and Aulton, 2023). We also extend the research strand on publicness theory (De Graaf and Van Der Wal, 2010; Seepma et al., 2021; Choi et al., 2021; Bracci et al., 2021) by showing that it can be adopted to measure value co-creation in women's entrepreneurial ventures. Finally, we contribute to the strand of studies on CSR (Costanza et al., 2021), highlighting how relational dimension of women in small businesses represents a useful mechanism for the activation of certain dimensions of social value related to inclusiveness and gender equality for the benefit of all members of society.

Our work also offers useful insights to future research and provides practical implications. In particular, scholars could explore the role of women relational capital by moving beyond approaches based on managerial and sociological theories. In this sense, publicness theory has the potential to offer a richer perspective, which is particularly recommended in studies relating to organizational structures characterized by medium and high levels of political and/or economic authority.

Political and regulatory authorities could address the challenges of more complex organizational forms through policies designed to support the formalization of women-led small businesses' intra- and inter-organizational networks by also relying on new technologies particularly with public or publicly supported institutions that stimulate economic, public and social value creation.

The present research is not without limitations. First, the literature search is based on a limited number of papers extracted from Isi Web of Knowledge. Subsequent studies could consider alternative databases, such

as Scopus and/or Google scholar to increase the sampled articles. Second, the literature review was carried out by adopting a purely theoretical approach aimed at interpreting the relationships that exist between the constructs of women in small businesses, relational capital, and value creation in the light of the theoretical framework of dimensional publicness. Subsequent studies could complement this approach by developing empirical analyses based on the use of metrics able to capture the public and social nature of the value created by organizations characterized by a medium to high level of publicness.

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THE IMPACT OF EDUCATION ON STUDENTS' ENTREPRENEURIAL INTENTION. MUCH ADO ABOUT NOTHING OR TRUE CHANCE?

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Abstract

Purpose. *Rooted in the rationale that entrepreneurship can be taught and learned, this study aims to understand whether and how certain dimensions of students' education affect their entrepreneurial intention (EI).*
Design/methodology/approach. *Under the lens of Ajzen's Theory of Planned Behavior (TPB), we employ structural equation modeling (SEM) on data gathered via Likert-based questionnaires to understand if attitudes, subjective norms, self-efficacy and students' skills impact the EI in a sample of 1,730 graduate and undergraduate students across France, Italy, Lithuania, Poland and Spain.*
Findings. *While the findings confirm that these factors can shape students' EI, they also reveal that skills provided by universities are the most prominent element leading European students toward entrepreneurial careers. Also, we conducted an additional analysis to understand whether country differences affect our results, suggesting novel insights on the topic.*
Practical and social implications. *The research contributes to academic discourse and policy considerations surrounding entrepreneurship, education, and training. Specifically, the paper advocates for rethinking the employment-education interface, offering practical tools and theoretical ideas to bridge the gap between entrepreneurial practice and higher education systems.*
Originality. *By incorporating in the core of the analysis the role of skills acquired through university programs, the study offers a timely and comprehensive investigation of the factors influencing students' entrepreneurial intention, contributing to a deeper understanding of their potential determinants.*

1. Introduction

This paper attempts to lay the foundations upon which policymakers and regulators worldwide promote initiatives and policies encouraging entrepreneurial career development among younger people to generate new labor opportunities and reduce unemployment rates (European Commission, 2016). These initiatives and policies attempt to fill the void identified by the early debates that negative economic or labor market conditions are likely to "push" individuals into setting up their own companies, or that strong economic prospects are likely to "pull" individuals into entrepreneurship (Moore and Mueller, 2002). On the other hand, the lack of cyclical association of entrepreneurial rates suggests that the latter is the result of structural and demographic influences in the economy (Blanchflower and Oswald, 1996; Skriabikova *et al.*, 2014). These deliberations and frameworks have given rise to a growing number of studies, with academics interested in further exploring the issues concerning entrepreneurship in their multifaceted stances. However, to date, several questions are still overlooked and need far more consideration in the agenda of researchers, which is also in line with recent worrisome investments by policymakers in education initiatives and programs.

Many conceptual models structure several variables that have an impact on the entrepreneurial decision (Moore, 1986; Bygrave, 1989). Although not specifically developed for students, they might explain their entrepreneurial intention as well as the intentions of any other population. Reverberated by those early findings, the starting point of this research is that entrepreneurship can be taught and learned, enabling society to benefit from the full potential of its people (Krueger *et al.*, 2000; Politis, 2005; Zhao *et al.*, 2005; Minniti, 2008; Baum *et al.*, 2014; Omorede *et al.*, 2015; Bitetti and Huber, 2023). Education can provide a contribution by developing knowledge and attributes that are pivotal for employability, active citizenship, and new business creation (Turker and Selcuk, 2009; Raposo and do Paço, 2011; Duong *et al.*, 2022).

Despite the relevance of the themes recalled above, research on the impact of skills and attributes acquired during the studies on students' entrepreneurial intention (EI) is still overlooked (Ferri *et al.*, 2023). However, understanding whether impactful initiatives and proper educational programs may effectively address the EI is crucial to inform how the Higher Education Institutions (HEIs) management is successfully implementing their learning systems[1] in a long-run perspective (Ferri *et al.*, 2023). To ad-

[1] Following Ferri *et al.* (2023), we refer to learning systems including the broadened learning context provided by university educational programs and not to a specific course in entrepreneurship.

dress this limitation, and grounded on Ajzen's Theory of Planned Behavior (TPB), this paper evaluates whether and how the characteristics of HEIs' educational programs affect EIs of a sample of graduate and undergraduate students.

Therefore, the objective of this current study is to examine how a broad university education contributes to the development of entrepreneurial intention among students belonging to HEIs. We rely on TPB given that it is acknowledged as the main theoretical basis to explain the mental process influencing the EI within the context of education provided by universities and HEIs (Van Gelderen *et al.*, 2008; Longva and Foss, 2018; Di Paola, 2021; Chang *et al.*, 2022; Tingting *et al.*, 2022). Bearing in mind the importance of specific contextual features, which are still neglected, our study takes a multi-country perspective and encompasses students from universities located in France, Italy, Lithuania, Poland, and Spain. As evidenced by prior scholars, specific contexts based on countries' culture may influence career decisions (Lent *et al.*, 2000; Brown, 2002; Moriano *et al.*, 2011). In line with prior studies (Fayolle and Liñán, 2014; Kautonen *et al.*, 2011, 2015; Ferri *et al.*, 2023), and embracing the TPB perspective, we analyze three main antecedents of the EI, namely: 1) attitude toward the behavior (ATT), 2) subjective norms (SN), 3) self-efficacy (SE). Most importantly, to understand whether the acquisition of skills developed during university studies can boost EI, we added this element (SKI) to the theoretical model.

To these purposes, we created a four-point Likert-based questionnaire (ranging from strongly disagree to strongly agree) and employed an even scale to avoid the bias of central risk (Caldarelli *et al.*, 2016). The questionnaire was piloted to a sample of 60 subjects to test the scale. Then, we undertook an exploratory factor investigation employing the principal components analysis (PCA) (Brown, 2015). Following satisfactory tests regarding the goodness of the model, we employed structural equation modeling (SEM) (Bagozzi *et al.*, 1991). Our findings reveal interesting insights on the impact of education in the formation of EI in different countries. By doing so, we contribute to the academic and policy debate about EIs, education and training, offering a comprehensive investigation of the factors that affect students' intentions and motivations to undertake an entrepreneurial activity. The findings allow us to complement TPB, engaging in its specific application to educational contexts.

Overall, the present study contributes to the extant literature on TPB-driven studies (Krueger *et al.*, 2000; Shook *et al.*, 2003; Turker and Selçuk, 2009; Carey *et al.*, 2010; Carsrud and Brannback, 2011; Enkel and Bader, 2016) as well as the literature about the antecedents of entrepreneurial intention (Fayolle and Liñán, 2014; Guerrero *et al.*, 2016; Di Paola *et al.*, 2017; Gabbianelli *et al.*, 2021; Ferri *et al.*, 2023; Bitetti and Huber, 2023).

The remainder of the study is organized as follows. The next section

introduces prior literature and develops the hypotheses. Then, we describe the research design, including the sample, data collection, methodology, variables, and tests. The results are discussed in Section 4, while Section 5 offers some concluding remarks and implications for policy and practice.

2. Assessment of prior studies

The significance of entrepreneurial initiatives for economic prosperity has generated a growing debate among academics (Robinson *et al.*, 1991; Hatten and Ruhland, 1995; Matlay and Mitra, 2004; Kuratko, 2005; Matlay, 2006; Stuetzer *et al.*, 2013; Gabbianelli *et al.*, 2021; Bitetti and Huber, 2023), due to their impact on economic prosperity and innovation (Turker and Selçuk, 2009; Nowiński *et al.*, 2017; European Commission, 2016).

Relevant research evaluated the factors (*i.e.* intentions, motivations, previous experiences, education, attitudes, personal traits, and social contexts) that play a key role in the development of entrepreneurial initiatives (Krueger *et al.*, 2000; Politis, 2005; Zhao *et al.*, 2005; Harris and Gibson, 2008; Hussain *et al.*, 2008, Minniti, 2008; Martin and Osberg, 2007; Abu-Saifan, 2012; Baum *et al.*, 2014; Omorede *et al.*, 2015). On the other hand, Iwu *et al.* (2016) argue that sufficient emphasis needs to be placed on entrepreneurship education and practical entrepreneurship schemes (such as mentorship programs), whereas Padilla-Angulo (2019) offers empirical verification of the pivotal roles played by the student societies and associations in increasing awareness about Entrepreneurship amongst first-year students.

Forming, the author argues, appropriate attitudes at the very beginning increase the likelihood of EI. The entrepreneurial initiative as a potential outcome of the degree makes it a measurable determinant of the academic success of students, and it is crucial to all stakeholders involved as it can help universities modify their curricula and allocate resources accordingly. Relevant literature addresses a wide spectrum of interests, covering philosophical and ethical predicaments, the issue of academic versus professional aspirations, requirements proposed by professional bodies and practice, assessment criteria and learning objectives (see Ingram and Howard, 1998; Apostolou *et al.*, 2001; McPhail, 2004).

Earlier studies attempted to discover the determinants of EI (*e.g.*, Ferri *et al.*, 2019) through reference to the entrepreneurs' personal traits. Such an approach, despite still being relevant and having provided interesting insights, has now been superseded by the awareness that alone, they are not sufficient to explain entrepreneurial intention. Indeed, while they are still relevant and thought-provoking in explaining entrepreneurs' success, they also do not show a converging pattern (Shook *et al.*, 2003), needing to be interpreted by looking at additional elements (Carsrud and Brannback,

2011). For instance, the linkage between ideas and actions (Carsrud and Brannback, 2011) fostered two major theoretical approaches, namely the Entrepreneurial Event Model (EEM) and Ajzen's TPB (Enkel and Bader, 2016). In other words, intentionality is the outcome of intentional behavior or the antecedent of planned Entrepreneurial behavior (Krueger, 1993). Entrepreneurial Intention is, in turn, determined by attitudes, and attitudes are affected by "exogenous influences" such as traits and situational variables (Ajzen, 1991; Krueger *et al.*, 2000).

In particular, Ajzen's TPB (1991) interprets entrepreneurial behavior in terms of attitude toward it, subjective norms, and perceived behavioral control. Ajzen (1991) argues that individuals' actions are driven by their attitude toward a given behavior (behavioral beliefs), subjective norms (normative beliefs), and perceived behavioral control (control beliefs) (Ajzen and Fishbein, 1980). Behavioral beliefs represent an individual's perception of the consequences of a particular behavior and their attractiveness. Normative beliefs can be understood through reference to the social norms featuring the context, which shapes the perceived reaction that a behavior induces in other people. Control beliefs entail the perceived behavioral control that the individual has over their behavior, and they are strongly interrelated to the perceived skills and abilities that the individual has or can develop (Almobaireek and Manolova, 2012; Carey *et al.*, 2010).

However, more research is required to comprehend what are the determinants of entrepreneurial behaviors (Di Paola *et al.*, 2017; Ferri *et al.*, 2023), especially if the focus is on younger people and students, as it involves manifold emotional concerns and specifically refers to educational programs (Turker and Selçuk, 2009).

Specifically, educational programs play a prominent role in the promotion of entrepreneurial initiatives, also taking into account the effects of different social and cultural contexts (Nowiński *et al.*, 2017; Liñán *et al.*, 2011). Literature, practice, and policy-makers agree that the challenges of the constantly evolving economic ecosystem(s) require an effort by young people to develop an entrepreneurial attitude, apply entrepreneurial rationale, flexibility, proactivity and adaptability in their daily work and life (Schlaegel and Koenig, 2014; Enkel and Bader, 2016).

In this regard, Universities have traditionally been recognized as key contributors to societal and economic progress through their focus on knowledge dissemination (Moscardini *et al.*, 2022). In more recent times, they have also played a significant role in fostering entrepreneurial activities such as the creation of spin-off companies (Guerrero *et al.*, 2016; McAdam *et al.*, 2018). Thus, the academic setting is viewed as an ideal environment for nurturing students' entrepreneurial skills, thereby supporting their entrepreneurial intention concerning start-up ventures (Bazan *et al.*, 2020; Tan *et al.*, 2020).

For this reason, HEIs are generally broadening their roles to adopt a more entrepreneurial approach, thereby driving knowledge-based economic growth (Pugh *et al.*, 2022). The European Commission (2021) specifically claims to create new employment opportunities via the boost of an entrepreneurial approach to learning systems.

Moreover, considering TPB-informed research, Schlaegel and Koenig (2014) suggest that specific contextual elements could offer new insights of crucial importance to our understanding of the entrepreneurial pathway (Brandl and Bullinger, 2009). Indeed, as highlighted by Huisman *et al.* (2015), the educational programs provided by universities and HEIs in general may present high heterogeneity, and country differences could be pivotal to understand the students' entrepreneurial intention.

3. Hypotheses development

Concerning the attitude (ATT) toward a behavior, it represents the individual's evaluation of their willingness, their desire, to behave in a certain manner. As for the entrepreneurial intention, it refers to the "emotional" outlook toward creating their own businesses (Ferri *et al.*, 2019). According to Ajzen (1985), this construct allows us to measure the expectations of people in the sample about their ability to do something, and it refers to the degree to which a person has a favorable evaluation of the outcome of the behavior in question (Enkel and Bader, 2016). If the outcomes are largely desirable, there will be a stronger intention to perform a particular behavior. According to Schlaegel and Koenig (2014), the impact of ATT on entrepreneurial intention depends in particular on the level of student conviction considered as the intention of an individual to perform an action because that one is the best for him.

With specific reference to entrepreneurial intention, ATT can be considered as the desirability of starting a new venture, so a positive perception of expected outcomes is typically associated with the act of starting one's own business (Zhao *et al.* 2005). According to several authors, ATT is the most important factor explaining entrepreneurial intention, showing the central role of this construct in students' decision to become entrepreneurs in different countries (Kolvereid, 1996; Douglas and Shepherd, 2002; Van Gelderen *et al.*, 2008; Liñán *et al.*, 2011). Based on this argument, we develop the first hypothesis (H1) as follows:

H1. There is a positive relationship between attitudes and entrepreneurial intention

Regarding subjective norms (SN), this construct allows us to under-

stand the importance of the perceptions of performing a particular behavior for the social groups that students consider important (Ajzen, 1985). What should be noted is that usually, these normative beliefs depend on the strength of the students' motivation to comply with them (Ajzen, 1985).

According to previous literature, SN can have different effects on behavioral intention (Krueger, 1993, 2000; Kolvereid, 1996; Van Gelderen *et al.*, 2008). For example, Krueger *et al.* (2000) found that the effect of social support is not related to entrepreneurial intent for North American students. The same result was shown by Liñán and Chen (2009), who, carrying out a comparative study, found a good relation between SN and EI in Scandinavian students. What should be noted is that in those contexts with more uncertainty and difficulties, social support should play a significant role in the decision to be an entrepreneur. Based on the previous literature, we can state the following hypothesis (H2):

H2. There is a positive relationship between subjective norms and entrepreneurial intention

With reference to perceived self-efficacy (SE), it refers to students' perception of their perceived self-efficacy in performing the behavior (Ajzen, 1985). What should be noted is that SE rarely reflects actual control accurately so, according to different authors, in the case of high volitional control, behavioral intention should be the only predictor of the final behavior (Langer, 1975; Brewer and Silver, 1978; Meyerson *et al.*, 1996).

