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Role of Entrepreneurship Education in Bridging Skill Gaps in Corporate Entrepreneurship: A Systematic Review

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Abstract: This literature review re-examines how entrepreneurship education (EE) can be fitted to corporate entrepreneurship (CE) and industry needs. A PRISMA-driven systematic review of 43 peer-reviewed papers was conducted to examine the link between EE and CE and how higher education institutions (HEIs) can effectively prepare graduates for entrepreneurship and intrapreneurship careers. The findings reveal that EE has a supportive and enabling relationship with CE. At the same time, the entrepreneurial background of senior executives is important for overall business intent and performance in a supportive learning environment. The study identifies five key approaches to enhance EE programs: (1) creating an industry-focused supportive curriculum, (2) integrating experiential learning, (3) encouraging industry collaboration, (4) deploying technical tools (5) emphasising EE trainers' skill competencies development. By implementing these strategies, EE programs can equip graduates with the entrepreneurial mindset and skillset needed to improve their employability and drive innovation in corporate settings, ultimately enhancing business adaptability and competitiveness. The study contributes to the entrepreneurship education field by offering a path for adapting EE to prepare entrepreneurial graduates to drive business growth and personal entrepreneurship careers. The study's novelty lies in stressing the underexplored relationship between EE and CE, focusing on how EE can foster intrapreneurship and traditional entrepreneurship. The focus on HEIs to better align EE with the practical needs of corporations is a valuable contribution, especially in an era where businesses require innovative and ready-made corporate graduates due to the availability of limited resources.

Keywords: Entrepreneurship education, intrapreneurship, corporate entrepreneurship, PRISMA, systematic review

1. Introduction

Corporate entrepreneurship (CE) or intrapreneurship has emerged as an approach for organisations to thrive and survive in today's highly competitive and dynamic business world (Covin & Miles, 1999; Wei & Ling, 2015; Zhang & Xie, 2018), covering a range of activities like entering new markets, innovation, and strategic renewal (Morris & Kuratko, 2002; Phan et al., 2009; Zahra, 2015). Businesses practice CE as a strategic response to challenges such as improving efficiency, market changes, competition, and implementing modern management methods (Kuratko et al., 2015; Escriba-Carda et al., 2020). CE success depends on several factors like human resources, transformational leadership, decision-making processes, and organisational culture (Simsek et al., 2007; Ling et al., 2008; Heavey et al., 2009; Montoro-Sanchez & Soriano, 2011). Therefore, entrepreneurial employees are needed because they can recognise market trends and develop creative solutions that increase the organisation's competitive edge (Miço & Cungu, 2023; Tiberius &

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Weyland, 2023). These CE features provide the foundation for companies to nurture innovation and growth that leads to increase in productivity, profitability, and overall business performance (Kuratko et al., 2014; Bierwerth et al., 2015; Karimi & Walter, 2016; Sanchez-Gutierrez et al., 2019; Kraus et al., 2019).

Entrepreneurship education (EE) prepares students for entrepreneurial activities, including CE. This is not just noticeable, but it is a global phenomenon with EE embedded into higher education institutions (HEIs) curricula worldwide. It offers a mix of formal and informal methods, such as teamwork, pitching, mentoring, and product/service development (Jardim et al., 2021; Clevenger et al., 2022) to equip students with the knowledge, skills, and attitudes (KSA) needed to become entrepreneurs or intrapreneurs – in an existing organisation (Boldureanu et al., 2020; Bauman & Lucy, 2021). Furthermore, EE provides a theoretical foundation that allows students to understand the practical aspects of CE (Nowinski et al., 2019), focusing on key entrepreneurial components such as opportunity recognition, risk-taking, and business establishment and management, among others which are germane in corporate settings, and expanding across academic disciplines (Watson & McGowan, 2019). Other skills like marketing strategies and product management in various business contexts are added exposure for the students (Ismail et al., 2018; Nowinski et al., 2019) to be well-equipped to contribute positively to business performance.

However, the connection between this training and industry needs remains weak (Choi & Markham, 2019). Although CE is key for organisational growth, the literature lacks clear examples of its incorporation at HEIs (Belousova et al., 2022) because there is a clear difference between teaching young and inexperienced university students in school and training management professionals in an organisation (Byrne & Fayolle, 2009). While many authors have offered prescriptions for evaluating EE programs, CE education is often neglected (Bouchard, 2007). This systematic literature review aims to bridge this gap by analysing existing research to uncover how EE fosters CE. Particularly, the review seeks to answer the following research questions: 1) What is the relationship between EE and CE? 2) How can EE be better aligned by HEIs with the needs of corporations to develop corporate entrepreneur graduates? The review findings can inform educational institutions and corporate training programs design and implementation to improve performance by leveraging the entrepreneurial backgrounds of their employees. Specifically, EE educators can refine curricula to better prepare students for corporate roles by understanding how EE can translate into corporate entrepreneurial skills.

2. Literature Review

Gifford Pinchot III is recognised as the proponent of intrapreneurship theory in his 1985 book, *Intrapreneuring: Why You Don't Have to Leave the Corporation to Become an Entrepreneur*, where he defines intrapreneurship as "the process of creating new enterprises within established organisations" (Pinchot, 1985: p. 28). Other intrapreneurship terms are internal or corporate entrepreneurship (Birkinshaw, 2003; Hitt et al., 2011; Zahra, 2015) and internal corporate ventures (Garrett & Covin, 2015). Therefore, an intrapreneur is an employee within an existing organisation possessing opportunities and boundaries for their entrepreneurial activities (Kuckertz, 2017; Begeç & Arun, 2021). Departing from the traditional employee role, they take the initiative to develop new products that increase the organisation's growth and competitiveness (Dutta et al., 2020).

