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MAPPING THE LANDSCAPE: A BIBLIOMETRIC ANALYSIS OF COMPETENCIES AMONG ENTREPRENEURIAL EDUCATORS

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Abstract: *Entrepreneurship education is crucial for shaping the future of individuals and societies, providing learners with the skills, mindset, and knowledge to innovate, seize opportunities, and drive economic and social progress. It empowers individuals to foster innovation, create sustainable businesses, and advance the SDGs by promoting economic growth, reducing inequalities, and supporting sustainable development. By analyzing articles published in the Scopus database between 2018 and 2023, this study investigates publication patterns, identifies prominent authors, and explores citation metrics. The study provides insight into the scientific discussion on the competencies of entrepreneurial education, including the network on the co-occurrence of keywords, using VOSviewer. The data shows that scholars from all over the world have published 1276 articles. According to the data, 660 of the 1276 published documents (51.72%) come from articles as a source type. The data also shows that 32% of all articles originate from the social sciences. The article written by Neck H.M. and Corbett A.C. ranked first in terms of dissemination and was cited a total of 269 times by academics. The keyword trends were also used to identify further research topics for this theme. This study provides valuable insights into the academic discourse on the competencies of entrepreneurial educators, including the global research focus, leading academics, and influential institutions.*

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Keywords: *Competencies, Entrepreneurial Educators, Bibliometric Analysis, Network Map*

Introduction

In the ever-evolving landscape of higher education, the significance of entrepreneurial educators in shaping the future of aspiring entrepreneurs has gained growing recognition (Iglesias-Sánchez et al., 2019; Otache, 2019; Widjaja et al., 2022). The fusion of academic expertise and entrepreneurial acumen forms the foundation of effective entrepreneurship education, and understanding the competencies possessed by these educators becomes paramount. This bibliometric analysis embarks on a journey to unravel the intricacies surrounding the competencies of entrepreneurial educators in the realm of entrepreneurship education, delving into the wealth of scholarly literature to distill insights that can inform and elevate pedagogical practices. Entrepreneurship education has evolved beyond the traditional classroom setting, requiring educators to possess a unique blend of skills, knowledge, and mindset to effectively nurture the entrepreneurial spirit in students. The competencies of entrepreneurial lecturers serve as the linchpin in this educational paradigm, influencing the development of innovative curricula, fostering an entrepreneurial mindset among students, and contributing to the broader entrepreneurial ecosystem (Aly et al., 2021; Mitchelmore & Rowley, 2013).

As we navigate through the bibliometric landscape, our objective is to identify and analyse high-impact articles that have shaped the discourse on entrepreneurial competencies in entrepreneurship education. By synthesizing findings from influential journals, we aim to map the key themes, methodologies, and emerging trends that have shaped our understanding of what makes an entrepreneurial educator effective in the context of entrepreneurship education. This bibliometric journey not only seeks to provide a comprehensive overview of the current state of research in the field but also aims to contribute to the ongoing dialogue on best practices and future directions. As the demand for entrepreneurial skills continues to grow globally, this analysis strives to be a valuable resource for academics, policymakers, and practitioners alike, offering evidence-based insights into the competencies that drive excellence in entrepreneurship education. Through this exploration, we aspire to inspire and empower educators to excel in their roles, ultimately fostering a new generation of innovative and resilient entrepreneurs (Boldureanu et al., 2020; Hannon, 2018; Rossano-Rivero & Wakkee, 2019).

The landscape of entrepreneurship education is marked by the need for agility and adaptability, mirroring the fast-paced nature of the entrepreneurial journey itself. Entrepreneurial educators, serving as the torchbearers of this transformative education, are tasked with equipping students with theoretical frameworks and the practical skills and mindset essential for navigating the challenges of the business world. This bibliometric analysis engages with the extensive body of literature on the competencies of entrepreneurial educators, recognizing the multi-faceted nature of their role. Entrepreneurial educators are catalysts for innovation, guiding students through experiential learning, fostering creativity, and instilling a resilience that is integral to entrepreneurial endeavors (Abbasianchavari & Moritz, 2021; Ilonen, 2021). Through an evidence-based examination of published works, we aim to distill patterns, gaps, and emerging areas within the discourse, providing a nuanced understanding of the competencies that underpin effective entrepreneurship education. Moreover, this analysis emphasizes the selected articles' high-impact nature, acknowledging their profound influence in shaping

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academic discussions and practical applications. By identifying the most impactful contributions to the field, we aspire to showcase the intellectual milestones that have propelled our understanding of entrepreneurial educators' competencies to new heights.

This study provides a bibliographic analysis of academic publications on the competencies of entrepreneurial educators from around the world indexed in the Scopus database. The aim is to identify emerging themes in the existing body of literature. As Donthu et al. (2021) stated, bibliometric analysis is a widely used and comprehensive method for analyzing and evaluating substantial scientific data. Similarly, Ahmi and Nasir (2019) claim that bibliometric analysis is a remarkably effective method for identifying research patterns in specific subject areas. The specific aims of this study are as follows:

- To identify the trend of publications by year, top author and subject area in competencies among entrepreneurial educators.
- To assess the number of citations by research in competencies among entrepreneurial educators.
- To identify popular keywords in competencies among entrepreneurial educators.
- To investigate research collaboration in competencies among entrepreneurial educators.