However, since students do not have full control, self-efficacy should be additionally and independently predictive of behavior. This means that action depends not only on intention but also on non-motivational factors, such as the availability of opportunities and resources.

Entrepreneurship researchers largely highlighted the pivotal role of the self-efficacy concept in shaping individual intentions toward entrepreneurship (Strecher *et al.*, 1986; Harackiewicz *et al.*, 2002). Indeed, it was usually associated with opportunity recognition and risk-taking (Krueger *et al.*, 2000; Di Paola *et al.*, 2017) as well as career choice (Bandura, 1986; Harackiewicz *et al.*, 2002; Turker and Selcuk, 2009). What should be noted is that previous authors found a positive relation between SE and EI. Given these arguments, we state the following third hypothesis (H3):

H3. There is a positive relationship between self-efficacy and entrepreneurial intention

We integrated TPB with perceived skills that students expect to improve at university (SKI)[2]. Indeed, according to different authors, the educational

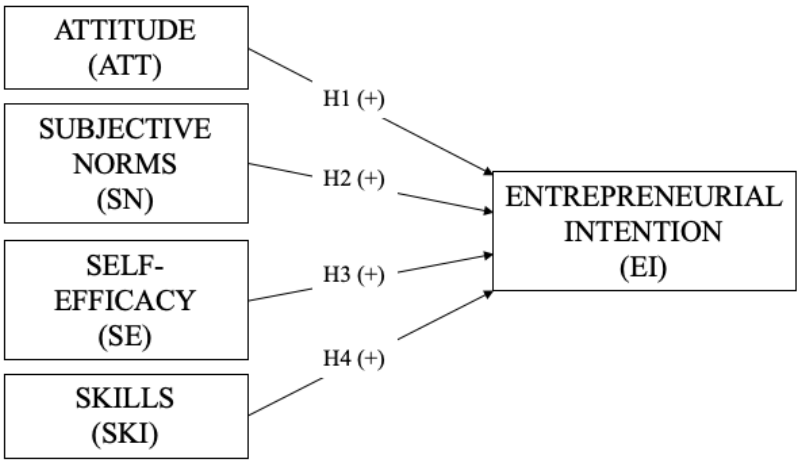
[2] It is worth noting that we consider the general skills that universities aim

system is a relevant tool for fostering early entrepreneurial skills (do Paço *et al.*, 2011; Turker and Selçuk, 2009; Pihie and Akmaliah, 2009; Di Paola *et al.*, 2017). The development of managerial knowledge, skills, and competencies can play an important role in students' intention to initiate new ventures (Van Praag and Versloot, 2007; Wilson *et al.*, 2007; Pihie and Akmaliah, 2009). Several authors show that educational activity increases student entrepreneurial intention (*e.g.*, Hmieleski and Corbett, 2006) by reducing people's uncertainty (Pihie and Akmaliah, 2009) and the risk of their own firms' default (Markman, 2007; Miller *et al.*, 2009). The relationship between skills and business venture success is empathized by do Paço *et al.* (2011). The authors conclude that an entrepreneurship educational program could contribute to the development of competencies related to entrepreneurship, improving the number of new firms. Also, Florin *et al.* (2007) provide evidence that students are motivated to improve their managerial skills to better address the complexity of creating their businesses. More generally, according to previous literature[3], universities' skills (SKI) are perceived as an important factor in encouraging students to address new business ventures. Based on this argument, we develop the following hypothesis (H4):

H4. There is a positive relationship between skills acquired via University education and entrepreneurial intention

Overall, for the purpose of clarity, the following Fig.1 provides a representation of the model proposed based on our research hypotheses.

Fig.1 – The model of analysis



[3] Overall, the construct SKI has been realized by taking into account previous literature that has provided a number of contributions looking at each single component but failing in offering a more systemic view. Appendix A summarizes the main findings available to date.

3. Methodology

3.1 The questionnaire

To test our research hypotheses, we follow the approach of previous authors (*i.e.,* Fayolle *et al.*, 2014; Kautonen *et al.*, 2011, 2015; Ferri *et al.*, 2023). More specifically, we developed a four-point Likert-based questionnaire: (1) strongly disagree, (2) disagree, (3) agree, (4) strongly agree. We decided to employ an even scale to avoid the *"central tendency bias"* (a situation in which the respondent decides to choose ever the midpoint, typical of the odd scale). This is in line with previous authors who demonstrate that the central tendency to choose "the middle way" is mitigated when questionnaire items are clearly categorized (Si and Cullan, 1998).

The questionnaire[4] was divided into two parts. The first part contains the personal data of the students interviewed. The second part covered the TPB dimensions using 23 different questions. More specifically, the second one includes questions concerning the identification of the ATT (4 questions), SN (4 questions), SE (3 questions), SKI (10 questions), and EI (2 questions). After this design phase, we disseminated the questionnaire to an initial sample of 60 subjects of different nationalities to test the scale.

3.2 Scale Validation

To ensure consistency and unidimensionality of the scales, we carry out an initial reliability study and an exploratory factor analysis of principal components (PCA) (Hu and Bentler, 1995; Brown, 2015). This procedure was used to suppress indicators with a correlation lower than 0.3 or whose exclusion increased Cronbach's Alpha value, which should not be lower than 0.7 (Bland and Altman, 1997). On this basis, we eliminated two factors of SE and one factor of EI. No other factors were eliminated in other constructs. Our tests show an overall alpha value of 0.84, which is considered good. Furthermore, we carried out exploratory factor analyses using varimax rotation with Kaiser normalization (Kaiser, 1970; McDonald, 1981; Byrd, 2000) to verify if all the concepts were formed by just one factor. These factors explain more than 59% of the variance for all factors, and it is considered acceptable.

Also, several measures of reliability were performed on the overall sample. More specifically, we obtained the following results: average block VIF (AVIF) of 1.246 (considered acceptable if <= 5, ideally <= 3.3), the average full collinearity VIF (AFVIF) was 1.406 (acceptable with values less or equal to 5, ideally <= 3.3). Finally, the R-squared contribution ratio (RSCR)

[4] Overall, Appendix B provides details about items included in the questionnaire.

is 1.000 (acceptable if >= 0.9, ideally = 1). All these indexes suggest that the overall model fit is considered acceptable.

3.3 Questionnaire dissemination and final sample

Literature suggests that students represent a population of people potentially interested in promoting an entrepreneurship activity (Henderson and Robertson, 2000; Galloway *et al.*, 2005; Harris and Gibson, 2008). We disseminated the questionnaire online, sending it randomly to 3,500 students from five different European universities in France, Italy, Lithuania, Poland, and Spain, belonging to the European University Foundation network. We reached both business and non-business students because the paper aims to examine the effect of skills developed during the academic journey on entrepreneurial intention. Non-business students were primarily engineers and medical students. All students were undergraduates. The dissemination phase lasts for three months. After removing the incomplete form, we reach a final sample of 1,730 students with an overall response rate of 49.4%. The following Tab.1a clarifies the final sample formation, while Tab.1b shows the details of the sample composition.

Tab.1a – Sample formation

	France	Italy	Lithuania	Poland	Spain	Total
Form Sent	250	1.530	130	970	620	3.500
Response rate	40%	65%	28%	42%	46%	52%
Form received	101	993	37	403	287	1.821
Incomplete form	7	52	7	3	22	91
Final Sample	94	941	30	400	265	1.730

Tab.1b – Sample composition

	France		Italy		Lithuania		Poland		Spain		Total	
Gender												
	n	%	n	%	n	%	n	%	n	%	n	%
Male	38	40.43	498	52.92	6	20.00	104	26.00	62	23.40	708	40.90
Female	51	54.26	441	46.87	24	80.00	296	74.00	199	75.09	1,011	59.05
No response	5	5.32	2	0.21	0	0	0	0	4	1.51	11	0.05

Business students												
	n	%	n	%	n	%	n	%	n	%	n	%
Yes	64	68.09	451	47.93	21	70.00	323	80.75	123	46.42	982	56.76%
No	10	10.64	490	52.07	9	30.00	77	19.25	115	43.40	701	40.52%
No response	20	21.28	0	0	0	0	0	0	27	10.19	47	2.72%
Average age	19.92		20.37		20.03		20.97		20.19		20.3	
N. Sub sample	94		941		30		400		265		1,730	
% on total sample	5.43%		54.30%		1.73%		23.13%		15.31%		100%	

To ensure the homogeneity of the overall sample, we perform the t-test (untabulated). The test shows the absence of statistically significant differences for gender, typology of students, and age. As Tab.1b shows, all the sub-samples are homogeneous in terms of gender and typology of students. This allows us to investigate the entrepreneurial intention in different countries, avoiding the risk of differences in results depending on potential heterogeneity across sub-samples.

4. Findings and discussion

To test our hypotheses, we performed the structural equation modeling methodology (Bagozzi *et al.*, 1991). More specifically, to provide a deeper explanation of the phenomenon, showing differences and similarities between different countries, we perform seven SEM (one for each country and one for the overall sample). The following Tab.2 shows descriptive statistics of our questions, while Table 4 displays the main findings of the analysis.

Tab.2 – Descriptive statistics of the theoretical construct

Construct	Variable	Mean	Std. Dev.	Min	Max	Obs
Skills	SKI1	3,255	0,922	1	4	1,730
	SKI2	3,189	0,909	1	4	1,730
	SKI3	3,205	0,958	1	4	1,730
	SKI4	3,131	1,007	1	4	1,730
	SKI5	3,122	0,901	1	4	1,730
	SKI6	2,987	0,995	1	4	1,730
	SKI7	3,058	0,931	1	4	1,730
	SKI8	2,923	0,935	1	4	1,730
	SKI9	2,732	0,982	1	4	1,730
	SKI10	2,904	0,982	1	4	1,730

Attitude	ATT1	2,954	0,886	1	4	1,730
	ATT2	2,978	0,874	1	4	1,730
	ATT3	2,958	0,935	1	4	1,730
	ATT4	3,004	0,901	1	4	1,730
Subjective norms	SN1	2,878	0,956	1	4	1,730
	SN2	2,814	0,932	1	4	1,730
	SN3	2,872	0,958	1	4	1,730
	SN4	2,812	0,904	1	4	1,730
Self-efficacy	SE1	2,782	0,918	1	4	1,730
	SE2	2,712	0,955	1	4	1,730
	SE3	2,504	0,968	1	4	1,730
Entrepreneurial intention	EI1	3,080	0,902	1	4	1,730
	EI2	3,063	0,917	1	4	1,730

The average value of 3.05 on SKI questions (ranging from 2.73 to 3.25) suggests that European students perceive the skills acquired during the university as pivotal factors in pursuing potential business ventures. Concerning ATT, SN and SE, although mean values are slightly lower than SKI (ranging from 2.50 to 3.00 overall), they confirm that students consider such factors as relevant predictors of EI. Lastly, values of EI ranging from 3.06 to 3.08 indicate that students in our sample perceive the entrepreneurial career particularly attractive and that they are likely prone to invest certain effort to achieve such a vocation.

Overall, as Table 2 shows, the mean of the responses is quite similar in all the theoretical constructs. This means that, for each construct, the different questions help to explain the theoretical construct.

Tab.3 – SEM findings

	France	Italy	Lithuania	Poland	Spain	Overall Sample
SKILL → EI	0,50*	0,49*	0,33*	0,41*	0,46*	0,44*
ATT → EI	0,10***	0,16*	0,31***	0,17*	0,06***	0,22*
SN → EI	0,52*	0,16*	0,30*	0,20*	0,22*	0,19*
SE → EI	0,11***	0,19*	0,06***	0,28*	0,30*	0,20*
R-squared	0,57	0,51	0,74	0,50	0,54	0,42
Adjusted R-Squared	0,55	0,51	0,70	0,49	0,53	0,40
AVIF	1,39	1,17	1,25	1,16	1,30	1,20

** P<0,01 ** P<0,05 ***P<0,1*

Results from SEM analysis are shown in Table 3. Specifically, the overall model explains the 42% of the total variance of the sample and the results document that ATT, SN, SE and SKI are all statistically significant predictors of students' motivation to engage in entrepreneurial activity (Adjusted R-squared 0.405 with $p < 0.01$). It is worth noting that we carried out the same analysis, also excluding SKI, and we found a lower R-squared for all the sub-samples and for the overall analysis (Adjusted R-squared 0.381 with $p < 0.01$). This means that the SKI construct aids in explaining the entrepreneurial intention of EU students.

More precisely, concerning ATT, our findings show a positive relation with entrepreneurial intention ($b = 0.22$ with $p < 0.01$). This result is compliant with previous literature (Van Gelderen *et al.*, 2008; Liñán *et al.*, 2011; Schlaegel and Koenig, 2014), confirming the great importance of self-perception in entrepreneurial actions. As a result, H1 is confirmed.

Regarding the SN, we found a positive relation with entrepreneurial intention ($b = 0.19$ with $p < 0.01$) in compliance with previous authors according to whom social support plays an important role in students' decision to be entrepreneurs (Kolvereid, 1996; Van Gelderen *et al.*, 2008; and Liñán and Chen, 2009). This finding is not compliant with those of Krueger (1993 and 2000), according to whom subjective norms do not influence EI. Hence, we also confirm our HP2.

With reference to SE, our results show a positive relation with EI ($b = 0.20$ with $p < 0.01$). This result is compliant with previous research (Strecher *et al.*, 1986; Krueger *et al.*, 2000; Harackiewicz *et al.*, 2002; Fayolle and Gally, 2005; Turker and Selcuk, 2009; Di Paola *et al.*, 2017). As a result, hypothesis 3 is confirmed.

What should be noted is that the main construct that affects the students' intention to be entrepreneurs is represented by SKI. Indeed, as previously hypothesized in hypothesis 4, there is a positive and strong impact of the SKI ($b = 0.44$ with $p < 0.01$) in relation to EI.

This finding is compliant with those of several authors who demonstrated the importance of university skills in new venture startups. Also, this result suggests that students' intention to be entrepreneurs is strongly related to the skills that they expect to learn during their university pathway.

Specifically, the influence of skills acquired through learning programs provided by HEIs significantly overcomes the effects of other TPB constructs. This result hints that the university environment promotes the development of both tangible and intangible skills, which in turn can enhance the entrepreneurial intention.

While these results confirm that the multiple dimensions from Ajzen's TPB can significantly shape EI, the fact that skills have a stronger impact on EI than subjective norms or self-efficacy emphasizes the importance of pedagogy in shaping the entrepreneurial mindsets of students. Also, unlike attitudes, which are often shaped by broader societal or personal be-

liefs (Ajzen, 1985), skills represent a more direct and actionable component of entrepreneurship that can be nurtured in a structured educational environment. For instance, this suggests that curriculum design, hands-on experiences, and university resources can significantly affect the students' intention toward entrepreneurship.

Moreover, Our findings validate and extend the recommendations of previous studies to the broader context of university education (Trivedi *et al.*, 2016; Ferri *et al.*, 2023).

6. Additional test

Previous analyses show the existence of minimum differences in entrepreneurial intention and skills. To determine whether these differences are statistically significant, an additional analysis was conducted considering these two theoretical constructs. To this aim, we performed the t-test, a statistical method used to assess whether the difference between the responses of two groups is statistically significant.

The t-test is a statistical method used to determine if there is a significant difference between the means of two groups. It helps to assess whether the observed differences are likely due to chance or represent true differences in the populations being compared.

Each theoretical construct consists of several questions. To use the t-test, we decided to take the average of the responses to these questions. The following tables 4 and 5 show the t-test results for skills and EI.