As a branch of entrepreneurship theory, the intrapreneurship theory suggests that CE can succeed within organisations by encouraging employees to innovate and act like entrepreneurs (Kassa & Tsigu, 2022). Undoubtedly, EE programs can equip students with the necessary KSA to succeed as intrapreneurs (González-Tejero & Molina, 2022). This connection between EE and intrapreneurship activities ensures that students are well-equipped to add value to CE practices in the various industries they later find themselves. Unlike traditional entrepreneurs, intrapreneurs use their organisation's resources to model their entrepreneurial activities (Moris et al., 2010). Birkinshaw et al. (2002) highlighted three core areas of intrapreneurship: innovation, strategic renewal, and new business development. These areas explain how intrapreneurship can drive organisational growth through risk management, new opportunity identification, and supportive innovation platforms associated with CE. In developing countries, intrapreneurship can promote CE by raising awareness and inspiring entrepreneurial culture.

The theory provides valuable insights into CE practice within organisations, playing a critical role in training individuals to develop intrapreneurial competencies and understanding entrepreneurial leadership Urbano et al., 2024). Therefore, EE can be an effective tool to produce a corporate-ready workforce to adopt CE as a business model, addressing the gap in HEI-industry practices and business needs. (Tran, 2015; Matsouka & Mihail, 2016).

3. Methodology

3.1 Research Design

A thorough analysis of scholarly literature using a systematic literature review (SLR), drawing on peer-reviewed papers from Google Scholar and Scopus. The Scopus database was chosen because it is a premier abstract and citation database for peer-reviewed literature, containing over 21,600 peer-reviewed journals from over 4000 international publishers in various scientific disciplines, with over 70 million records (Moher et al., 2015; Chandio et al., 2020; Salisu et al., 2024). We followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guideline, which improves systematic reviews' quality, dependability, transparency and thoroughness of the evaluation procedure (Page et

al., 2021; Utaminingsih et al., 2023). A focused search for terms about corporate entrepreneurship and entrepreneurship education was made easier by applying the PRISMA statement.

3.2 Search Strategy

The databases' extensively index and peer-review scientific papers were selected for the articles search identification stage. They are well-known and used for systematic literature reviews by academics worldwide. Searching for "corporate entrepreneurship" and "entrepreneurial education" papers was the first stage in the desk review process. Others included are "curriculum development", "curriculum integration", "experiential learning", "skill development", "competent building", technical tools", "corporate partnership", "learning environment", and "higher education institutions". These keywords were further combined with others using Boolean operations to ensure a comprehensive investigation of the subject matter. Table 1 shows the search string employed in searching the articles.

Table 1. Search string

Main Search	(entrepreneurship education AND corporate entrepreneurship)
Subsequent search 1	(entrepreneurship education AND higher education institutions OR HEIs), (corporate entrepreneurship AND higher education institutions OR HEIs), (entrepreneurship education AND corporate entrepreneurship AND higher education institutions OR HEIs)
Subsequent search 2	(curriculum development OR curriculum integration AND entrepreneurship education OR corporate entrepreneurship), (experiential learning AND entrepreneurship education OR corporate entrepreneurship), (corporate partnership OR corporate collaborations AND entrepreneurship education OR corporate entrepreneurship), (skill development OR competency building AND entrepreneurship education OR corporate entrepreneurship), (technical tools AND entrepreneurship education OR corporate entrepreneurship), (learning environment AND entrepreneurship education OR corporate entrepreneurship

Source: Authors' construct

3.3 Search Process

The PRISMA flowchart (Fig. 1) was used to present the findings. Initially, 305 articles were identified through the literature search for eligibility. Of these, 156 were excluded due to irrelevant titles or duplication, leaving 149 articles for further assessment. Full-text versions of these 149 relevant articles were obtained for further evaluation. 60 studies were excluded as they were not pertinent to the investigated topic. Additionally, during the full-article screening phase, 46 more articles were excluded for not being peer-reviewed or not being in English. Ultimately, 43 articles met the selection criteria and were included in the study. A data extraction template (Table 2) was used to document information from these 43 studies systematically.

3.4 Inclusion and Exclusion Criteria

The review employed clearly defined analytical criteria and established specific inclusion and exclusion standards to stay focused on the research questions. The emphasis was on recent studies, but since most relevant articles on the research questions were published from 2007 onward, the searches were limited to publications from that year. Articles originally written in English were considered, reflecting the common practice of prioritising English in scientific discourse, as Keupp et al. (2012) noted. Finally, the review was limited to "peer-reviewed research articles" and "review" papers, as these provide the most up-to-date and impactful insights in the field (Keupp et al., 2012; Yusuf et al., 2022).