Tab. 4 – Differences in SKI between different countries

T-test analysis on mean values for Skills				
SKI	Min	Max	Difference	t-statistic
FRANCE vs (ITALY)	1	4	3.282	123.65
FRANCE vs (LITHUANIA)	1	4	3.279	121.61
FRANCE vs (POLAND)	1	4	3.268	124.12*
FRANCE vs (SPAIN)	1	4	2.691	94.12
ITALY vs (LITHUANIA)	1	4	3.661	100.03
ITALY vs (POLAND)	1	4	3.282	107.07*
ITALY vs (SPAIN)	1	4	3.279	105.11
LITHUANIA vs (POLAND)	1	4	3.268	99.97
LITHUANIA vs (SPAIN)	1	4	2.691	97.03
POLAND vs (SPAIN)	1	4	3.661	100.01

** P < 0.1 ** P < 0.05 ***P < 0.001*

Tab. 5 – Differences in EI between different countries

T-test analysis on mean values for Entrepreneurial Intention				
EI	Min	Max	Difference	t-statistic
FRANCE vs (ITALY)	1	4	3.44	77.53
FRANCE vs (LITHUANIA)	1	4	3.29	80.12
FRANCE vs (POLAND)	1	4	3.36	88.64
FRANCE vs (SPAIN)	1	4	2.82	74.23
ITALY vs (LITHUANIA)	1	4	3.84	79.12
ITALY vs (POLAND)	1	4	3.34	94.61
ITALY vs (SPAIN)	1	4	3.44	72.77
LITHUANIA vs (POLAND)	1	4	3.32	82.73
LITHUANIA vs (SPAIN)	1	4	2.82	84.51
POLAND vs (SPAIN)	1	4	3.73	93.45

** P < 0.1 ** P < 0.05 ***P < 0.001*

The test depicts that few statistically significant differences arise in SKI and EI. More specifically, our results show the existence of significative differences in SKI between Italy vs Poland and France vs Poland (both with p-value < 0.1). Also, considering entrepreneurial intention, the results of the t-tests do not indicate statistically significant differences.

The lack of significant country-based variation in the findings can be attributed to several factors. First, the likely homogeneity in the educational programs related to entrepreneurship across these countries may explain the consistency in the results. Indeed, although cultural, economic, and policy environments differ across nations, the educational structures and resources available to students in higher education institutions (HEIs) tend to follow similar pedagogical models, especially in the European context (Gunn, 2020; Ratten, 2020; Kanniainen and Pekkola, 2023).

5. Concluding remarks

This paper addresses the growing debate arising in the wake of the multiple initiatives worldwide to support the development of entrepreneurial initiatives among younger people and attempts to further explore the issues concerning entrepreneurship in their multifaceted stances. It moved from the awareness of the importance played by HEIs education on the ground that entrepreneurship can be and should be taught and learned to enable society to benefit from the full potential of its people (Krueger

et al., 2000; Politis, 2005; Zhao *et al.*, 2005; Minniti, 2008; Baum *et al.*, 2014; Omorede *et al.* 2015). The paper argues that research so far has overlooked the crucial role of learning systems provided by universities and HEIs in shaping knowledge, skills, and attitudes, which are important for employability, active citizenship, and new business creation (Markman, 2007; Miller *et al.* 2009; Turker and Selcuk, 2009; Raposo and do Paço, 2011). Thus, the starting idea of the current study was that the chance to realize impactful initiatives and design proper and effective programs is dependent upon the full understanding of the determinants of EI. For this reason, we employed Ajzen's TPB to comprehend whether and how the characteristics of educational programs affect EI, focusing on a multi-country sample of graduate and undergraduate students.

Our findings support the pivotal role of skills acquired during university studies in leading entrepreneurial intention across different educational settings.

Specifically, the impact of education in the formation of EI has been analyzed across different countries, and hence, inferences made from the study may have considerable implications for potential cross-country policies related to the university system. What clearly emerged is that while the impact of internal variables that have been identified as important EI antecedents are at a comparable level in each sample, huge differences are visible in the perceived environment. Thus, one may argue that different universities may have different degrees of conduciveness toward entrepreneurial development.

It is worth noting that we considered the skills acquired during university studies, not explicitly including courses in entrepreneurship. Hence, our inferences comply with the fact that overall learning systems provided by European HEIs may still affect the students' entrepreneurial intention, as they generally foster the development of employability, leadership, creativity, and critical thinking skills (Ferri *et al.*, 2023).

Moreover, these findings reinforce the view that the comprehension of the role played by environmental factors is paramount. These latter tend to explain why the connection between EI antecedents and career aspirations is not deterministic in nature. Our focus here is the variety of social, economic, and educational contextual variables that may influence people's entrepreneurial realization. Our analysis, in line with Béchard and Toulouse (1998), of course, sheds light on the fact that a very important external factor that influences the students' entrepreneurial intention is found in the universities and their didactic activities.

On these bases, we contribute to the academic and policy debate about EIs, education and training, offering a comprehensive investigation of the factors that affect students' intentions and motivations to undertake an entrepreneurial activity. Moreover, additional results reveal an absence of

pervasive country-specific differences, suggesting that European Union (EU) educational initiatives are successfully harmonizing the educational environment across different countries. Policymakers should continue to support these initiatives as they provide a uniform framework that allows students across different countries to acquire comparable entrepreneurial skills and competencies. In turn, this helps to ensure that no country is at a disadvantage in fostering entrepreneurship through education.

Yet, the paper strongly suggests the importance of early industrial placements (*e.g.*, implying frequent and productive relationships between the University and the entrepreneurial context), guest speakers, and practice-oriented academics (*Pracademics*). Specifically, the study hints the idea that the Small and Medium Enterprises (SMEs), which are particularly in touch with local communities, can co-design with universities to create programs that align academic curricula with industry needs. Also, understanding the positive impact of university education on entrepreneurial intention allows SMEs to anticipate trends in graduate skills and aspirations, ensuring they remain competitive in attracting top talent.

The paper allows us to signal that to support the necessary (slowly) changing process of the mindsets in the game, there are important aspects that deserve attention. The reference is to curricula and teaching approaches, with special regard to the ways through which designing an entrepreneurial curriculum and the evolving teaching methods and approaches; the ways to embed entrepreneurship education; how to manage strategic change and leadership; how to engage economic actors. The paper highlights that we, as researchers, have the responsibility to make such engagement happen, going beyond what findings tell us and trying to understand whether there is something that we are losing and why.

The main messages that on this basis can be transferred for policy-making purposes relate to a profound re-thinking of the established patterns of education, toward the development of logics of awareness, engagement, hybridization of the actors involved, dialogue, practice-based education, theory-driven practice, as well as search for a common discourse between the actors involved and substantive actions.

We acknowledge that the inferences made in this study are solely based on the skills-intention link. As suggested by Fayolle *et al.* (2014), values and motivations toward EI do not require subsequent entrepreneurial action. We hence encourage further research to explore the intention–action link, which would inform HEIs and policymakers on how to better understand any potential discrepancy between students' EI and their effective behavior.

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Appendix A – Literature on the SKILLS construct

Skills	Skills' description	Prior studies on skills' outcomes
Communication skills	ability to listen, express and present ideas, to persuade, to negotiate	Locke and Latham (1990), Ray (1993), Bandura (1997), Baum and Locke (2004), Giunipero *et al.* (2005)
Entrepreneurial skills	flexibility, opportunity seeking, risk-taking	Ray (1993), Baum and Locke (2004), Giunipero *et al.* (2005), Kutzhanova *et al.* (2009), St Jean and Audet (2012)
Information, media and technology skills	ability to obtain and process information	Giunipero *et al.* (2005), Riemer (2007), Koh and Abbas (2015)
Intercultural skills	command of more than one language, work in culturally diverse teams	Baum and Locke (2004), Kutzhanova *et al.* (2009)
Interpersonal skills	ability to work in a team, ability to manage conflicts, networking	Ray (1993), Giunipero *et al.* (2005), Kutzhanova *et al.* (2009)
Learning skills	ability to learn independently, curiosity and drive for continuous learning	Ray (1993), St Jean and Audet (2012)
Personal skills	self-confidence, positive attitude, strong work ethics	Locke and Latham (1990), Ray (1993), Bandura (1997), Baum and Locke (2004)
Technical skills	professional field related skills to accomplish specific tasks	Giunipero *et al.* (2005), Riemer (2007), St Jean and Audet (2012)
Thinking skills	critical, analytical, strategic thinking	Ray (1993), Bandura (1997), Baum and Locke (2004), Giunipero *et al.* (2005), Kutzhanova *et al.* (2009),
Virtual collaboration skills	ability to work productively in a virtual team/environment	Riemer (2007), Koh and Abbas (2015), Pun (2017)

Appendix B – Questionnaire

Theoretical construct	Label	Question
General part	GE1	Country of origin
	GE2	Country of University where you currently study
	GE3	Age
	GE4	Gender
	GE5	Field of studies
SKILLS	SKI1	I consider communication as fundamental in helping me to set up a business
	SKI2	I consider personal skills as fundamental in helping me to set up a business
	SKI3	I consider interpersonal skills as fundamental in helping me to set up a business
	SKI4	I consider intercultural skills as fundamental in helping me to set up a business
	SKI5	I consider learning skills as fundamental in helping me to set up a business
	SKI6	I consider entrepreneurial skills as fundamental in helping me to set up a business
	SKI7	I consider smart-thinking as fundamental in helping me to set up a business
	SKI8	information and media skills as fundamental in helping me to set up a business
	SKI9	I consider virtual collaboration skills as fundamental in helping me to set up a business
	SKI10	I consider technical skills as fundamental in helping me to set up a business
ATTITUDE	ATT1	For me, to become an entrepreneur would be excellent
	ATT2	For me, to start entrepreneurial career would be excellent
	ATT3	If I had opportunity and resources, I would love to start a company
	ATT4	For me to start-up a new firm would be excellent
SUIBJECTIVE NORM	SN1	People whose opinions I value would approve my intention to be entrepreneur intention to become entrepreneur
	SN2	People whom I know would think of my intention to become entrepreneur as excellent
	SN3	My family would think of my intention to become entrepreneur as excellent
	SN4	According to my fellow students to become an entrepreneur would be excellent

SELF EFFICACY	SE1	I believe that I have the skills to become an entrepreneur
	SE2	I believe I have the ability to become entrepreneur
	SE3	If I tried to start a business, I would have a high probability of being successful
ENTREPRENEURIAL INTENTION	EI1	I could do anything to be an entrepreneur
	EI2	My career objective is to become an entrepreneur

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DEVELOPING A CONCEPTUAL FRAMEWORK FOR MEDIUM-SIZED ENTERPRISE INTERNATIONALIZATION: AN INCREMENTAL AND CIRCULAR PROCESS-ORIENTED APPROACH TO EFFECTIVE EXPORT MANAGEMENT

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Abstract

Purpose. *This study aims to provide a comprehensive and structured guide for Medium-sized Enterprises preparing to develop international markets. It introduces an incremental and circular four-step export management process that includes export readiness assessment, market selection, export business plan development, and implementation.*
Design/methodology/approach. *The study integrates various strategic tools and theoretical perspectives, including Porter's Five Forces, PESTEL analysis, SWOT analysis, and the CANVAS model, to create a process-oriented framework tailored for medium-sized enterprises internationalization. The research draws from existing literature and practical insights to construct a detailed and actionable guide for practitioners.*
Findings. *The proposed incremental and circular four-step export management process delineates a structured pathway for medium-sized enterprises to navigate internationalization effectively. It emphasizes the importance of ongoing monitoring, value chain adaptation, and collaboration, providing a process-based framework that challenges traditional theories of gradual market knowledge accumulation and network reliance. The study highlights the Export Business Plan as a central element in the internationalization process.*
Practical and Social implications. *The framework offers practical implications for medium-sized enterprises training and development, providing a foundational structure for preparing employees and practitioners for international roles. It advocates for a balanced, data-driven approach that integrates subjective relationship-building with objective market research and strategic planning, enhancing resource utilization and increasing the likelihood of successful market entry. Additionally, the study suggests that internationalization should be viewed as a strategic, structured initiative, enabling Medium-sized Enterprises to anticipate challenges, manage risks, and remain agile in fluctuating market conditions.*
Originality of the study. *This study contributes a novel perspective by positioning the Export Business Plan as a central element of the internationalization process, enriching existing theoretical frameworks, and encouraging further research into the strategic planning aspects of medium-sized enterprises internationalization. It offers a fresh viewpoint that may prompt a reevaluation of traditional stage models, emphasizing flexibility and adaptability in medium-sized enterprises internationalization strategies.*

1. Introduction

The internationalization of medium-sized enterprises is a complex process requiring a strategic approach to address challenges and harness opportunities. Success in this endeavor relies on comprehensive knowledge of foreign markets, including cultural characteristics, consumer preferences, legal systems, and competitive environments. Medium-sized enterprises, defined at the European level as organizations with 50 to 250 employees and annual revenues between 10 and 250 million euros (European Commision, 2003), often operate with lean organizational structures and limited resources. Consequently, efficient management of financial and human capital becomes crucial for navigating international markets (Dabić et al., 2020).

Internationalization has become a necessity for many medium-sized enterprises to ensure growth and survival, particularly in economies like Italy, where exports have been the primary driver of GDP growth since the 2008 financial crisis. Without international trade, Italy's GDP would be lower than its pre-crisis level, emphasizing the importance of global market engagement for economic resilience. Beyond growth, internationalization enhances profitability by improving margins on both the buying and selling sides of operations.

This process impacts both upstream and downstream activities in the value chain. Upstream, internationalization provides access to competitive and diverse raw materials and semi-finished products, reducing supply chain risks and enhancing profitability. It also facilitates collaborations in research and development, fostering innovation and the creation of products that align with evolving customer expectations. Additionally, internationalization can attract capital that supports production capacity expansion (Calabrò et al., 2023; Dominguez & Mayrhofer, 2017).

Downstream, internationalization allows enterprises to diversify revenue streams and reduce reliance on domestic markets while enhancing overall profitability. However, this requires a delicate balance between global expansion and maintaining strong local ties. For medium-sized enterprises, local engagement is crucial, often manifested through partnerships, adherence to high production quality standards, and investments in employee training. These measures help sustain competitive advantages and build trust with stakeholders (Henn et al., 2022).

Medium-sized enterprises also face the challenge of balancing entrepreneurial agility with structured managerial practices (Musso & Francioni, 2019). Their entrepreneurial spirit, often rooted in family ownership and characterized by a culture of innovation and rapid decision-making, allows them to adapt quickly to market changes and seize new opportunities. Simultaneously, adopting advanced managerial practices ensures

operational efficiency, resource optimization, and long-term sustainability. This duality enables medium-sized enterprises to address the complexities of internationalization effectively, leveraging the flexibility of small businesses while benefiting from the structure of larger organizations (Steinhäuser et al., 2021; Zucchella & Scabini, 2007).

Despite the opportunities, internationalization demands significant financial investments in areas such as supply chain management, product adaptation, market research, regulatory compliance, and marketing. These expenditures can strain the limited resources of medium-sized enterprises, requiring careful planning to avoid operational inefficiencies in domestic markets. Moreover, external uncertainties, such as currency fluctuations and political instability, introduce additional risks, underscoring the importance of strategic planning and risk management (Wu & Deng, 2020).

Existing management models tailored to medium-sized enterprises often fail to comprehensively address their unique constraints. Many overlook the interconnected nature of business functions in the internationalization process and do not provide a structured, process-oriented guide that aligns with their needs. This gap highlights the necessity for a streamlined yet comprehensive framework that integrates various strategic tools to facilitate decision-making and resource allocation effectively (Zucchella & Scabini, 2007). This need for innovative and disruptive research models aligns with the observations of Tung et al. (2023), who highlight that the current focus in international business research on consolidating existing knowledge often fails to generate paradigm-shifting insights. They call for frameworks that not only challenge prevailing assumptions but also address the complexities of modern global markets by integrating diverse theoretical perspectives and practical tools.

To address this gap, this paper introduces a structured, four-phase export management framework tailored specifically for medium-sized enterprises. This model provides a systematic roadmap for managing the internationalization process, enabling companies to coordinate business functions, optimize resources, and make informed decisions. Strategic tools such as Porter's Five Forces, PESTEL analysis, SWOT analysis, and the CANVAS model are incorporated to address different aspects of market entry strategies, operational adjustments, and ongoing management (Calabrò et al., 2023; Dominguez & Mayrhofer, 2017).