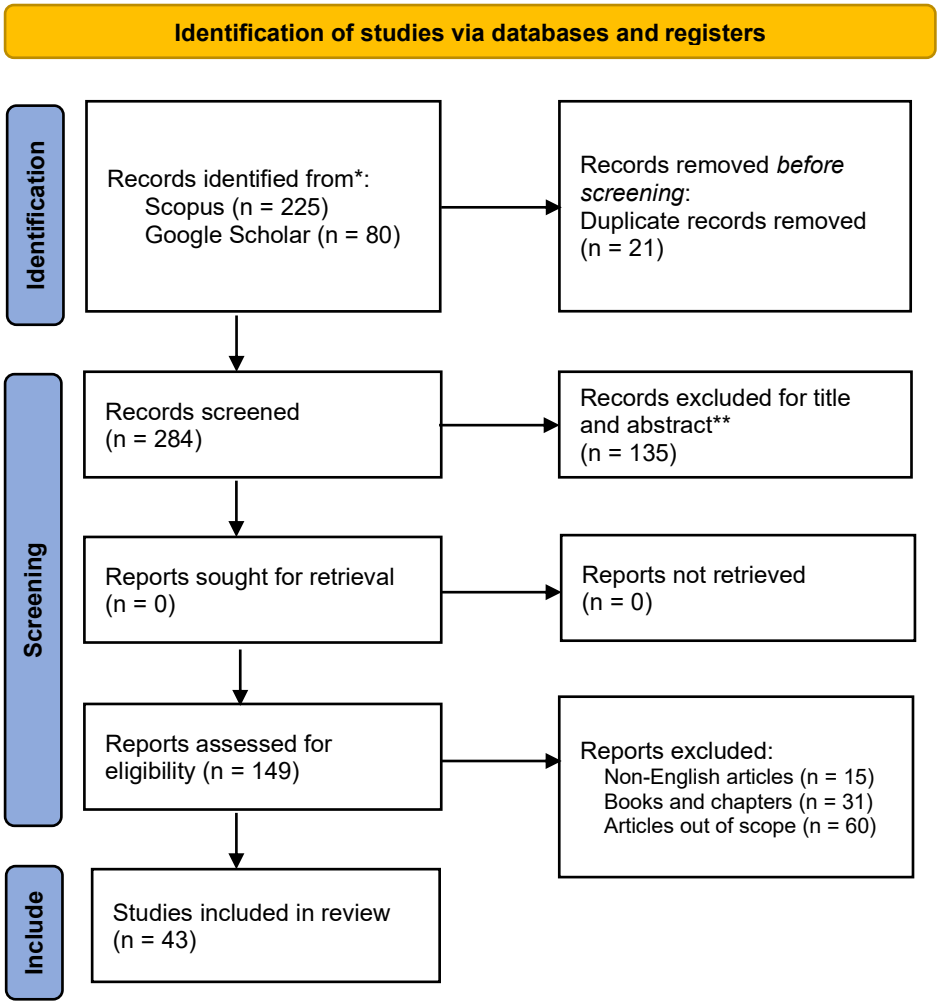

Fig. 1. PRISMA flow diagram

4. Results

4.1 Descriptive Analysis of Reviewed Articles

The study's discussion was founded on the data gathered from the examined publications and has been methodically arranged to reveal several significant literature gaps and offer deeper insights into the research issue. Additionally, these results have been contextualised by matching the journals looked at in this review and explicitly answering the research questions. The study reference, methodology, relation with research questions, researcher country, and research approaches as shown in Table 2.

Table 2. Data extraction table

Author/Year	Methodology	RQ*	Affiliation & Country	Research affiliation	Journal publication
Arranz et al. (2022)	Qualitative (Interviews, (7036 EU firms) Case Studies)	1&2	Spain & UK	Entrepreneurship education	*Studies in Higher Education*
Ayoungman et al. (2022)	Quantitative (Survey-based)	1	China	Not mentioned	*Journal of Organisational and End User Computing (JOEUC)*
Badzińska (2019)	Qualitative (150 Observation and interview)	1&2	Poland	Engineering management	*European Journal of Social Science Education and Research*

continued

Bauman & Lucy (2021)	Mixed Methods (Surveys and Interviews)	1&2	USA	Strategic Management	*The International Journal of Management Education*
Belousova et al. (2022)	Qualitative (Teaching Case Studies)	1&2	Belgium	Not mentioned	*Annals of Entrepreneurship Education and Pedagogy – 2023*
Boldureanu et al. (2020)	Mixed Methods (Survey, Case Studies)	1&2	Romania	Entrepreneurship Education	*Sustainability*
Byrne & Fayolle, (2009)	Qualitative (review and Theoretical Model)	1&2	France	Entrepreneurship education	*Industry and Higher Education*
Byun et al. (2018)	Quantitative (Case Study and Survey – 600 graduate)	1&2	South Korea	Business administration	*Journal of Open Innovation: Technology, Market, and Complexity*
Chen et al. (2022).	Quantitative 581 undergraduates	1&2	China and Australia	Entrepreneurship Education	*Sustainability*
Chiraphol et al. (2022)	Qualitative (Observation 60 MBA students)	2	Singapore	Business and management	*International Journal of Educational Technology and Learning*
Choi & Markham, (2019)	Qualitative 28 professionals	1&2	USA	Business and Accounting	*Journal of Open Innovation: Technology, Market, and Complexity*
De Waal & Maritz, (2019)	Qualitative (Review, Case Study)	1&2	Australia	Entrepreneurship and Innovation	*Revista de Cercetare si Interventie Sociala*
Fitzky et al. (2023)	Qualitative (Knowledge Transfer 2450 employees of SMEs)	1&2	Germany	Management Technology	*Progress in Entrepreneurship Education and Training*
Ford et al. (2017)	Qualitative	2	USA	Business administration	*Business Horizons*
Gillin et al. (2019)	Qualitative longitudinal study of Partners and staff	1&2	Australia	Entrepreneurship and Innovation	*Journal of Business Strategy*
González-Tejero & Molina, (2022)	Quantitative Survey 241 SMEs	1&2	Spain	Marketing	*Journal of Enterprising Communities: People and Places in the Global Economy*
Han & Park (2017)	Qualitative Review	1&2	South Korea	Management Science	*Asia Pacific Journal of Innovation and Entrepreneurship*
Ilonen & Heinonen (2018)	Quantitative 74 students	1&2	Finland	Management and Entrepreneurship	*Industry and Higher Education*
Iqbal et al. (2022)	Quantitative (Survey-based) 470 pre service teachers	2	China, Finland Pakistan Spain	Entrepreneurship Education	*Frontiers in Psychology*
Jardim et al. (2021)	Qualitative (Systematic Review)	1	Portugal	Entrepreneurship Education	*Education Sciences*
Kassa & Tsigu (2022)	Mixed Methods (Survey and Case Study)	1	Ethiopia	Not mentioned	*International Journal of Organisational Analysis*

continued

Kuratko & Morris (2018)	Qualitative (Literature Review)	1&2	USA	Business administration	*Entrepreneurship Education and Pedagogy*
Luo et al. (2022)	Quantitative (Survey)1110 college students	1&2	China	Entrepreneurship education	*Sustainability*
Lv et al. (2021)	Quantitative (Survey) 5,603 Chinese students	1	China	Entrepreneurship Education	*Frontiers in Psychology*
Magdinceva-Sopova et al. (2016)	Quantitative (Survey)	1	North Macedonia	Tourism and Business logistics	*Economic Development, Journal of the Institute of Economics-Skopje*
Maritz et al. (2022)	Qualitative	1&2	Australia	Business and management	*Journal of Small Business and Enterprise Development*
Martin-Rojas et al. (2013)	Quantitative 160 EU firms	1&2	Spain	Economics and Business	*Technovation*
Marvel et al. (2007)	Quantitative	1	USA	Management science	*Entrepreneurship Theory and Practice*
Miço & Cungu (2023)	Quantitative Questionnaire 233 teachers	1&2	Albania	Law	*Administrative Sciences*
Nam et al. (2023)	Quantitative Survey 344	1	South Korea	Not mentioned	*SAGE Open*
Ndemezo & Kayitana (2018)	Quantitative Survey 241 firms	1	Rwanda	Economics	*Indian Journal of Corporate Governance*
Ndofirepi (2020)	Quantitative (Survey)	1	South Africa	Business and management	*Journal of Innovation and Entrepreneurship*
Oliver & Oliver (2022)	Qualitative (Case Study)	1&2	UK	Business and management	*Industry and Higher Education*
Prabhakar et al. (2019)	Quantitative Experimental design 60 horticulture students	1	India	Horticultural science	*Journal of Pharmacognosy and Phytochemistry*
Rao & Mulloth (2017)	Qualitative Review	1&2	USA	Engineering	*International Journal of Innovation and Technology Management*
Saputra et al. (2023)	Qualitative (Systematic Literature Review)	1	Indonesia	Entrepreneurship education	*West Science Interdisciplinary Studies*
Seikkula-Leino (2011)	Quantitative 43 Municipalities	1	Finland	Entrepreneurship Education	*Journal of Curriculum Studies*
Tiwari et al. (2014)	Quantitative (Survey-based)	2	India	Strategic management and Entrepreneurship	*The International Journal of Management Education*
Towers et al. (2020)	Qualitative (Review)	1	UK, France, Indonesia and Ireland	Business and management	*International Journal of Retail and Distribution Management*
Urbano et al. (2024)	Qualitative (Theoretical Review)	1	Spain	Not mentioned	*Frontiers in Education*
Victor and Olatokunbo (2022)	Qualitative Review	2	Nigeria	Management Science	*Saudi Journal of Business and Management Studies*
Winborg & Hägg (2023)	Qualitative (Case Study)	2	Sweden	Economics and Management	*Education + Training*
Yu et al. (2017)	Qualitative	1	Singapore and Taiwan	Not mentioned	*Management Decision*

4.2 Distribution of Reviewed Articles by Year

The 43 reviewed articles on how EE prepares individuals for CE shows that only six articles were published between 2007 and 2016, indicating the early years of EE in HEIs globally, which focused on traditional entrepreneurship in contrast to its integration into corporate settings. An increase is observed from 2017 onward, with 2022 having the most publications (12), as shown in Fig. 2. Suggesting a growing academic interest and a shift in focus towards optimising EE to foster innovation and entrepreneurial skills within established companies. The 2022 (12) and 2023 (6) also suggest post-pandemic economic recovery that businesses need adaptation, innovation and competitiveness. The overall trend shows a clear shift in research focus from general entrepreneurship to the specific role of EE in CE and academia has responded from 2017 onwards.

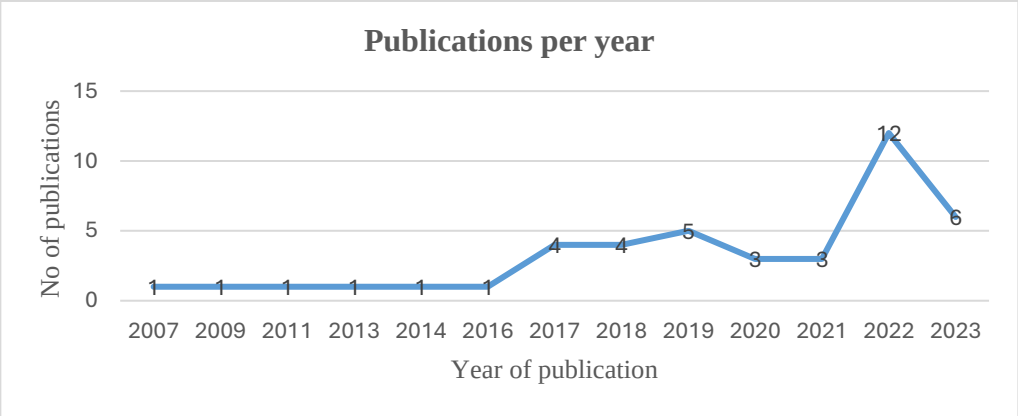

Fig. 2. Yearly distribution of reviewed articles

4.3 Distribution of Reviewed Articles by Methodology

Fig. 3 reveals that the qualitative methodology is the most frequently employed approach in exploring the relationship between EE and CE, with 51% (22 articles) of researchers utilising this method. Many of these qualitative studies review existing literature to understand the perceptions, experiences, and frameworks of how EE fosters CE and corporate entrepreneurial behaviour. 42% (18 articles) studies adopted a quantitative methodology focusing on measurable outcomes such as the impact of EE on corporate innovation, entrepreneurial intention, and business performance. These studies typically use questionnaires and statistical tools to analyse data, providing measurable insights into how EE impacts CE. The approach allows for examining specific variables and testing hypotheses, offering data-driven suggestions for aligning EE with corporate needs.