This framework's flexibility extends to various product categories, including consumer goods, capital goods, and services. Initially designed for consumer goods, it can be adapted to the specific requirements of capital goods and services, ensuring relevance across industries (Kotler & Keller, 2016). Furthermore, the framework emphasizes scalability and circularity, enabling enterprises to adapt it incrementally based on available resources and to refine strategies through continuous monitoring of their Export

Business Plan (Henn et al., 2022).

By providing a structured approach to internationalization, this paper makes several contributions. First, it offers a practical model tailored to the needs of medium-sized enterprises, addressing their resource limitations while enhancing efficiency. Second, it adapts the model to the specific characteristics of different product categories, ensuring its applicability across diverse industries. Lastly, the framework emphasizes the importance of iterative learning and refinement, fostering sustainable internationalization strategies. These contributions position the framework as a valuable tool for medium-sized enterprises navigating the complexities of global markets, in line with Tung et al.'s (2023) call for international business research to embrace dynamic, innovative, and multidisciplinary approaches.

The organization of this paper follows a logical progression. Section 2 examines key internationalization theories relevant to medium-sized enterprises. Section 3 presents the conceptual framework guiding this study. Section 4 details management models for each stage of the framework, including company evaluation, market entry strategies, business model adaptation, and the development and implementation of an Export Business Plan. The concluding sections summarize the findings, discuss limitations, and propose directions for future research.

2. Literature review

The internationalization process for medium-sized enterprises is inherently complex, shaped by various interconnected factors and theoretical perspectives. These theories provide valuable frameworks for understanding how these enterprises navigate the challenges and opportunities of expanding into foreign markets.

The Uppsala Model conceptualizes internationalization as a gradual process where firms incrementally increase their commitment to foreign markets as they acquire experiential knowledge (Johanson & Vahlne, 1977). Medium-sized enterprises typically begin with exports to nearby, culturally similar markets, allowing them to gain familiarity with international business environments while limiting exposure to risk (Lee et al., 2020). As their understanding grows, they expand into more distant and culturally distinct markets, adopting progressively sophisticated entry modes such as joint ventures or wholly owned subsidiaries. While this cautious approach reduces the risk of failure, it may hinder firms from capitalizing on rapidly evolving market opportunities.

In contrast, the Born Global Theory posits that some firms enter international markets almost immediately after establishment, bypassing the incremental approach of the Uppsala Model (Madsen & Servais, 2017). These enterprises, often operating in knowledge-intensive industries, leverage

universal applicability of their products or services, global networks, and modern technologies to compensate for resource constraints. Entrepreneurs with a global mindset and firms with unique resources are particularly well-suited to this model. However, the rapid pace of international growth presents challenges, particularly in managing limited financial and human resources (Mostafiz et al., 2023).

The International New Venture (INV) theory aligns closely with Born Global Theory, emphasizing the early and proactive pursuit of international markets for both resource acquisition and product sales (McDougall et al., 1994). Medium-sized enterprises operating within niche markets often succeed under this model by capitalizing on specialized knowledge or innovative products. Their ability to build and leverage international networks is critical for managing cross-border operations effectively (Puthusserry et al., 2020).

International Entrepreneurship Theory highlights the pivotal role of entrepreneurial traits such as risk-taking, innovativeness, and proactiveness in accelerating internationalization (McDougall & Oviatt, 2000). Medium-sized enterprises that cultivate an entrepreneurial culture and international orientation are better positioned to expand rapidly and successfully into foreign markets (Chebbi et al., 2023). However, this approach also requires caution to avoid pitfalls like overconfidence and overextension, which could strain limited resources.

The Resource-Based View emphasizes the importance of a firm's internal resources and capabilities as key drivers of internationalization strategy (Barney, 1991; Wernerfelt, 1984). Medium-sized enterprises can leverage specialized knowledge, unique competencies, and innovative products to compete effectively despite their size disadvantage (Sen et al., 2023). However, sustaining competitive advantage necessitates continual investment in upgrading these resources and safeguarding them from imitation by competitors.

The Transaction Cost Approach provides a cost-benefit perspective on internationalization decisions (Buckley & Casson, 1976). For medium-sized enterprises, the costs associated with foreign operations—such as administrative, logistical, and coordination expenses—can be substantial. Strategic alliances, joint ventures, and digital platforms offer ways to manage and reduce these costs, making foreign market entry more feasible (Guimarães et al., 2021).

The Eclectic Paradigm, or OLI Framework, integrates ownership, location, and internalization advantages to guide firms in choosing internationalization strategies (Dunning, 1988). For medium-sized enterprises, this framework underscores the need to identify their unique resources (ownership advantages), evaluate the attractiveness of foreign markets (location advantages), and determine the optimal entry mode that balances

control with cost and risk (Lahiri et al., 2020). The challenge lies in dynamically assessing these factors in a rapidly changing global environment.

Together, these theoretical perspectives provide a comprehensive understanding of the internationalization process for medium-sized enterprises. They highlight the strategic decisions and trade-offs that these firms must navigate, offering a foundation for designing effective approaches to expand into global markets, as summarized in Table 1. Each theory contributes unique insights, collectively addressing the diverse pathways and considerations that medium-sized enterprises encounter in their pursuit of international growth.

Tab.1 Comparative overview of internationalization theories for Medium-sized Enterprises
Source: authors' elaboration.

Theory	**Core ideas**	**Implications for medium-sized enterprises**	**Reference**
Uppsala Model	Internationalization is a gradual process where firms deepen foreign market engagement as they acquire experiential knowledge.	Begin with exporting to culturally similar markets to mitigate risks, gradually expanding to more distant and complex markets. Avoid missing opportunities in rapidly evolving markets.	(Hult et al., 2020; Johanson & Vahlne, 1977)
Born Global Theory	Firms can engage in international markets shortly after establishment by leveraging global networks, technologies, and universally applicable products.	Enter international markets early if possessing unique resources or operating in global niches. Challenges include managing rapid growth with limited resources.	(Madsen & Servais, 2017; Rumyantseva & Welch, 2023)
International New Venture (INV) Theory	Firms aim to compete internationally from inception by leveraging global niches, specialized knowledge, and innovative products.	Focus on leveraging international networks and managing cross-border operations efficiently. Ideal for niche markets with innovative or specialized offerings.	(McDougall et al., 1994; Paul & Rosado-Serrano, 2019)
International Entrepreneurship Theory	Entrepreneurial characteristics such as risk-taking, innovativeness, and proactiveness drive rapid and successful internationalization.	Foster an entrepreneurial culture and international orientation while managing the risks of overconfidence and overextension.	(Andersson, 2011; McDougall & Oviatt, 2000)
Resource-Based View	A firm's internal resources and knowledge-based assets are key drivers of internationalization strategies and competitive advantage.	Leverage unique resources and capabilities to overcome size disadvantages but ensure continual upgrading and protection of these assets.	(Barney, 1991; Hertenstein & Alon, 2021; Wernerfelt, 1984)

Transaction Cost Approach	Firms evaluate the cost-benefit of foreign market operations based on administrative, logistical, and coordination costs.	Use alliances, joint ventures, and digital platforms to minimize transaction costs while carefully evaluating the costs and benefits of foreign operations.	(Buckley & Casson, 1976)
Eclectic Paradigm (OLI Framework)	Internationalization depends on ownership, location, and internalization advantages to guide entry strategies.	Assess ownership advantages, location attractiveness, and the balance between control and costs for selecting appropriate entry modes.	(Dunning, 1988; Narula & Verbeke, 2015)

No single theory can provide a definitive roadmap for all medium-sized enterprises; instead, each SME must navigate its unique path, leveraging its distinct capabilities, tolerances for risk, industry dynamics, and the entrepreneurial orientation of its leadership. As such, the art of internationalization for medium-sized enterprises lies in their ability to skillfully interpret and apply these theoretical insights in a way that aligns with their strategic objectives and the realities of their operational contexts.

3. Conceptual framework – four steps export management process

Drawing from the preceding analysis, it becomes clear that medium-sized enterprises must adopt a structured, process-driven approach to internationalization. Such an approach leverages strategic tools to optimize the use of limited resources and address the inherent complexities of operating in foreign markets. The proposed framework comprises four interdependent stages, designed to ensure a systematic progression in international market engagement. Each stage builds on the completion of the previous one, creating a continuous and iterative process that enhances decision-making and operational efficiency.

The first stage involves company and market assessment, focusing on evaluating the firm's internal capabilities and understanding target market dynamics. This foundational step ensures that medium-sized enterprises identify markets that align with their resources and strategic goals. The second stage addresses market entry strategies and business modeling, where companies design tailored approaches to enter selected markets and adapt their business models accordingly. This phase emphasizes aligning entry strategies with both market requirements and internal capabilities.

The third stage centers on the development and monitoring of the Export Business Plan. This document consolidates insights from the first two stages, providing a detailed roadmap for the company's internationalization efforts. Finally, the fourth stage involves implementing the Export

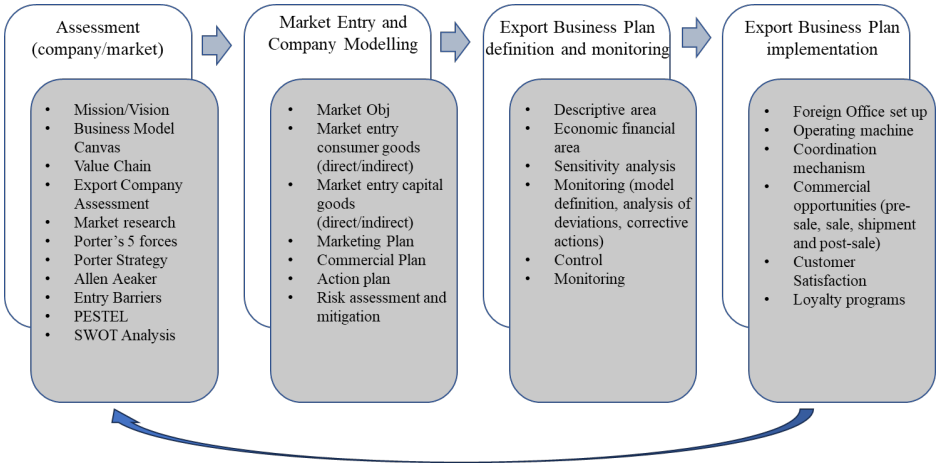
Business Plan, translating strategic goals into actionable steps. Importantly, these stages form a circular process where the outcomes of implementation inform and refine the initial assessment, creating a cycle of continuous improvement and adaptation.

This framework offers a systematic approach that contrasts with the ad hoc methods often employed by medium-sized enterprises. These firms frequently rely on personal networks when entering international markets, which can lead to the inefficient allocation of financial and human resources to suboptimal opportunities. The structured model mitigates such risks by providing a clear strategy for evaluating potential markets, aligning resources, and timing internationalization efforts effectively.

At its core, the Export Business Plan fulfills three critical roles. First, it integrates all research and assessments related to both the company and its target markets, serving as a comprehensive repository of strategic insights. Second, it functions as a guiding document, offering a roadmap for expansion while recommending necessary internal adjustments to align with international objectives. Third, it establishes trust and credibility with external stakeholders, particularly financial institutions that may provide funding for the expansion effort.

This integrated approach ensures that medium-sized enterprises engage with international markets in a manner that is both resource-efficient and strategically sound. By synthesizing internal capabilities, market research, and continuous monitoring, the framework provides a practical tool to navigate the complexities of internationalization and maximize the potential for success. The circular nature of the process fosters ongoing refinement, allowing firms to remain adaptive in the face of evolving market conditions and competitive pressures. Through this model, medium-sized enterprises can shift from reactive, relationship-driven methods to a proactive, strategy-oriented approach, enhancing their competitiveness and sustainability in global markets.

Fig..1 Conceptual framework of the Export Management Process of medium-sized enterprises



Source: authors' elaboration.

4. The four steps export management process

4.1. Company and market assessment

The initial stage of the framework emphasizes a comprehensive assessment of the company and target markets, which is critical for firms at various stages of export readiness. This stage lays the foundation for informed decision-making by evaluating internal capabilities and external opportunities, helping firms systematically address the complexities of internationalization (Cavusgil et al., 2014; Musso & Francioni, 2014).

A key component of this stage is defining the company's Vision and Mission, which establish the strategic direction and operational focus required for successful international expansion. The Vision outlines the firm's long-term aspirations, while the Mission articulates its fundamental purpose and the value it delivers to customers (Kotter, 2007). These elements must align with the objectives of internationalization to maintain coherence across strategic initiatives and market activities. Misalignment between these foundational elements and the internationalization strategy can lead to brand dilution, operational inefficiencies, and stakeholder confusion. For example, a firm committed to environmental leadership may risk damaging its brand by entering markets with weak environmental standards.

Medium-sized enterprises often face challenges in clearly articulating and aligning these foundational elements, yet they are critical for encapsu-

lating the firm's values and guiding its strategic direction (Collins & Porras, 1996). Engaging external consultants can help firms impartially evaluate their local competitive advantages and assess their transferability to foreign markets (Czinkota & Ronkainen, 2007). This process ensures that internationalization strategies are well-grounded in the firm's strengths while adapted to the specific requirements of target markets.

Several tools support this systematic evaluation. The Business Model Canvas (Osterwalder & Pigneur, 2010) facilitates the visualization of how a company creates, delivers, and captures value. By identifying elements such as key partners, value propositions, and customer segments, this tool highlights necessary adjustments for foreign market operations. Its simplicity and comprehensiveness make it especially effective for medium-sized enterprises, enabling collaborative planning between ownership and management.

The Value Chain Analysis (Porter, 1985) identifies the specific activities through which a firm creates value and evaluates their efficiency and transferability to international markets. For example, primary activities like marketing and operations, and support activities like procurement and technology development, can be optimized to enhance competitive advantage abroad.

The Export Company Assessment (Gatto, 2024; Gatto & Sanfilippo, 2024) complements these tools by providing a structured review of the firm's readiness for internationalization. Using a dual-level questionnaire, it captures insights from Ownership and Management perspectives. Ownership-level analysis identifies strategic intent and vision, while Management-level analysis examines operational readiness and production capabilities. The findings are consolidated into an Export Maturity Index, which identifies strengths and gaps, aligning strategic priorities with operational capabilities.

Market evaluation is an equally critical aspect of this stage. A methodical approach to target market identification ensures that resources are allocated effectively. This begins with first-level skimming, a broad assessment of potential markets based on factors such as market size, growth rates, political stability, and the CAGE framework (Cultural, Administrative, Geographic, and Economic distance) (Ghemawat, 2001). The CAGE framework is particularly useful in understanding the barriers and facilitators of market entry by examining cultural differences, regulatory environments, geographic proximity, and economic conditions.

After narrowing the pool of potential markets, firms perform a more focused analysis considering industry-specific factors such as consumer behavior, regulatory frameworks, and initial competition. For companies dealing in capital goods, the assessment also includes understanding the specific needs of target companies, such as increasing production capacity

or replacing outdated equipment.

Once the most attractive countries are identified, the final step involves selecting specific target markets for prioritization. This deeper evaluation assesses entry barriers, partnership opportunities, distribution channels, and competitive dynamics using tools like Porter's Five Forces Model (Porter, 2008) and Aaker's Brand Positioning Pyramid (Aaker, 1996). Additionally, macro-level analyses such as the PESTEL model (Hollensen, 2011) provide insights into political, economic, social, technological, environmental, and legal factors that impact the target market. These tools ensure no critical market elements are overlooked.

The final findings from market evaluations are synthesized and compared with the company's capabilities using the SWOT Analysis framework (Weihrich, 1982). This facilitates a comprehensive understanding of the opportunities and challenges in each target country, guiding strategic discussions and ensuring alignment between internal capacities and external market demands (Francioni et al., 2015).