The remaining 7% (3 articles) employed the mixed-methods approach that allow researchers to authenticate qualitative insights with quantitative data providing a more comprehensive perspective of how EE equips individuals for CE activities. Summarily, these studies contribute valuable insights into how HEIs can align EE with corporate needs by providing rich qualitative narratives and quantitative evidence.

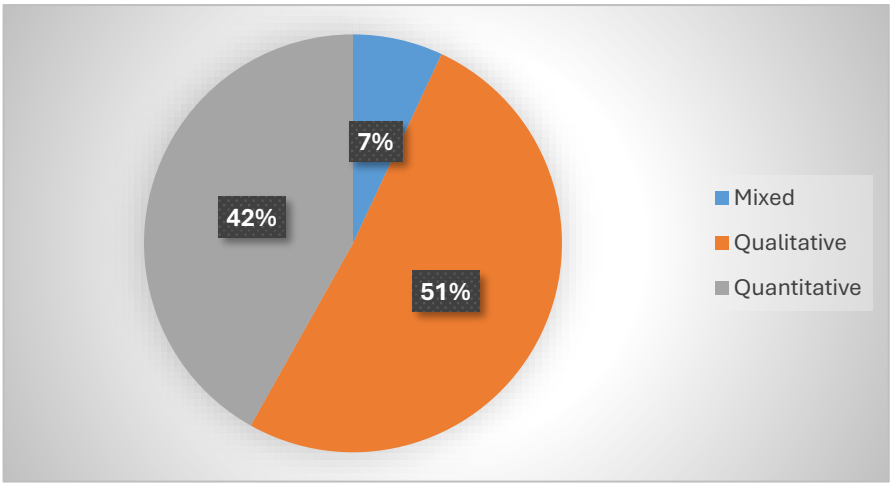

Fig. 3. Distribution of reviewed articles by the methodology used

4.4 Distribution of Reviewed Articles by Researchers' Country of Affiliations

The countries highlighted in Fig. 4 are derived from the reviewed articles to provide a global research landscape on EE and its role in fostering CE.

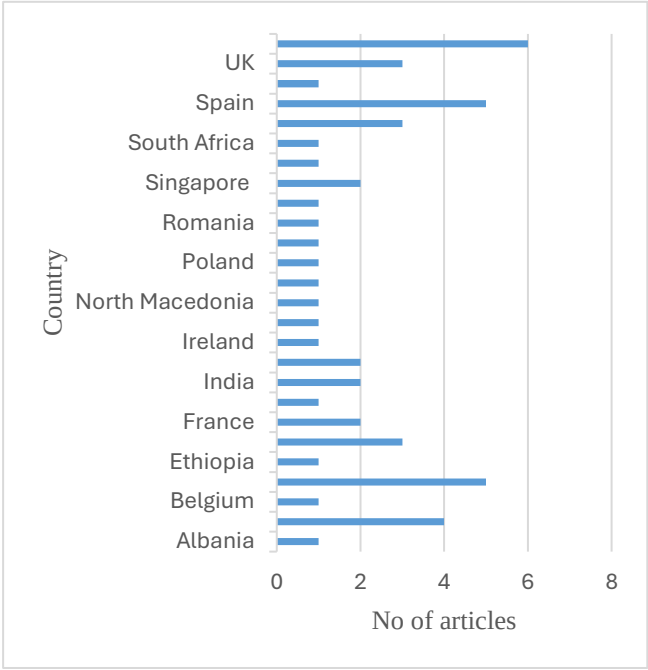

Fig. 4. Distribution of reviewed articles by authors' country of affiliation

From Fig. 4, the US has the highest number of research affiliations, accounting for 12% (6) of the total articles reviewed. This dominance reflects the robust emphasis on EE within American HEIs and their contribution to the field. China and Spain follow with 10% (5) each, indicating a strong interest and investment in EE in both countries. It is noteworthy that the total number of countries is 52, as 9 articles have different authors with different countries of affiliation, as shown in Table 1. Regionally, though not evenly represented, all were represented except the South American countries. The general insight from these shows that more research is needed on how EE fosters the entrepreneurial skills needed for CE in those regions with fewer research papers.

4.5 Distribution of Reviewed Articles by Authors' Affiliations

For deeper insights into the explored concepts and the interdisciplinary nature of entrepreneurship and EE, an analysis was conducted on the first authors' affiliations in the reviewed articles. Table 3 provides insights into how these topics traverse diverse fields of study.