4.2. Market entry and company modelling

The second stage of the internationalization process involves defining a market entry strategy, an essential step requiring clear objectives and a structured timeline, often spanning approximately three years (Jonsson & Foss, 2011). The choice of strategy depends on the level of investment, human resources, product or service characteristics (consumer versus capital goods, B2C versus B2B), and the type of market entry. These strategies range from direct approaches, involving direct interaction between exporter and customer, to indirect approaches, which rely on intermediaries.

For consumer goods, particularly non-durables, and B2C services, ensuring broad availability across multiple customer touchpoints, such as traditional stores and mass-market retailers, is critical. Direct entry methods may include establishing branches, sales outlets, joint ventures, or local manufacturing facilities (Hollensen, 2011). If a company opts for local investment—either independently or with a partner—it typically faces two options: establishing new operations or acquiring a local firm. Conversely, indirect approaches often involve partnerships with trading companies, importers, distributors, wholesalers, or retailers. Larger firms typically use direct strategies in significant markets, while medium-sized enterprises prefer indirect approaches in less critical markets. However, in strategically important regions, medium-sized firms may adopt direct methods, provided they commit the necessary human and financial resources.

Electronic commerce is increasingly common, supplementing traditional physical channels. Many medium-sized enterprises initially enter new markets using third-party platforms like Alibaba and Amazon to minimize

costs. If market conditions prove favorable, they may develop dedicated e-commerce sites, especially for nearby markets, before transitioning to physical distribution channels.

The purchase process for capital goods, by contrast, involves multiple decision-makers, typically from production and purchasing departments, who evaluate quality, performance, and durability alongside pre-sales (e.g., training) and post-sales (e.g., warranty) support. Given the high cost and complexity of these goods, long-term relationships and robust after-sales service are essential. Distribution strategies often involve direct exports to enable comprehensive customer management throughout the product life cycle. Similar considerations apply to B2B services, where direct strategies are preferred to maintain close customer engagement and ensure service quality.

The choice of entry strategy is fundamentally influenced by the product or service being exported. For consumer goods, considerations include factors such as perishability (e.g., in agrifood) or high assistance requirements (e.g., automotive). For capital goods, priorities include product complexity and the need for ongoing support throughout its life cycle. These characteristics shape distribution channels and service models, underscoring the importance of aligning market entry strategies with the specific requirements of the target market.

Medium-sized enterprises often benefit from adopting flexible, phased entry strategies, which support iterative learning and gradual adaptation (Knight & Liesch, 2016). Initial steps typically involve low-commitment modes like exporting through intermediaries, allowing companies to test the market without significant upfront investment (Johanson & Vahlne, 2009). As firms gain market knowledge and build resource capacity, they can transition to more committed modes such as foreign direct investment or strategic alliances (Madsen & Servais, 2017). This approach minimizes risks while enabling firms to scale operations as they gain confidence and insights.

Flexibility in entry strategies is particularly important for medium-sized enterprises with limited resources. For example, utilizing distributors or agents allows firms to minimize risk and retain the option to exit underperforming markets if needed (Hutchinson et al., 2005; Younis & Elbanna, 2022). As firms build expertise and financial strength, they may consider joint ventures or wholly owned subsidiaries, which offer greater control and potentially higher returns (Agarwal & Ramaswami, 1992). Leveraging local partnerships and networks further supports resource-limited firms, providing critical market insights and operational assistance (Etemad, 2004; Francioni et al., 2017).

The adaptability of market entry strategies is essential, as firms must respond to changes in market conditions, competition, and their internal

capacities. This dynamic approach allows firms to scale operations and capitalize on emerging opportunities (Welch & Luostarinen, 1988). A well-prepared Market Entry Strategy document is vital in this process, detailing the chosen entry methods, associated costs, required investments, and necessary adaptations to the business model (Hill et al., 1990). This document serves as a strategic guide for ownership and management, prioritizing target markets based on the firm's human and financial resources.

Product strategy also plays a central role in market entry decisions. For consumer goods and B2C services, minimal adaptation is often required, focusing instead on distribution and branding. In contrast, capital goods and B2B services typically involve customized solutions, including associated services such as training, maintenance, and insurance. Adapting the value chain—beyond distribution—may also be necessary, impacting logistics, procurement, and customer support. Tools like the Business Model Canvas, used in the assessment phase, are revisited to ensure the business model aligns with the specific needs of the target markets (Osterwalder & Pigneur, 2010).

Business model adaptation is often critical in international markets. It requires alignment across the organization, influencing supply chains, outbound logistics, and financial processes to accommodate market-specific requirements. This alignment ensures efficient resource allocation and effective market penetration, while also addressing the complexities of diverse tax systems, customs regulations, and customer expectations.

The final component of this stage is risk assessment and management. Firms must evaluate and mitigate risks associated with exporting or establishing operations abroad, including potential payment delays, exchange rate fluctuations, shipping damages, and political instability (Catanzaro & Teyssier, 2021; Miller, 1992). Effective risk management not only minimizes potential losses but can also uncover opportunities, especially in capital goods markets, where deferred payments are common due to high transaction values. By combining strategic flexibility with rigorous planning and adaptation, medium-sized enterprises can successfully navigate the complexities of international market entry.

4.3 Export Business Plan definition and monitoring

The third stage of the internationalization process involves the development of the Export Business Plan, a central document that synthesizes all activities and strategies related to the firm's expansion efforts (Abraham, 2012). It serves as both an internal coordination tool across business functions and an external instrument to secure financing and establish credibility with stakeholders, particularly financial institutions (Madura, 2020). By integrating inputs from various departments, the Export Business Plan be-

comes a cornerstone of the internationalization process, guiding the firm's strategic direction and operational execution.

The Export Business Plan is generally divided into two main components. The first is the descriptive evaluation, which encompasses a detailed overview of the company's initial assessment, market research, entry strategies, business model adjustments, marketing mix, commercial and action plans, risk analysis, operating and investment plans, and organizational considerations (Kerzner, 2017). The second component is the economic-financial analysis, which focuses on forecasting the financial performance of the internationalization effort. This includes forward-looking financial statements such as the income statement, balance sheet, and cash flow statement, along with evaluations of the project's profitability and long-term sustainability (Drury, 2013). These sections collectively provide a comprehensive roadmap for the firm's international activities.

Typically developed over a three-year horizon, the Export Business Plan is reviewed biannually to ensure its continued relevance and feasibility. Financial viability is assessed using key financial ratios to evaluate profitability, liquidity, and solvency, ensuring the plan's alignment with the firm's strategic objectives and resource constraints (Weygandt et al., 2015). For consumer goods, the plan focuses on estimating market potential, serving costs, and associated investments. In contrast, plans for capital goods are tailored to individual client needs, with investments often linked to product customization rather than broader market penetration.

To address uncertainties and shifting market conditions, the plan incorporates sensitivity analysis, which evaluates the impact of changes in critical variables on project outcomes (Saltelli et al., 2004). This proactive approach strengthens the robustness of the plan, enabling the firm to anticipate and adapt to fluctuations in market dynamics. The subsequent monitoring phase ensures the plan remains effective by evaluating its implementation against real-world outcomes.

The monitoring phase involves a multi-functional approach within the company and proceeds in three interconnected steps. First, the model definition establishes the framework for tracking exports, monitoring market evolution, and positioning the company within the competitive landscape. It also identifies Key Performance Indicators (KPIs) to measure progress (Parmenter, 2015). Second, results analysis evaluates actual performance against forecasts, identifying deviations and assessing the firm's competitive positioning (Kaplan & Norton, 2006). Third, corrective actions are implemented to realign the plan with observed market realities, including cost and timeframe adjustments to address identified gaps (Mintzberg et al., 2020).

This process is inherently circular, where continuous monitoring informs updates to the firm's strategies and market evaluations. By integrating

feedback loops, the firm creates a dynamic system of adaptation and refinement, ensuring its internationalization efforts remain aligned with evolving conditions and objectives. For many medium-sized enterprises, this phase involves an emergent approach characterized by incremental adaptations and trial-and-error learning, particularly during implementation.

Effective monitoring validates the assumptions and projections in the Export Business Plan, comparing them to actual market performance. Variations between forecasts and outcomes are common, particularly in sectors like capital goods, where deviations can reach 30 percent. Recognizing and addressing these discrepancies is crucial for maintaining alignment with market demands and mitigating risks. Control mechanisms play a critical role here, enabling retroactive adjustments and facilitating prompt responses to strategic missteps.

By prioritizing adaptability and responsiveness, the third stage of internationalization ensures that medium-sized enterprises can navigate uncertainties, capitalize on opportunities, and sustain momentum in their market expansion efforts. The Export Business Plan, as a living document, not only guides the firm's actions but also evolves in response to its experiences, supporting a path of continuous improvement and long-term success.

4.4 Export Business Plan implementation

The final stage of the internationalization process involves implementing the Export Business Plan, a phase that translates strategic intent into operational reality. This stage requires adapting the company's structure to support the plan and creating mechanisms to identify and develop business opportunities in the target markets (Armstrong et al., 2014). These structural adaptations often include establishing or enhancing the Foreign Office, realigning operational workflows, and refining coordination systems to ensure seamless execution across the organization (Hitt et al., 2019).

The Foreign Office assumes a central role in implementation, managing pre-sales activities, sales execution, order processing, and shipment coordination while acting as a hub for gathering and managing local market intelligence (Madura, 2020). Effective implementation demands robust collaboration within the Foreign Office and across company functions, fostering integration and ensuring alignment between operational and strategic goals (Balboni et al., 2016; Tjosvold & Yu, 2007). This cross-functional collaboration is particularly important in navigating cultural differences, enabling the company to adapt to diverse customer preferences, values, and habits without imposing assumptions shaped by its domestic context (Hofstede et al., 2015; Scalamonti, 2020).

Developing commercial opportunities begins with pre-sales activities,

including the preparation of proposals tailored to customer needs and concluding with the final offer (Mintzberg et al., 2020). The sales phase focuses on negotiating critical terms such as payment methods, delivery schedules, transportation, and customs duties. These negotiations vary significantly based on the product category. For consumer goods, discussions are relatively brief and centered on pricing, as these products often require minimal adaptation. In contrast, capital goods involve longer negotiation cycles, sometimes extending several months or years, as the offerings are highly customized to meet specific customer requirements, often tied to long-term investments (Drury, 2013).

The shipment phase encompasses packaging, delivery, and adherence to Incoterms®, which define the responsibilities for transportation, risk transfer, and customs clearance (Hinkelman et al., 2005). A clear understanding of customs duties and regulations in the destination market is essential to ensure compliance and avoid logistical disruptions (Rodrigue, 2020).

After-sales service plays a pivotal role, especially in capital goods markets, where it extends beyond the sale to include training, spare parts management, and ongoing technical support (Lele & Karmarkar, 1983). For durable goods and consumer products, after-sales service enhances the customer experience and builds trust. Effective after-sales strategies can generate sustained revenues by fostering long-term customer relationships and encouraging repeat purchases (Gandellini & Tatananni, 2018).

Customer satisfaction is a critical measure of success at this stage, as satisfied customers are more likely to repurchase and recommend the product to others. Key metrics for evaluating satisfaction include the Customer Satisfaction Score (CSAT), Customer Effort Score (CES), Net Promoter Score (NPS), and Customer Loyalty Index (CLI) (Hayes, 2008; Zeithaml et al., 2006). While CSAT and CES assess immediate satisfaction, NPS and CLI provide insights into medium- to long-term customer loyalty (Reichheld, 2003). These metrics offer actionable feedback, guiding companies in refining their offerings and service models.

However, satisfaction alone may not suffice in highly competitive markets. Companies can strengthen customer retention by implementing loyalty programs that reward purchases with incentives, enhancing the perceived value of the relationship (Uncles et al., 2003). While such programs are more commonly applied in consumer goods sectors, their implementation in capital goods is challenging due to the nature of the relationships, which often develop through continuous engagement and after-sales services.

The implementation phase of the Export Business Plan ensures that the strategies outlined earlier are effectively operationalized, balancing structural adaptation with customer-centric initiatives. By prioritizing collaboration, understanding market-specific requirements, and fostering long-term customer relationships, companies can solidify their presence

in international markets while remaining agile in responding to emerging challenges and opportunities.

5. Discussions

This paper provides a structured and comprehensive framework for medium-sized enterprises aiming to navigate the complexities of internationalization. It introduces a four-step export management process encompassing export readiness assessment, market selection, export business plan development, and implementation. This approach offers a clear, adaptable pathway for global expansion, emphasizing the efficient use of resources and the iterative nature of strategic adjustments in dynamic international markets.

The proposed framework builds on key internationalization theories while addressing the unique needs of medium-sized enterprises. For example, the Uppsala Model (Johanson & Vahlne, 1977) emphasizes incremental learning through gradual market engagement. However, our framework shifts focus to a proactive readiness assessment, enabling firms to evaluate their capabilities and market fit before committing resources. This strategic preparation contrasts with the gradual accumulation of experience, empowering medium-sized enterprises to make informed entry decisions from the outset. Similarly, by prioritizing structured resource allocation, the model aligns with the Resource-Based View (Barney, 1991; Wernerfelt, 1984), leveraging unique internal strengths to establish competitive advantages in foreign markets.

This model responds to the call for innovative research in international business, as articulated by Tung et al. (2023). They highlight the need for frameworks that challenge prevailing assumptions and offer fresh insights into the complexities of global markets. Our approach contributes to this agenda by integrating principles from dynamic models like the Born Global Theory (Madsen & Servais, 2017) and International New Venture Theory (McDougall et al., 1994), which highlight the benefits of rapid international engagement. Medium-sized enterprises, even those at an early stage of development, can use this structured approach to capitalize on global opportunities without the need for prolonged domestic consolidation. By combining agility with rigorous planning, the framework mirrors the swift market entry strategies of born-global firms while equipping enterprises to handle the complexities of rapid internationalization. Tools like sensitivity analysis and ongoing monitoring enhance this adaptability, reflecting the International Entrepreneurship Theory (McDougall & Oviatt, 2000), which emphasizes the importance of entrepreneurial responsiveness to changing market conditions.

A core strength of this model lies in its ability to balance deliberate and emergent strategies (Mintzberg & Waters, 1985). Deliberate strategies ensure alignment with initial goals through methodical planning, market research, and resource assessment, creating a foundation for systematic decision-making. At the same time, the model accommodates emergent strategies by fostering adaptability to unforeseen opportunities or challenges, such as evolving customer preferences, new industry trends, or unexpected partnerships. This balance between strategic clarity and flexibility is particularly vital for medium-sized enterprises, which often operate with limited resources yet need to remain agile in unpredictable international environments.

Continuous monitoring is a cornerstone of the framework, enabling firms to evaluate market conditions, competitor actions, and customer feedback in real time. This proactive approach ensures that deviations from initial projections can be quickly addressed, and emergent opportunities can be seized. Resource flexibility complements this adaptability, allowing firms to reallocate financial, human, or operational resources as needed. Together, these elements empower medium-sized enterprises to pursue their strategic objectives while remaining responsive to market dynamics, striking a crucial balance between structured planning and opportunistic adjustment.

The framework also transcends the limitations of network-based approaches (Johanson & Mattsson, 1988), which often rely heavily on personal connections. By integrating relationship-building with data-driven planning, it promotes a more balanced and scalable strategy. This combination ensures that resources are allocated strategically, reducing the risks of ad-hoc decision-making. Additionally, the Transaction Cost Approach (Williamson, 1979) is incorporated to guide firms in choosing cost-effective market entry strategies, whether direct or indirect, based on internal capabilities and external market conditions.

The Eclectic Paradigm (Dunning, 1988) is reflected in the model's emphasis on evaluating ownership, location, and internalization advantages during the export planning phase. This structured evaluation enables medium-sized enterprises to select entry modes that maximize control while minimizing risks, aligning their strengths with the specific demands of their target markets.

In light of Tung et al.'s (2023) call for a more innovative and multidisciplinary approach in international business research, this framework offers practical benefits beyond theoretical alignment. It addresses the pressing need for actionable tools that reflect the interconnected and rapidly changing realities of global markets. By bridging academic theory with practical strategy, it equips medium-sized enterprises with the capability to navigate the volatility of international markets while fostering internal resilience.

The iterative nature of the framework underscores the non-linear pro-

gression of internationalization. By emphasizing continuous monitoring and adaptation, it fosters a proactive management style that supports ongoing refinement of strategies in response to evolving market conditions. This strategic agility creates a culture of resilience and continuous improvement, enabling medium-sized enterprises to balance deliberate planning with flexibility for emergent opportunities. In doing so, the framework aligns with Tung et al.'s (2023) vision of dynamic, disruptive knowledge generation in international business, positioning these firms for sustained success in volatile and competitive international markets.

6. Limitations

This study highlights several limitations that create opportunities for future research to refine and extend the proposed framework. The four-step export management process outlined here could be further expanded with additional phases and management tools to create a more comprehensive and adaptable framework. Such refinements would enhance its flexibility and effectiveness, ensuring it can be tailored to the specific needs of medium-sized enterprises operating in diverse industries and contexts.

A critical area for future exploration is the empirical validation of the framework. Testing its applicability through longitudinal studies or experimental research would provide robust evidence of its utility and effectiveness in real-world scenarios. Empirical research could examine how the framework performs in different industries, geographic regions, and cultural settings, generating comparative insights that inform best practices and highlight areas for refinement.

The integration of digital transformation strategies into the internationalization process represents another promising avenue for research. As emerging technologies such as blockchain, artificial intelligence, and the metaverse reshape global business operations, understanding their implications for medium-sized enterprises' export strategies becomes increasingly important. Investigating how these technologies can support market entry, enhance operational efficiency, and facilitate customer engagement would provide valuable guidance for businesses navigating this digital shift.

Sustainability is another critical dimension to incorporate into future research (see Ghauri et al, 2021). With international regulations, particularly those from European governing bodies, emphasizing sustainable practices, medium-sized enterprises must align their export strategies with these standards. Future studies could explore how sustainability challenges can be reframed as growth opportunities, enabling businesses to meet regulatory requirements while strengthening their competitive positions in international markets.

The role of institutional systems in supporting medium-sized enterprises' export activities warrants further investigation. Given the resource constraints these firms often face, institutional support can play a pivotal role in addressing barriers to internationalization. Research could focus on identifying effective mechanisms for providing financial, informational, and infrastructural support to medium-sized enterprises as they navigate the complexities of global markets.

Understanding the challenges medium-sized enterprises encounter when implementing the proposed framework is essential for refining its practical applicability. Future research should aim to identify and analyze these obstacles, offering actionable strategies to address them. Such studies would enhance the framework's value by providing medium-sized enterprises with practical solutions to overcome common barriers to internationalization.

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INTELLECTUAL CAPITAL, ENTREPRENEURIAL ORIENTATION AND GREEN INNOVATION IN ITALIAN SMES

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Abstract

Purpose. *This study aims to examine the relationships between Intellectual Capital (IC), entrepreneurial orientation (EO) and green innovation in small and medium-sized Italian enterprises (SMEs). Specifically, it investigates how different components of Intellectual Capital influence the dimensions of entrepreneurial orientation and how these, in turn, impact green innovation.*
Design/methodology/approach. *A structural model is developed and tested using data from a sample of 210 Italian SMEs. The model is analysed using the PLS-SEM technique.*
Findings. Results show that Structural Capital has a significant, positive influence on all three dimensions of entrepreneurial orientation (innovativeness, proactiveness and risk-taking). Human Capital positively impacts risk-taking, while Relational Capital positively influences innovativeness. The only EO dimension that demonstrates a significant, positive relationship with green innovation is innovativeness.
Practical and Social Implications. *The study highlights the importance of SMEs investing in Structural Capital to foster entrepreneurial orientation. Moreover, it underscores the critical role of innovativeness in driving green innovation, suggesting that cultivating a culture of creativity and experimentation could be key to advancing environmental sustainability efforts.*
Originality of the Study. *This research contributes to the existing literature by providing empirical evidence on the interplay between IC, EO and green innovation in the context of Italian SMEs. It offers a more nuanced understanding of how different components of Intellectual Capital influence specific dimensions of entrepreneurial orientation and how these translate into green innovation.*

1. Introduction

Knowledge-based resources play a crucial role in achieving company success and sustained competitive advantages in the current economic landscape, which is heavily influenced by rapid technological advances, society and communication (Cooper et al., 2023). Within this framework, these essential resources, for example, Intellectual Capital (IC), are unique and effective variables in driving innovation, enhancing company performance and attaining a competitive edge (Yaseen et al., 2023; Garcia-Perez et al., 2020). Intellectual Capital primarily encompasses Human, Relational and Structural Capital (Bontis, 2001; Paoloni et al., 2023). Several research studies have demonstrated that IC has a beneficial impact on various aspects, including the identification and pursuit of opportunities, the quality and speed of decision-making, competitive advantage, financial performance and innovation performance (Agostini et al., 2017; Palazzi et al., 2020; Ciambotti et al., 2023). Recent research has emphasised the connection between IC and entrepreneurial orientation (EO), which refers to a company's dedication to inventiveness, proactiveness and the willingness to take risks (Yaseen et al., 2023). Researchers have proposed that the interplay between IC and EO improves the performance of organisations and their ability to innovate, ensuring long-term sustainable growth (Alshahrani et al., 2024; Chaudhary et al., 2023; Garcia-Perez et al., 2020; Paoloni et al., 2020; Yaseen et al., 2023). Therefore, to better understand the relationship between IC and EO, and their influence on a company's success, it is necessary to study these components jointly. Unfortunately, existing research lacks information on the impact of the combination of IC and EO on a firm's performance, specifically concerning green innovation performance (Marco-Lajara et al., 2023; Wang et al., 2023). Green innovation is a component of social innovation, which refers to solutions to social problems inadequately addressed by existing institutional and organisational structures. It encompasses various issues such as poverty, exclusion, health, education, employment, rights and the environment (Vézina et al., 2019). From a social perspective, green innovation (GI) refers to a business's methods to minimise the negative impact of its activities on the natural environment (Shahzad et al., 2020). Despite an increasing interest in improving the theoretical and empirical basis for understanding the connection between IC, EO and business performance, very few studies have integrated these factors (Yaseen et al., 2023; Garcia-Perez et al., 2020), particularly in the context of green innovation. This study aims to address the existing gap in the literature by examining the influence of IC on EO and its subsequent impact on green innovation. To uphold our hypotheses, we have created a structural model and conducted an empirical examination using a sample of 210 small and medium-sized Italian firms (SMEs).

Hence, this study aims to answer the following research questions: (RQ1) Does Intellectual Capital impact firms' entrepreneurial orientation? (RQ2) Does entrepreneurial orientation impact on firms' green innovation?

This study can be deemed innovative for two primary reasons. Firstly, it adds to the discussion of the factor that could potentially influence the effect of IC on performance by considering EO as a mediating variable. Furthermore, our study aims to improve our comprehension of how IC improves EO by examining the individual effects of each component of IC (namely, Human Capital, Relational Capital and Structural Capital) on EO. Understanding the influence of SMEs' IC and EO on green innovation is crucial for achieving sustainable development. SMEs in Europe make up 99% of businesses and play a vital role in supporting the full realisation of the 2030 Agenda, with a particular focus on green innovation. Agenda 2030 establishes the basis for a transformation in the SME landscape, where being socially, economically and environmentally aware becomes a crucial factor in attaining a competitive edge (Costa et al., 2022; Thomas et al., 2022; Matarazzo et al., 2024). The paper is organised in the following manner: section two presents a concise overview of the literature and the creation of the hypothesis. Part three outlines the study methods. Finally, the findings, discussion and conclusions are presented.

2. Literature Review and Hypothesis Development

The latest research indicates that enhancements in companies' performance result from the synergistic impact of IC and EO (Adomako, 2018; Yaseen et al., 2023; Alshahrani et al., 2024), as EO plays a crucial role in leveraging IC (Yaseen et al., 2023; Alshahrani et al., 2024).

In the past decade, numerous studies have been conducted to highlight the pivotal role of IC in firms' success (Dabić et al., 2021; Paoloni et al., 2023), operating both in the profit (Modaffari et al., 2023) and non-profit sectors (Bontis et al., 2018), and four main research streams on IC emerged (Bellucci et al., 2021): reporting and disclosure of Intellectual Capital; Intellectual Capital studies within universities, education and the public sector; knowledge management; and the relationship between Intellectual Capital, financial performance and market value.

Most studies consider IC as the sum of human, relational and Structural Capital (Sgrò, 2021; Paoloni et al., 2023); however, other elements, such as entrepreneurial, renewal and trust capital, are important for SMEs' success due to enabling high innovation performance, organisational growth, the ability to overcome radical changes in the market (Paoloni et al., 2015; Demartini and Beretta, 2022) and positively affecting a broad range of financial performance metrics (Bansal et al., 2023).

Entrepreneurial orientation refers to firms' strategic approach regarding the decision-making process and operational behaviour. It includes the procedures, tactics and decision-making methods that enable entry into markets (Rahman et al., 2024). The concept of EO, according to scholars, encompasses three dimensions: innovativeness, proactiveness and risk-taking (Alshahrani et al., 2023). Innovativeness (INND) is the measure of a company's dedication to promoting creativity, experimentation and launching new products or services (Rahman et al., 2024). Proactiveness (PRO) entails the ability to anticipate and promptly address market demands by introducing products or services before competitors and preparing for anticipated future needs (Rahman et al., 2024). Risk-taking entails displaying a willingness to engage in actions despite uncertainty. These actions can involve the exploration of various markets or the allocation of resources towards enterprises, which may have unpredictable effects. Risk-taking (RISK), as experts understand it, pertains to the readiness of managers to undertake bold initiatives that could result in failure. Companies might exploit possibilities that careful competitors might miss by taking risks. According to Swink (2003), motivating team members to take ownership of projects by making resource commitments encourages risk-taking behaviour and increases their tolerance for hazards. Although taking risks might provide a competitive edge, it is crucial to carefully consider the potential for significant losses if these hazardous ventures fail (Rahman et al., 2024). EO has been recognised as a significant component that influences a company's performance, as evidenced by research demonstrating a favourable correlation between EO and performance (Rahman et al., 2024; Rauch et al., 2009). This link has been explained from several viewpoints, including the resource-based view and resource orchestration theory. EO, or entrepreneurial orientation, plays a role in developing advantages and boosting business performance by facilitating the mobilisation and effective use of resources in a proactive and risk-embracing strategy (Miao et al., 2017). However, according to Hanifah et al. (2022), while EO is critical for fostering innovation and knowledge sharing within organisations, its effects could be limited in the context of SMEs due to cultural and industry-specific constraints.

Intellectual Capital, a knowledge-based resource, has high value, scarcity and resistance to imitation or substitution. It aids organisations in developing and executing strategies that enhance their efficiency, effectiveness and innovation (Bontis, 2001; Paoloni et al., 2023). Several authors (Chen et al., 2014; Riahi-Balkaoui, 2003; Bontis et al., 2018) have contended that IC is a crucial asset that every organisation should cultivate and oversee to successfully execute corporate strategy, attain and sustain a durable competitive advantage and enhance corporate performance. This choice is especially applicable to small and medium-sized enterprises (SMEs), as their

success often relies on the expertise, experience and abilities of the owner and the employees rather than on tangible and financial assets. Additionally, SMEs often face limitations in utilising their knowledge due to insufficient resources (Crupi et al., 2021; Paoloni et al., 2023). Furthermore, in small and medium-sized enterprises (SMEs), the turnover of staff and extended periods of absence deter the accumulation of knowledge within the organisation. And due to the limited number of employees, it is difficult to find a suitable replacement quickly. Human, Relational and Structural Capital are the most valuable resources for achieving corporate success and establishing a lasting competitive advantage (Buenechea-Elberdin et al., 2017; Crupi et al., 2021).

Human Capital (HC) is considered a crucial strategic resource, encompassing the knowledge possessed by employees in terms of their education, competence, experience, skills, creativity and problem-solving ability (Kianto et al., 2017; Inkinen, 2015; Youndt and Snell, 2004). Human Capital diversity encompasses all these factors, and a greater level of diversity leads to an increased capacity for generating distinct ideas and inventive solutions (Han et al., 2014). The primary driver of innovation performance and adaptation to strategy changes is a well-trained and educated workforce (Cabrilo and Grubic-Nesic, 2013; Paoloni et al., 2023). According to Palazzi et al. (2020), HC significantly enhances product and process innovation and employees with diverse experiences and creative problem-solving abilities contribute to the generation of novel ideas and practical solutions that drive innovation. Moreover, HC supports a culture of adaptability and creativity, driving innovative processes and solutions that are essential in dynamic markets (De Martini et al., 2017). Its impact is further amplified when combined with other dimensions of intellectual capital, such as structural and relational capital, creating synergies that maximise the effectiveness of organisational knowledge assets. Strategically, investing in HC through employee training, education and development ensures that firms remain competitive, innovative and capable of responding to evolving market demands, positioning them for long-term growth and sustainability (Cattafi et al., 2023). An environment that promotes ongoing learning and professional growth among team members guarantees that the most up-to-date knowledge, trends and technologies are incorporated into the business operations, hence encouraging innovation (Cabrilo and Dahms, 2020; Chaudhary et al., 2023). Furthermore, the generation of novel information relies on the existing pool of knowledge assets within any firm, primarily associated with employees and management. This knowledge allows for the identification and exploitation of creative prospects (Alshahrani et al., 2024). HC provides firms with specialised knowledge and skills to promote innovation, encourage proactivity and mitigate risks (Yaseen et al., 2023). Therefore, HC empowers employees to generate novel

ideas and devise inventive solutions by virtue of their extensive education, training and specialised knowledge (Cabrilo and Dahms, 2020; Chaudhary et al., 2023). Furthermore, proficient personnel frequently possess a heightened awareness of prevailing market trends. They possess the ability to predict forthcoming requirements, resulting in proactive actions, and they are more inclined to proactively recognise opportunities and respond more swiftly than their rivals. Proficient employees possess a high level of expertise and understanding, which enables them to handle risks confidently and efficiently. Enhanced education and training empower employees to evaluate risks with greater precision and make well-informed decisions (Yaseen et al., 2023). Thus, we propose the following hypotheses:

H1: There is a positive, direct relationship between HC and INND
H2: There is a positive, direct relationship between HC and PRO
H3: There is a positive, direct relationship between HC and RISK

Relational Capital (RC) refers to the collective value of a firm's relationships with external stakeholders and could enhance innovation performance, as not all the knowledge required for innovation is confined within the firm's boundaries. This detail has been supported by studies conducted by Buenechea-Elberdin et al. (2017) and Ciambotti et al. (2023). RC, in general, refers to the connections and interactions a company has with its consumers, suppliers and public and private entities (Kianto et al., 2017; Paoloni et al., 2023). The establishment of inter-firm linkages creates a robust network that facilitates the acquisition and enhancement of new resources and capabilities, fosters collaboration among partners, enables cost and risk sharing, reduces information imbalances and enhances innovation performance (Buenechea-Elberdin et al., 2017). Thus, through the interconnected web of interactions, every company can gather vital feedback that can fuel the advancement of innovative solutions (Yaseen et al., 2023). These interactions create a dynamic flow of information, enabling firms to identify emerging trends, refine their strategies and co-create value with stakeholders (Agostini et al., 2017). Furthermore, resource configuration (RC) plays a crucial role in facilitating the identification and utilisation of opportunities, as well as enhancing the proactive nature of entrepreneurial firms through the expansion of their business networks (Ciambotti et al., 2023). By effectively leveraging RC, companies can build resilience, face uncertainties and maintain a competitive edge in complex and volatile environments (Hanifah et al., 2022). The relationships that a corporation has with its stakeholders can offer valuable information about market changes and future trends, allowing the firm to establish proactive strategies for finding new opportunities and staying ahead of industry advances (Paoloni et al., 2023). Furthermore, such proactive engagement fosters stronger

trust and collaboration with stakeholders, enhancing the corporation's reputation and its ability to forge long-term partnerships (Palazzi et al., 2020). Ultimately, participating in a network allows for the dispersion of risk among collaborators, lessening the load on any individual participant. By establishing robust partnerships and fostering collaboration with diverse stakeholders, firms can effectively distribute the risks associated with innovative projects, new ventures or market uncertainty (Hock-Doepgen et al., 2021). Thus, we propose the following hypotheses:

H4: There is a positive, direct relationship between RC and INND
H5: There is a positive, direct relationship between RC and PRO
H6: There is a positive, direct relationship between RC and RISK

Structural Capital (SC) encompasses the implicit knowledge embedded in information systems, processes and other organisational structures (Inkinen, 2015; Khalique et al., 2022). Put simply, SC can be defined as the collective knowledge that remains within a company even after employees and management have left (Youndt & Snell, 2004). Knowledge Management systems are tools that collect and distribute information and best practices throughout a company, promoting a culture of ongoing development and innovation (Kianto et al., 2017). These technologies facilitate the gathering, retention and enhancement of shared information, enabling a company's operations and endeavours to contribute to innovation performance (Beltramino et al., 2020) and the exploration and exploitation of entrepreneurial chances (Ahmed et al., 2020; Al-Omoush, 2021). Efficient procedures facilitate the speedy development and implementation of creative ideas (Lumpkin and Lichtenstein, 2005), as well as the ability to foresee future market needs and proactively create customised solutions (Al-Omoush, 2021). Hence, SC facilitates the process of organisational learning, equips organisations with the necessary resources to adapt to unpredictable circumstances promptly and improves their ability to be proactive and agile (Al-Omoush, 2021). Thus, we propose the following hypotheses:

H7: There is a positive, direct relationship between SC and INND
H8: There is a positive, direct relationship between SC and PRO
H9: There is a positive, direct relationship between SC and RISK

The strategic utilisation of IC can facilitate and enhance organisations' innovativeness, proactiveness and willingness to take risks (Wales et al., 2019; 2021). Therefore, companies' capacity to utilise Intellectual Capital will improve their ability to innovate (Inkinen, 2015; Yaseen et al., 2023; Ali et al., 2021; Garcia-Perez et al., 2020). Environmentally sustainable development is recognised as one of the three essential elements (environmen-

tal, social and economic) of sustainable development. It is equally significant and can be seen as an integrated approach to sustainability (Nogueira et al., 2022). This study focuses on the environmental aspect of sustainable development, specifically addressing the preservation of natural and renewable resources, responsible waste management, the maintenance of clean air and water and the reduction of harmful gas emissions (Galdeano-Gomez et al., 2013).