Table 3. Authors affiliations

Authors affiliations	Number of articles	Percentage (%)
Business administration	3	6.98
Business and Accounting	1	2.33
Business and management	5	11.63
Economics	1	2.33
Economics and Business	1	2.33
Economics and Management	1	2.33
Engineering	1	2.33
Engineering management	1	2.33
Entrepreneurship and Innovation	2	4.65
Entrepreneurship Education	10	23.26
Horticultural science	1	2.33
Law	1	2.33
Management and Entrepreneurship	1	2.33
Management Science	3	6.98
Management Technology	1	2.33

continued

Marketing	1	2.33
Not mentioned	6	13.95
Strategic Management	1	2.33
Strategic Management and Entrepreneurship	1	2.33
Tourism and Business Logistics	1	2.33
Total	**43**	**100.00**

The domination of scholars from Entrepreneurship Education (23.26%) highlights their interest in EE bridging skill gaps in CE. Management scholars' contribution also demonstrates the role of EE is widely explored by scholars in this discipline, underscoring the connection between EE and management studies. Nonetheless, the cross-disciplinary contribution from Law, Engineering, and Horticultural Science emphasises EE's relevance and applicability across diverse sectors and disciplines. The strategic management's field contribution suggests a strategic dimension in aligning EE with CE to foster business entrepreneurial capabilities. This analysis not only underscores the multifaceted nature of EE but also highlights the collaborative efforts across different academic domains to advance our understanding of CE.

5. Discussion

5.1 Relationship Between EE and CE

Emphasising the importance of education for CE, Ndemezo & Kayitana (2018) assert that top managers' educational backgrounds significantly enhance corporate performance and CE. Lv et al. (2021) found that EE programs positively influence entrepreneurial competence that prompts an individual's entrepreneurial intention (an outcome of EE). Miço & Cungu (2023) concluded that these competencies are viable tools for success in CE activities and are boosted by integrating entrepreneurial learning. Besides, Ayoungman et al. (2022) assert that EE greatly improves CE by fostering entrepreneurs' ability endowment, consisting of knowledge, skills, and social capital.

According to Choi & Markham (2019), EE in the innovation system strengthens a company's capacity and innovation at the organisational level. Developing intrapreneurial leaders who stimulate innovation is a key function of EE to promote CE within firms (Byrne & Fayolle (2009). These training programs give employees the entrepreneurial ingenuity and managerial competencies needed to oversee creative projects and manage resources efficiently to enhance organisations' sustainable growth and competitive edge. Similarly, Nam et al., 2023 concluded that to inspire CE, individuals or teams must incite innovation in an organisation, while Han and Park (2017) confirmed that innovation happens when firms adopt CE, emphasising that EE for employees enables CE. The competitive advantage of CE is attained through continuous engagement in entrepreneurial activities (Kuratko & Morris, 2018) and encouraging entrepreneurial spirit and skills to recognise and seize opportunities in the corporate setting (Ndofirepi, 2020). Therefore, to improve competitive advantage and sustained growth, businesses can systematically adopt CE practices by developing an entrepreneurial workforce through focused training (Kuratko & Morris, 2018).

5.2 Curriculum Development and Integration

Towers et al. (2020) mentioned that current work challenges demand HEIs to produce entrepreneurial graduates capable of solving emerging socio-economic problems. To this end, Luo et al. (2022) concluded that EE curricula could effectively develop CE skills and CE graduates in a supportive and resource-rich environment. However, the curriculum must be refreshed (Byun et al., 2018), effectively implemented (Iqbal et al., 2022), and HEIs must have a global outlook regarding the programs' methodology and pedagogy in different contexts (Maritz et al. (2019). Stressing the need for an enterprising culture within companies to foster intrapreneurial workforce and CE success.

As EE's potential is widely acknowledged, trainers frequently lack the skills for successful implementation. Thus, Seikkula-Leino (2011) emphasised curricular reform with industry input and trainers' competence development to bridge the theory-practice gap to increase EE effectiveness and promote a CE culture. Choi & Markham (2019) also highlighted that a well-structured entrepreneurship curriculum could foster CE capabilities by integrating entrepreneurial leadership principles and creating student-focused policies that foster innovative thinking.

5.3 Corporate Partnership and Collaborations

Oliver and Oliver's (2022) findings show that trainers can provide different online practical activities that could represent the 'real-life' experience to facilitate learners' acquisition of meaningful knowledge and strengthen HEIs-industry links. By strengthening these links, trainers can develop a range of practical activities representing the industry's 'real-life' experience (Tiwari et al., 2014), while corporations could also learn to be entrepreneurial regardless of size, age, or industry sector from HEIs-industry interaction (Gillin et al. 2019). Additionally, Yu et al. (2017) concluded that HEIs-government collaboration is essential for the EE programme to prepare graduates for CE effectively.

With HEIs' connecting with multiple stakeholders, Maritz et al. (2022) believe adopting the student entrepreneurship ecosystem (SEE) approach will allow educators to enhance the success of HEIs student start-ups that make them entrepreneurs or intrapreneurs. Similarly, Maritz, Towers et al. (2020) concluded that with a tripartite

approach – staff-students-external partners – HEIs can use EE to develop (i) an entrepreneurial mindset, (ii) skills for enterprise development, (iii) skills for start-ups (iv) capability for strategic ambidexterity (v) capability for a sustainable business model.

5.4 Experiential Learning Opportunities

Stemming from students' different learning styles, Ilonen and Heinonen (2018) assert that corporate entrepreneurial mindset and action are possible learning outcomes of EE in HEIs. With experiential learning methods combined with theoretical background typology, De Waal and Maritz (2019) stated that it prepares students for CE practice irrespective of their educational background, while Olivier and Olivier (2022) added that it translates theory to practice creatively.

Winborg and Hägg (2023) suggested a work-integrated learning model that combines studentship with work as project work to enhance students' employability and CE practices. Similarly, Chiraphol et al. (2022) discovered that experiential learning in EE significantly improves students' practical skills and EM when supported by student-startup collaboration. This practical method closes the theory-practice gap and develops critical skills that make students act as intrapreneurs in corporate environments. In their study on horticultural learning, Prabhakar et al. (2019) discovered that experiential learning in EE successfully develops a wide range of CE skills like team coordination, communication, and dispute resolution, among others. Further, Badzińska (2019) study reveals that it enhances corporate entrepreneurial abilities, as evidenced by program participants' reflections.