Green innovation refers to the process by which companies reduce or eliminate the harmful effects of their operations on the environment (Fernando et al., 2019) and to the development of products, processes, technologies and management structures intending to safeguard the natural environment. This is achieved by reducing resource usage and effectively managing waste and pollution. Several researchers have examined the determinants of green innovation, including market demands (Lin et al., 2014), business ethics (Chang, 2011), relationships with external and internal stakeholders (Weng et al., 2015), environmental norms, technological advancement (Cai and Li, 2018) and intangible assets (Awan et al., 2023; Dangelico et al., 2017).

EO is a significant catalyst for innovation (Pérez-Luño et al., 2011; Madhoushi et al., 2011; Freixanet et al., 2021). Explicitly, EO refers to a company's readiness to endorse novel concepts, conduct experiments and engage in innovative procedures (Yaseen et al., 2023). An intense focus on innovation can propel the advancement of environmentally friendly technologies and sustainable products (Wang et al., 2023). Organisations characterised by a high level of innovativeness are inclined to allocate resources towards research and development activities that create environmentally friendly solutions. Additionally, they are more prone to embracing new environmentally conscious practices and incorporating sustainability principles into their product designs (Sánchez-Sellero and Bataineh, 2022). Companies that have a strong inclination towards taking risks are more likely to invest in unclear or unproven innovations (Yan et al., 2021). Green innovation frequently entails significant upfront expenses and unpredictable returns, rendering it a risky endeavour (Martínez-Ros and Kunapatarawong, 2019). Companies that adopt a proactive approach towards risk are more inclined to engage in the creation and implementation of environmentally-friendly innovative technologies and sustainable practices, even in the face of potential financial uncertainty (Yan et al., 2021). In addition, forward-thinking organisations are likely to acknowledge the growing significance of environmental sustainability and act before their competitors to create environmentally-friendly inventions (Basbeth et al., 2019). By adopting a forward-thinking attitude, they can take advantage of growing opportunities in the green market and position themselves as pioneers in sustainability (Johl and Toha, 2021). Hence, the collective impact of these

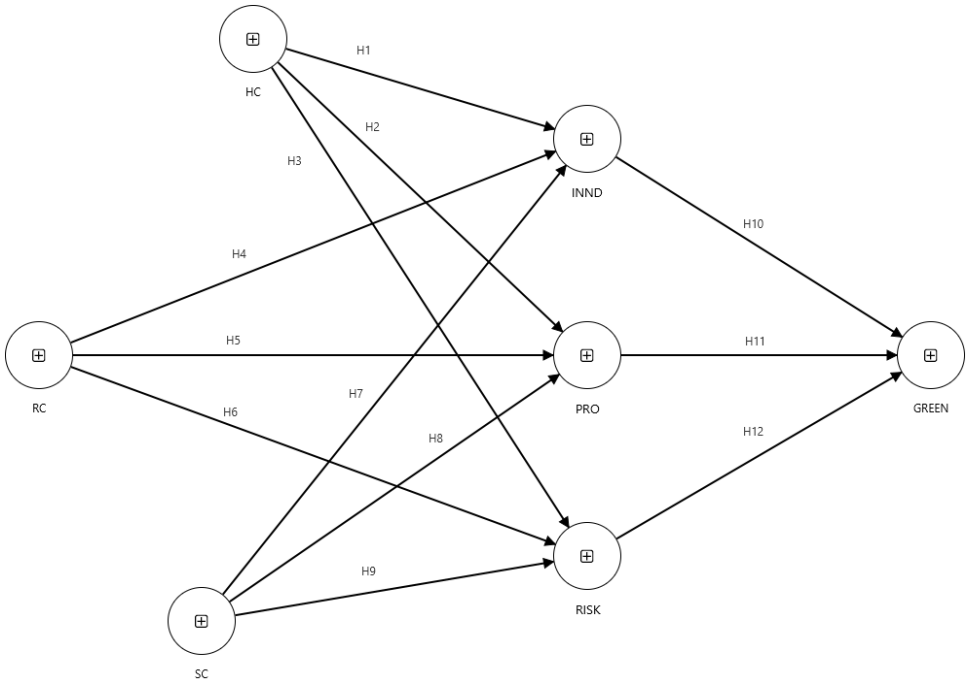
characteristics of entrepreneurial orientation (innovativeness, proactiveness and risk-taking) might generate a synergistic outcome that amplifies green innovation. Based on the information provided, this study aims to examine the following research hypotheses:

H10: There is a positive, direct relationship between INND and green innovation (GREEN).

H11: There is a positive, direct relationship between PRO and green innovation (GREEN).

H12: There is a positive, direct relationship between RISK and green innovation (GREEN).

Fig.1 shows the research model.



3. Methodology

3.1. Data Collection

This research employs a survey methodology and is designed as a cross-sectional study. The definition of SMEs we adopted follows the Commission Recommendation 2003/361/EC. However, in line with previous

studies, SMEs were identified solely based on the number of employees (10–249) to ensure comparability of results.

Quantitative data were collected in 2024 from Italian small and medium-sized enterprises (SMEs). We picked a random sample of 2.000 SMEs located in Central Italy from AIDA's Bureau van Dijk database. The rationale behind the sample stems from the low response rates commonly reported in similar studies (e.g., Giampaoli et al., 2024). First, given an expected average response rate of approximately 10%, 2.000 SMEs were randomly chosen to ensure a sufficient number of responses for the robustness of the statistical model. Additionally, the focus on Central Italy was motivated by the geographical proximity of the university conducting the study, which is well-known among local SMEs. This familiarity was expected to encourage participation in the survey.

We dispatched an invitation for participation in this research to their officially verified email address (PEC). In the email body, we articulated the research objective and provided the option to obtain a summary of the findings to enhance response rates. The invitation pertained to an online inquiry conducted via the Google Form survey platform.

From January to February 2024, we collected 264 responses. This timeframe was chosen to ensure that the performance-related responses referred to the three-year period (2021–2023). To ensure accurate results, we excluded 54 responses as they were not from key informants (CEO, entrepreneur, manager). The final sample consists of 210 responses representing 10.5% of the population. Of the final sample, 50% of respondents are CEOs or entrepreneurs, 16% are CFOs, and the remaining 34% represent COOs, CHRMs, CIOs and CSOs. The main sectors in the sample are manufacturing (44%), services (13%) and commerce (10%), while the remaining 33% are transportation, hospitality industry and construction. Finally, 83% of firms employ between 10 and 49 employees, while 17% between 50 and 249 employees.

3.2 Measurement Model

Intellectual Capital is measured through three dimensions (Human Capital, Structural Capital and Relational Capital), using the scales of Giampaoli et al. (2024). Entrepreneurial orientation includes innovativeness, proactiveness and risk-taking, whose scales are taken from Khedhaouria et al. (2015), while the green innovation scale is adapted from Shahzad et al. (2020). All items were rated on a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree).

4. Findings

To test our measurement model, the psychometric properties of the scale were assessed. Reliability and convergent validity were checked using Cronbach's alpha ($\alpha \geq 0.7$), Dillon-Goldstein's rho ($\rho_c \geq 0.7$) and average variance extracted (AVE ≥ 0.5). Results are shown in Tab.1. All values are above the recommended thresholds, and reliability and convergent validity are assured.

Tab.1 Reliability and Convergent Validity

Reliability and Convergent Validity					
Inherent variables	Items	Loadings	Cronbach's alpha	Dillon-Goldstein rho	AVE
GREEN			0.896	0.928	0.764
	GREEN1	0.885			
	GREEN2	0.915			
	GREEN3	0.906			
	GREEN4	0.784			
HC			0.912	0.944	0.849
	HC1	0.921			
	HC2	0.943			
	HC3	0.900			
INND			0.861	0.915	0.783
	INND1	0.811			
	INND2	0.943			
	INND3	0.895			
PRO			0.887	0.930	0.816
	PRO1	0.879			
	PRO2	0.885			
	PRO3	0.944			
RC			0.927	0.953	0.872
	RC1	0.921			
	RC2	0.935			
	RC3	0.945			
RISK			0.805	0.874	0.699
	RISK1	0.871			
	RISK2	0.820			
	RISK3	0.816			
SC			0.907	0.935	0.781

	SC1	0.896			
	SC2	0.861			
	SC3	0.879			
	SC4	0.899			

Discriminant validity was checked using the Fornell-Larker criterion and HTMT ratio. Discriminant validity aims to check that the selected latent variables or composites measure different concepts. Fornell-Larker criterion requires that, for a specific construct, all the values in the rows and columns (correlations) are below the values in the diagonal, the square root of AVE. HTMT criterion is a new method to assess for discriminant validity (Henseler et al., 2015) and requires that the values shown in the column are below the threshold of 0.90. As shown in Tab.2 and Tab.3 all the values are below the threshold, and discriminant validity is assured. The second-order construct (entrepreneurial orientation) has been tested following the procedure of Becker et al. (2012). Finally, having gathered data from a single respondent we checked for common method bias using Harmann's one-factor test and the marker variable approach. The first one requires that no factor explains more than 50% of the variance, while the marker variable approach tests for variations in the relationship among constructs when including the marker variable in the model. Results indicate that there is no common method bias.

Tab.2 Fornell-Larker

Fornell-Larker							
	GREEN	HC	INND	PRO	RC	RISK	SC
GREEN	0.874						
HC	0.419	0.922					
INND	0.542	0.482	0.885				
PRO	0.431	0.425	0.682	0.903			
RC	0.355	0.547	0.468	0.349	0.934		
RISK	0.441	0.494	0.733	0.666	0.387	0.836	
SC	0.501	0.680	0.627	0.559	0.559	0.544	0.884

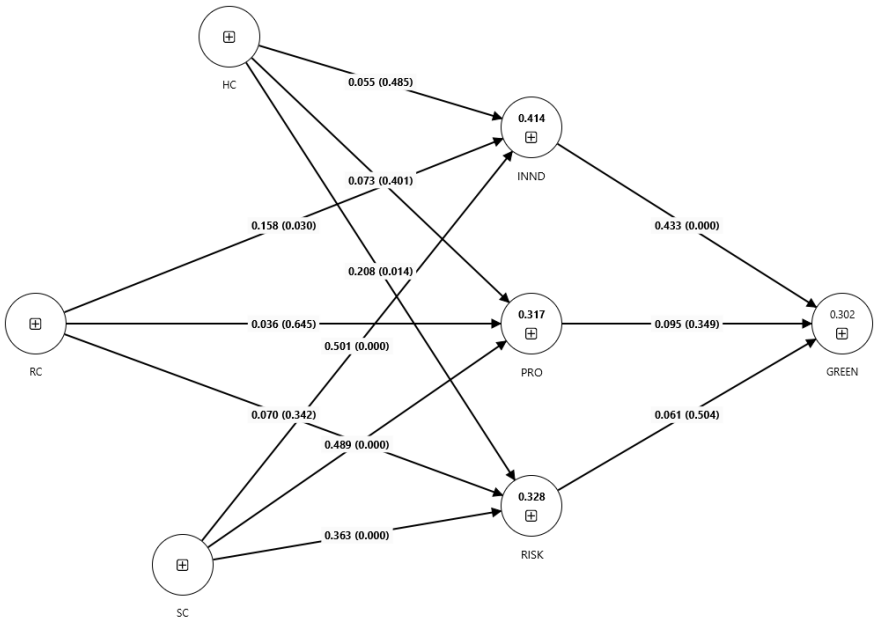
Tab.3 HTMT

HTMT							
	GREEN	HC	INND	PRO	RC	RISK	SC
GREEN							
HC	0.456						

INND	0.614	0.525					
PRO	0.481	0.466	0.780				
RC	0.385	0.590	0.515	0.381			
RISK	0.462	0.511	0.784	0.763	0.408		
SC	0.554	0.741	0.694	0.619	0.608	0.572	

For data analysis, we used the PLS-SEM technique with SmartPLS 4.1.0.4. This technique is widely used in the field of intellectual Capital as it deals with both common factors and composites as in the case of Intellectual Capital. Moreover, different from the CB-SEM method, whose goal is theory confirmation, PLS-SEM aims to predict a targeted construct and discover new relationships between latent variables. Considering the explorative nature or this study, PLS-SEM seems to be the most appropriate choice.

Fig.2 and Tab.4 show the results of the structural model.



Tab.4 Research Model Results

HYPOTHESIS	PATH	PATH COEFFICIENT	T-VALUE	P-VALUE	STATUS
H1	HC -> INND	0.055	0.698	0.485	NOT SUPPORTED
H2	HC -> PRO	0.073	0.840	0.401	NOT SUPPORTED

H3	HC -> RISK	0.208	2.465	0.014	SUPPORTED
H4	RC -> INND	0.158	2.174	0.030	SUPPORTED
H5	RC -> PRO	0.036	0.461	0.645	NOT SUPPORTED
H6	RC -> RISK	0.070	0.950	0.342	NOT SUPPORTED
H7	SC -> INND	0.501	7.904	0.000	SUPPORTED
H8	SC -> PRO	0.489	6.059	0.000	SUPPORTED
H9	SC -> RISK	0.363	4.439	0.000	SUPPORTED
H10	INND -> GREEN	0.433	4.251	0.000	SUPPORTED
H11	PRO -> GREEN	0.095	0.937	0.349	NOT SUPPORTED
H12	RISK -> GREEN	0.061	0.668	0.504	NOT SUPPORTED

5. Discussions

Tab.4 shows that:

H1 (HC -> INND) is not supported: this unexpected result suggests that Human Capital alone may not directly translate into a commitment to fostering creativity, experimentation and new product/service introduction. It's possible that while employees possess valuable knowledge and skills, organisational factors or resource constraints may be limiting their ability to engage in innovative activities.

H2 (HC -> PRO) is not supported: the lack of support for this hypothesis indicates that Human Capital is not significantly contributing to anticipating and responding to market demands ahead of competitors, which could suggest that other factors, such as organisational structure or market intelligence systems, play a more crucial role in enabling proactive behaviour.