5.5 Skill Development and Competencies Building

Rao & Mulloth (2017) concluded that HEIs can enhance graduates' capacity to create technology-based ventures. However, they must (i) create awareness and stimulate entrepreneurial ideas, (ii) support new venture teams with both internal and external resources available, (iii) assist entrepreneurs with a network of venture capitalists as well as other internal and external resources, and (iv) update themselves with policies on entrepreneurship and innovation while ensuring successful implementation within the campus and its environment.

Competency building and skill development are critical components of EE that empower aspiring entrepreneurs to navigate the industry's challenges successfully, especially efficient resource allocation and risk management, which reduces business failure and fosters sustainable CE (Victor Barinua and Olatokunbo, 2022). Victor et al. (2022) further emphasise the necessity of obtaining requisite competencies before establishing a business, noting a correlation between skill enhancement and entrepreneurial growth. Additionally, González-Tejero & Molina (2022) demonstrated that CE processes are impacted by skills and competency–focused organisational training programs positively. Summarily, skill development gives entrepreneurs the tools needed to succeed in business and compete in the marketplace (Magdinceva Sopova et al., 2016).

5.6 Incorporation of Technical Tools and Platforms

Incorporating technical tools and platforms like virtual learning environments (VLEs) in EE effectively simulates real-world work experiences, enhancing students' practical skills in innovation and problem-solving. This approach allows for involving activities and industry professional masterclasses to bridge the theory-practice gap and promote CE skills without physical industry presence (Oliver & Oliver, 2022). Furthermore, Ford et al. (2017) stress that such educational activities should focus on collaboration between students, trainers, and industry professionals, ensuring easy technology accessibility while building industry-academia connections.

Marvel et al. (2007) argue that incorporating technical tools enhances experimentation and innovation in CE significantly by providing the infrastructure needed for testing and improving new ideas. These tools encourage risk-taking by enabling structured experimentation and real-time feedback that ensure the use of resources such as money, time, and talent effectively to foster innovation, explore new opportunities and develop competitive advantage skills.
Martin-Rojas et al. (2013) highlight three technological tools that HEIs can adopt to promote CE-ready students: (i) technology management systems (TMS), (ii) technological skills, and (iii) technological dynamic capabilities (TDCs). TMS provides a strategic framework for effective technology management and strong technological skills that enable managers and entrepreneurs to innovate and adapt in a fast-changing business environment. TDCs facilitate successful technology implementation and transfer to enhance an organisation's competitive edge. Combining these technological resources enables businesses' continuous innovation and maintains a competitive advantage in technology-driven landscapes and industries.

5.7 Aligning EE By Heis with the Needs of Corporations to Develop Corporate Entrepreneur Graduates.

Producing well-equipped graduates to foster growth, drive innovation, and create value within corporate settings is critical to aligning EE with the needs of corporations. By embracing hands-on learning experiences, collaboration, and lifelong learning, HEIs can produce the next generation of corporate entrepreneurs. Fikty et al. (2023) concluded that SMEs can gain immensely from EE knowledge transfer through SME-universities collaboration. The institutions can, in turn,

produce a new body of knowledge with the collaboration leveraging on the insights from SMEs activities. This symbiosis relationship protects the SMEs' future needs by providing intrapreneurs who are a valuable workforce for the SMEs.

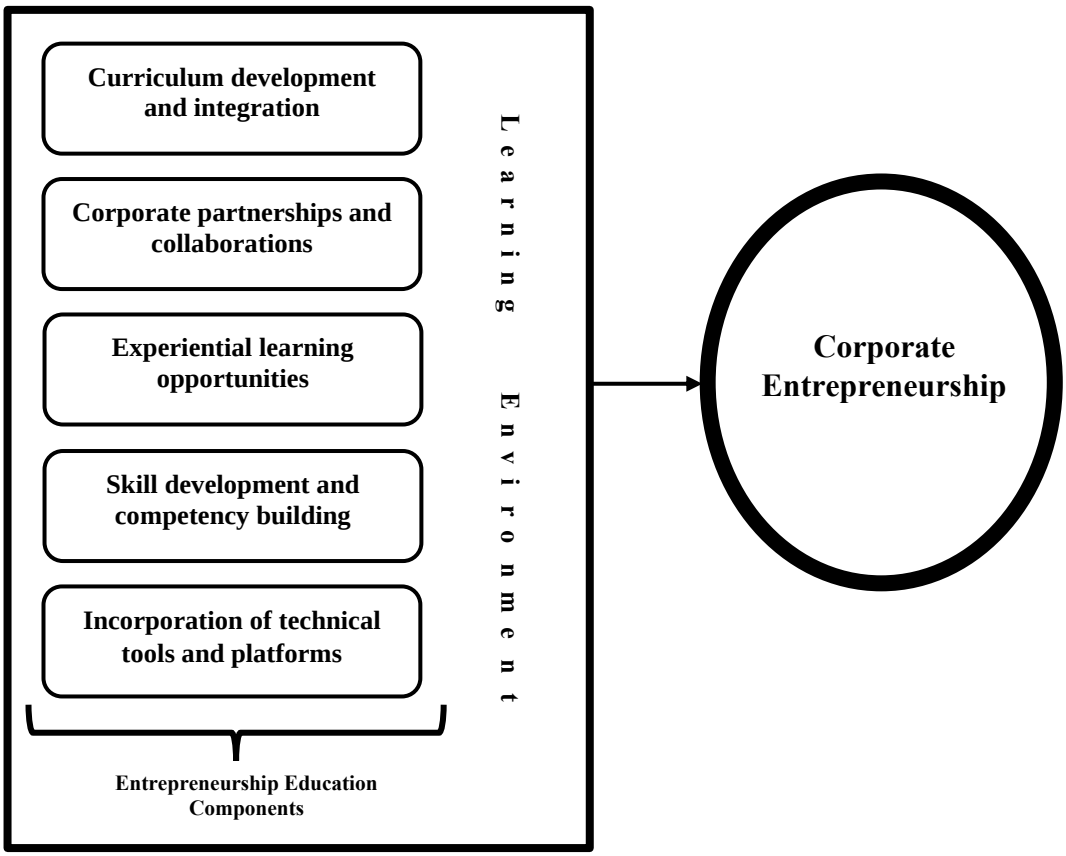

Fig. 5. Framework for aligning EE by HEIs for promoting CE

The above conceptual framework was developed from insights in the reviewed literature on how HEIs can integrate CE into their EE programs. To better align EE with corporate needs and produce corporate entrepreneurs, HEIs should strengthen their partnerships with businesses. This can be achieved by providing students with real-world experiences, internships, and project-based learning tied to corporate challenges. Involving businesses in curriculum design ensures that the skills taught are up-to-date and relevant, providing competencies to drive CE, enhance employability and meet today's business needs (Arranz et al., 2022). A supportive learning environment with mentorship programs, networking events, incubation centres, and industry collaborations boosts EE programs' effectiveness and fosters CE competencies among students (Iqbal et al., 2022). Chen et al. (2022) study concluded that a diverse learning environment positively influences students' entrepreneurial competencies by boosting their self-efficacy, innovativeness, knowledge transfer and cognitive flexibility, and adaptability skills that are essential for entrepreneurship.

The review concludes that EE has a supportive and enabling relationship with CE as researchers (Han and Park, 2017; Nam et al., 2023) have shown that EE equips individuals with the skills and knowledge needed for innovation, a key driver of CE. Effective EE program implementation increases students' entrepreneurial competence (Lv et al., 2021), leading to becoming intrapreneurs within organisation and innovative workforce, enabling companies to implement CE initiatives successfully. Summarily, EE provides the skills and foundation necessary for individuals and companies to engage in effective CE.

To better align EE with corporate needs and develop graduates for CE, HEIs should focus on these key areas: 1) Curriculum should be reformed to be relevant and foster needed entrepreneurial skills, 2) Trainers' capacity must be improved to deliver the updated curriculum effectively, 3) Industry collaboration for practical learning experiences, exposure to 'real-world' challenges, and curriculum development, 4) HEIs should prioritise experiential learning opportunities to bridge the theory-practise gap and cultivate crucial skills (creativity, problem-solving, and resilience) for CE, 5) Integration of technical tools and platforms. For example, technology management systems (TMS) can equip students with the skills to manage technology effectively, a key aspect of CE today and virtual learning environments (VLEs) can simulate real-world work experiences, fostering innovation and problem-solving skills. By focusing on capacity development, embracing collaboration, technology integration and practical learning experiences, HEIs can bridge the gap between EE and CE, producing graduates with the necessary KSA to thrive in the corporate entrepreneurship world.

6. Conclusion

In today's dynamic business landscape, companies must innovate to remain competitive and drive CE activities internally. Traditionally, entrepreneurship education (EE) focused on preparing individuals to become entrepreneurs – starting their own business –but its value in corporate contexts is recognised to foster now intrapreneurs – acting like entrepreneurs within an organisation. This review explores and finds a positive relationship between EE and CE. Additionally, managers' educational backgrounds significantly impact business performance and CE adoption. HEIs can adopt five key strategies to enhance EE programs to promote CE. These include developing a supportive curriculum, integrating experiential learning, fostering HEIs-industry collaborations, emphasising skill development, and adopting technical tools, all within a supportive learning environment. This research contributes theoretically by showing how EE program fosters both entrepreneurs and intrapreneurs highlighting the relationship between EE and CE. It positions EE as a viable tool for developing innovative, corporate-ready employees and addressing gaps in aligning EE with corporate needs. It also emphasises technology's role in EE effectiveness, providing students with technological skills and problem-solving skills crucial for corporate environments. This perspective is underexplored in previous research.

HEIs managers and policymakers should actively promote integrating experiential learning methods into EE to develop intrapreneurial skills crucial for innovation and corporate adaptability. Essentially, developing an effective entrepreneurial ecosystem that connects HEIs, industry, and government to provide students with practical insights into real-world challenges and CE needs is necessary. Besides, EE trainers' competency must be continuously developed with modern pedagogical techniques and entrepreneurial skills. A robust policy framework to support interdisciplinary curriculum development with industry actively involved. Furthermore, HEIs should seamlessly integrate incorporated accessible technological tools like Technology Management Systems (TMS) and AI platforms to foster problem-solving and innovation skills. Experiential learning modules, combined with Virtual Learning Environments (VLEs), will also enhance students' decision-making abilities, equipping them with the KSA necessary for CE success.

Reliance on qualitative data and self-reported measures may introduce biases and affect the reliability of the results. The study emphasises immediate entrepreneurship education outcomes, potentially overlooking the long-term impact on students' careers and corporate performance. Although the review emphasises the interdisciplinary nature of EE, this may not fully capture the unique challenges and complexities imminent in integrating EE across various academic disciplines. Future research could conduct a longitudinal study to track the long-term impact of EE on graduates' intrapreneurial activities and entrepreneurship careers. Extending research to different HEIs levels (university, polytechnic, and college of education) and diverse regions will enhance the generalizability of the findings. Using the mixed method would provide a more robust analysis of EE effectiveness. Moreover, exploring interdisciplinary strategies for integrating EE and assessing the impact of policy measures in supporting EE within academic and industry outcomes would be worthwhile.

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