H3 (HC -> RISK) is supported (β=0.208; p-value=0.014): this result aligns with the definition of risk-taking as managers' willingness to make risky commitments. It suggests that in Italian SMEs, higher levels of Human Capital led to increased confidence in making decisions with uncertain outcomes, possibly due to better assessment and management of potential risks.

H4 (RC -> INND) is supported (β=0.158; p-value=0.030): the positive relationship between Relational Capital and innovativeness indicates that external relationships are contributing to Italian SMEs' commitment to creativity, experimentation and new product/service introduction. This suggests that these firms are effectively leveraging their networks to foster innovativeness.

H5 (RC -> PRO) is not supported: surprisingly, Relational Capital does

not significantly contribute to proactiveness in Italian SMEs, which suggests that these firms may not be fully utilising their external relationships to anticipate market demands and prepare for future needs ahead of competitors.

H6 (RC -> RISK) is not supported: the lack of support for this hypothesis implies that Relational Capital is not significantly influencing managers' willingness to make risky commitments in SMEs, which could indicate that risk-taking decisions are more influenced by internal factors than external relationships.

H7, H8 and H9 (SC -> INND, SC -> PRO, SC -> RISK) are all supported (H7: β=0.501; p-value=0.000; H8: β=0.489; p-value=0.000; H9: β=0.363; p-value=0.000). These results highlight the critical role of Structural Capital in fostering all aspects of entrepreneurial orientation, which suggests that organisational processes and systems are key drivers in promoting creativity and experimentation, enabling anticipation of market demands, and supporting managers' willingness to make risky commitments.

H10 (INND -> GREEN) is supported (β=0.433; p-value=0.000): the strong relationship between innovativeness and green innovation suggests that Italian SMEs' commitment to creativity, experimentation and new product/service introduction is positively influencing their development of green innovation.

H11 (PRO -> GREEN) is not supported: this unexpected result implies that the ability to anticipate and respond to market demands ahead of competitors does not necessarily lead to increased green innovation, which could indicate a disconnect between market anticipation and environmental concerns in these firms.

H12 (RISK -> GREEN) is not supported: the lack of support for this hypothesis suggests that managers' willingness to make risky commitments does not directly translate into more green innovation, which could imply that Italian SMEs do not perceive green initiatives as particularly risky, or that other factors are more influential in driving green innovation.

6. Conclusions

This study provides significant theoretical and empirical contributions to understanding the relationships between intellectual capital (IC), entrepreneurial orientation (EO) and green innovation in Italian SMEs. Our findings contribute to the growing body of literature exploring the interplay between these variables, offering new perspectives and insights.

In line with previous studies (e.g., Yaseen et al., 2023), our findings reinforce the critical role of Intellectual Capital (IC) in fostering Entrepreneurial Orientation (EO) dimensions, namely innovativeness, proactiveness and risk-taking. IC emerges as a vital enabler of entrepreneurial behaviours and

strategic innovation, underscoring its value as a core resource for organisations seeking to adapt and thrive in dynamic markets (Yaseen et al., 2023; Al-Omoush, 2021). However, our study delves deeper into these dynamics by demonstrating that the various components of IC—human capital, relational capital and structural capital—differentially influence EO dimensions. Among these, structural capital stands out as a key driver, significantly affecting all three dimensions of EO. This finding extends the existing literature on structural capital (Beltramino et al., 2020; Al-Omoush, 2021) by emphasising the importance of organisational processes, codified knowledge and robust knowledge management systems in enhancing creativity, forward-looking strategies and the willingness to embrace risk in Italian SMEs.

Our study also adds to the ongoing discourse on the connection between EO and green innovation (Wang et al., 2023). While previous research has broadly highlighted the role of EO in fostering sustainability initiatives, our findings nuance this understanding by showing that innovativeness is the only EO dimension with a significant positive impact on green innovation in Italian SMEs. Creativity, experimentation and the development of new products and services appear to be the cornerstone of sustainable innovation, enabling firms to meet environmental challenges and align with global sustainability trends. In contrast, proactiveness and risk-taking, although integral to broader entrepreneurial activities, do not exhibit a direct influence on green innovation. This deviation from earlier findings (e.g., Yan et al., 2021) suggests that, in the context of Italian SMEs, green innovation may depend more on cultivating a culture of creativity and experimentation than on anticipatory market actions or high-risk investments.

These findings have significant managerial implications for small and medium-sized enterprise (SME) managers, highlighting actionable steps to enhance both entrepreneurial orientation (EO) and green innovation. For SME managers, they underscore the critical importance of investing in structural capital—the systems, processes and knowledge infrastructure that provide a foundation for organisational agility and entrepreneurial behaviour. By establishing and refining robust organisational processes and information management systems, managers can create an environment where innovation thrives, proactive strategies are effectively implemented and calculated risk-taking is supported. These systems not only streamline decision-making but also enable teams to respond quickly to changes in the market and capitalise on emerging opportunities.

Moreover, the findings stress the need for embedding a culture of creativity and experimentation within SMEs. This involves more than just encouraging employees to think outside the box; it requires creating mechanisms for idea generation, evaluation and implementation. Managers can achieve this by investing in research and development, providing training that fosters innovative thinking, and ensuring that organisational

structures support collaboration and knowledge sharing. Such a culture is pivotal for driving green innovation, where creativity is often required to develop sustainable products and processes that meet evolving environmental standards and customer expectations.

Additionally, managers should integrate sustainability goals into their strategic planning and innovation efforts. The strong link between innovativeness and green innovation indicates that advancing environmental sustainability is not merely a compliance activity but an opportunity for competitive advantage. By aligning sustainability with innovative objectives, managers can ensure that resources are channeled into projects that deliver both environmental and business value. Initiatives such as leveraging renewable energy, reducing waste and adopting environmentally friendly materials can be prioritised within innovation strategies to achieve measurable green outcomes.

Finally, managers should focus on building collaborative networks with external stakeholders, including suppliers, customers and industry partners. These relationships can amplify the impact of structural capital and foster shared innovation that addresses broader environmental challenges. By cultivating trust and partnerships, SMEs can access external knowledge, share risks and co-develop sustainable solutions, enhancing their ability to innovate and maintain a competitive edge in the green economy. Together, these strategies position SMEs not only as agile and innovative players in their industries but also as leaders in advancing environmental sustainability.

The main limitation of this study is that we gathered data from SMEs operating in a single European country, and results cannot be generalised.

This study also opens up new avenues for future research. Firstly, it would be interesting to explore whether these findings are generalisable to other national contexts, or if they are specific to Italian SMEs. Secondly, longitudinal studies could provide insights into how these relationships evolve over time, especially in response to changes in the economic or regulatory environment. Finally, future research could delve deeper into the specific mechanisms through which entrepreneurial orientation translates intellectual capital into green innovation, possibly exploring the role of additional mediating or moderating variables.

In conclusion, this research contributes to advancing our understanding of how intellectual capital and entrepreneurial orientation can drive green innovation in small and medium-sized enterprises, offering a foundation for both theoretical advancement and practical application in the field.

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APPENDIX

HUMAN CAPITAL
In my organisation…

1. employees are highly skilled in their tasks
2. employees have a lot of experience in their job
3. employees are good at problem-solving

RELATIONAL CAPITAL
In my organisation

1. We exchange information with external parties (e.g. customers and suppliers) in a very effective way
2. We collaborate extensively with external parties (e.g. customers and suppliers) to develop new solutions
3. We collaborate with external parties (e.g. customers and suppliers) in a very effective way

STRUCTURAL CAPITAL
My organisation…

1. has a lot of useful information in documents and databases
2. has an effective management system to meet the needs of our clients/consumers.
3. has technology to integrate internal work processes tightly

INNOVATIVENESS
My organisation…

1. introduced and favoured many product or service innovations
2. marketed very many new lines of products or services
3. made major changes in product or service lines offered

RISK-TAKING
In my organisation…

1. we tend to strongly favour high-risky projects (with chances of very high returns)
2. Owing to the nature of the environment, we favour bold and wide-ranging acts to achieve the company's objectives
3. we typically adopt a bold and aggressive posture in order to maximise the probability of exploiting potential opportunities

PROACTIVENESS

My organisation…

1. is very often the first business to introduce new products/services, management techniques or operating technologies
2. typically precedes competitors' actions rather than responding to them
3. typically has a tendency to anticipate the market rather than following up on competitors to adapt to it

GREEN INNOVATION

My organisation…

1. chooses the materials of the product that produce the least amount of pollution for conducting the product development or design
2. the manufacturing process reduce the consumption of water, electricity, coal, or oil.
3. the manufacturing process effectively reduces the emission of hazardous substances or waste.
4. the manufacturing process reduces the use of raw materials.

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BOOK REVIEW:

"IL FINANZIAMENTO DELLE START-UP INNOVATIVE (THE FINANCING OF INNOVATIVE START-UPS)", BY LORIS L.M. NADOTTI, MANUELA GALLO, DUCCIO MARTELLI, VALERIA VANNONI, ISEDI, MILANO, 2023

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Abstract

The book addresses a crucial issue for the survival and development of innovative start-ups, especially in Italy, where the financial system can still be defined as bank-centric and where therefore the financing of new entrepreneurial initiatives is not simple. This is both due to the necessary attention to risk that traditional intermediaries adopt when granting loans, and due to the incomplete success of new entities and tools to meet the needs of new businesses. The book offers a complete overview of the offer of financing tools for innovative start-ups, also suggesting possible approaches for new businesses aimed at effectively requesting funds.

Review

The volume I am recommending to the readers of the Journal Piccola Impresa/Small Business was written by Loris Nadotti, Manuela Gallo, and Duccio Martelli from the University of Perugia, and Valeria Vannoni from the University of Urbino, scholars who focus on the economy of financial intermediaries and address one of the critical issues of innovative start-ups: how to finance themselves. The work is divided into five chapters, each containing an extensive bibliography for further exploration of the topics discussed.

The first chapter is dedicated to outlining the development path of a new company, starting from research activities to the generation of a business idea. It specifies the meaning of an innovative start-up, an academic start-up, and a spin-off, highlighting the strengths and weaknesses of the various models. The chapter introduces the issue of innovation financing, framing it in the context of financial markets and the role played by their degree of allocative and informative efficiency. The financial gap problems, and especially the equity gap that innovative start-ups face, depend on frequent deficiencies in financial culture among fund applicants and the scarcity of tangible resources to secure funding, as well as the low risk propensity that often characterizes traditional financial intermediaries, particularly in the contexts of national bank-based financial systems. The chapter also emphasizes the fragility of the Italian venture capital market, where private equity and venture capital operators struggle to develop due to difficulties in divesting equity investments. The chapter outlines the current regulatory requirements in Italy that allow innovative start-ups to access financial incentives for starting new businesses and that investors can exploit to invest in the equity capital of start-ups.

The second chapter addresses a crucial and preparatory aspect for a nascent company to obtain financial resources: how to write a business plan and communicate the entrepreneurial project to potential financiers. Particular attention is given to the necessity of making reliable forecasts and using an effective format to describe the value proposition, target markets, potential competitive factors, organizational context, expected economic and financial dynamics, and possible risk variables. Besides the business plan, the utility of using the business model canvas to better describe the entrepreneurial idea, the methods of value creation, and distribution associated with the start-up is also mentioned. Finally, pitching, a brief presentation of the entrepreneurial project to potential financiers, is discussed, highlighting the three key principles of effective public speaking: ethos (credibility), pathos (emotional tension), and logos (appropriate language).

The subsequent chapter is the most substantial as it illustrates the main financing tools available to start-ups to meet their financial needs at various stages of the entrepreneurial initiative's life cycle. The roles of business

angels, venture capital operators, and private equity are highlighted. The potential role of closed-end mutual funds, which can play an important role in providing stable risk capital to start-ups, is also mentioned. Among the financial need coverage tools, space is dedicated to those for financing working capital, including short-term loans, bank advances, and commercial credit mobilization tools such as factoring, which is given particular depth. The chapter also discusses traditional fixed capital financing forms like self-financing, loans, and leasing, in both financial and operational leasing forms. The option of direct access to the capital market through stock exchange listing is also recalled, highlighting the role of stock exchange listing and the Italian Telematic Stock Market and Euronext Growth Milan. In Italy, access to this stock market segment for small and medium enterprises is particularly facilitated in terms of requirements, costs, and listing times, to encourage smaller companies to cover financial needs also by directly resorting to the market. Finally, the chapter also recalls Law no. 232/2016, which created Individual Savings Plans in Italy to direct household savings towards financial instruments of Italian and European industrial and commercial companies rooted in the Italian territory, providing tax incentives to savers. In essence, the chapter is a compendium of financing tools, described in good detail, that anyone wishing to create a new business should read to acquire the basic financial knowledge necessary to meet the funding needs associated with the entrepreneurial idea's development over time. Further insights into how to finance a start-up are contained in the fourth chapter, dedicated to innovative financial instruments, at least in the Italian market. In particular, financial bills, subordinated participatory bonds, and minibonds are illustrated, delineating in parallel the characteristics of Borsa Italiana's ExtraMOT PRO, the secondary market for debt securities where investors can trade and liquidate investments. Another innovative financing tool, alternative to traditional financial instruments, is crowdfunding, an online collective financing form where companies requesting funds directly appeal to the crowd for loans (lending crowdfunding) or equity capital (equity crowdfunding), or donations (donation crowdfunding, reward crowdfunding). An innovative form of crowdfunding is the Initial Coin Offering, through which the necessary funds for financing a business project are raised. Financial resources are collected following the issuance of digital coins or tokens by the fund requester, who will receive cash or cryptocurrencies (such as Bitcoin) based on the entrepreneurial project's appeal, described in an information document called a "white paper." Italian regulations have regulated the methods of raising equity capital through online portals by small and medium enterprises and innovative start-ups, also regulating the conduct of crowdfunding platform managers in collecting public savings. Another form of internet-based financing is invoice trading, allowing companies to sell commercial invoices via the

internet in exchange for an advance of money, the amount of which will be set by the outcome of an online invoice auction. The auction's start is subject to due diligence activities aimed at verifying the commercial position's regularity and the credit assignment's correctness. Companies that resort to this tool are typically small and medium-sized enterprises with difficulties accessing bank credit that need to speed up collections as much as possible for liquidity needs. The chapter also dedicates ample space to describing business incubators and the role they play in providing support services for creating and developing new entrepreneurial initiatives. Besides logistical, consulting, and network creation support services, incubators are valuable in facilitating access to financing, which represents one of the crucial resources for the success of new businesses. In the innovation ecosystem, venture builders play an important role, defined by the authors as "start-up factories" whose main purpose is to quickly and efficiently create high-value businesses.

In the fifth and final chapter, the book addresses the financing issues of socially oriented start-ups, those companies that arise to create products and innovation processes where the social dimension prevails over the economic one, making access to financing even more difficult. In Italy, legal regulations have introduced the socially oriented innovative start-up for which incentives are provided to reward the dual positive aspect of this type of business: innovation and the vocation to create solutions to improve collective well-being. Alongside the growing attention to socially oriented enterprises, a new capital supply segment aimed specifically at providing financing for social impact projects (impact investing) is emerging in the European context. Socially oriented entrepreneurial projects must be appropriately evaluated with specific control tools, both ex ante and ex post, to highlight the new company's ability to generate valuable social outcomes in various intervention sectors, such as healthcare, education and training, cultural heritage management and enhancement, environmental protection, and social tourism. In conclusion, reading this book allows one to gain greater awareness of the financial problems that innovative start-ups face, but also to have a comprehensive understanding of the main available solutions to address these needs. The book is written clearly and instructively, allowing even non-specialist readers to delve into not-so-simple technical aspects. For this reason, it is recommended that students, researchers, and those interested in starting an innovative start-up read this book. The innovative start-up represents a potential path for people with a strong entrepreneurial vocation and a vehicle for innovation in the Italian entrepreneurial system, which has long been tied to traditional sectors that have enabled economic development and well-being for Italians in the past; now it needs a revival and entry into high-value-added sectors thanks to greater knowledge and innovation content in the business model.

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