The following sections describe the research methodology used to achieve the objectives of this study, followed by an analysis of the research findings. This study concludes with a summary of the findings. The following section deals with the literature review.

Literature Review

Several studies have explored the competencies of entrepreneurial educators and their impact on students' entrepreneurial skills and intentions. One study conducted in Vietnam aimed to explore language undergraduates' entrepreneurial mindset (EM) needs and found that EM course components, including expected learning outcomes, assessment, and instructional plans, needed to be tailored based on learners' needs (Nguyen, 2023). The effects of combining two teaching methods on entrepreneurial intention and found that creativity is a significant predictor of students' entrepreneurial intention (Chaker & Dellagi, 2023). The study also suggested that financial literacy positively influences entrepreneurial knowledge and managing ambiguity, which in turn positively influences entrepreneurial mindset and core self-evaluation (Chaker & Dellagi, 2023).

There is a relationship between educators' competency and entrepreneurial intention among undergraduate students. The study found that the competencies of educators were key predictors of psychological contract fulfilment, which in turn positively influenced entrepreneurial intention (Ismail, 2022). Another study in Nigeria examined teaching methods as correlates of information brokerage entrepreneurial skills acquisition among Library and Information Science undergraduates and found that lecture teaching methods were highly employed for information brokerage entrepreneurial skills (Chikaodi et al., 2022).

These studies suggest that entrepreneurial lecturers play a crucial role in developing students' entrepreneurial skills and intentions. To enhance the effectiveness of entrepreneurship education, lecturers need to possess competencies in entrepreneurship and employ various teaching methods to engage students and help them acquire relevant skills (Dangana et al., 2023). Additionally, the studies highlight the importance of understanding the needs of students and tailoring the design of entrepreneurship courses accordingly (Nguyen, 2023).

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Methodology

Bibliometrics involves the amalgamation, organization, and analysis of bibliographic information derived from scientifically oriented publications (Alves et al., 2021; Assyakur & Rosa, 2022; Verbeek et al., 2002). In addition to conventional descriptive statistics encompassing publishing journals, publication years, and primary author categorization (Wu & Wu, 2017), bibliometrics incorporates sophisticated techniques like document co-citation analysis. Executing a comprehensive literature review entails an iterative process, encompassing the identification of pertinent keywords, literature exploration, and meticulous analysis to construct an all-encompassing bibliography, ensuring dependable results (Fahimnia et al., 2015). In alignment with this methodology, our study concentrates on top-tier publications, recognizing their valuable contributions to the theoretical frameworks shaping the evolution of the research domain. To uphold data reliability, we exclusively utilized the Scopus database for data compilation (Al-Khoury et al., 2022; Di Stefano et al., 2010; Khiste & Paithankar, 2017) . Furthermore, to guarantee the inclusion of high-quality publications, we specifically considered articles published in rigorously peer-reviewed academic journals, purposefully excluding books and lecture notes from our analysis (Gu et al., 2019). It is noteworthy that Elsevier's Scopus, renowned for its extensive coverage, facilitated the collection of publications spanning from 2020 to December 2023 for subsequent analysis.

Data Search Strategy

The study employed a screening sequence to determine the search terms for article retrieval. Study was initiated by querying Scopus database with online TITLE-ABS-KEY ((competencies OR aptitude OR capabilities OR proficiency OR expertise OR skills) AND (entrepreneurial OR entrepreneurship) AND (lecturers OR teachers OR educators)), thereby assembling 1276 articles. Afterwards, the query string was filtered to certain timeline, literature type, and language. The final search string refinement included 660 articles which was used for bibliometric analysis. As of December 2023, all articles from Scopus database relating competencies of entrepreneurial educators, were incorporated in the study.

Table 1: The Search String

Scopus	TITLE-ABS-KEY ((competencies OR aptitude OR capabilities OR proficiency OR expertise OR skills) AND (entrepreneurial OR entrepreneurship) AND (lecturers OR teachers OR educators)) AND (LIMIT-TO (PUBYEAR , 2018) OR LIMIT-TO (PUBYEAR , 2019) OR LIMIT-TO (PUBYEAR , 2020) OR LIMIT-TO (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2022) OR LIMIT-TO (PUBYEAR , 2023)) AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "cp")) AND (LIMIT-TO (SRCTYPE , "j") OR LIMIT-TO (SRCTYPE , "p")) AND (LIMIT-TO (LANGUAGE , "English"))

Table 2: The selection criterion is searching

Criterion	Inclusion	Exclusion
Language	English	Non-English
Time line	2018 – 2023	< 2018
Literature type	Journal (Article), Conference	Conference, Book, Review

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Data Analysis

The datasets encompassing information on the publication year, title, author, journal, citation, and keywords in Plain Text format were procured from the Scopus database, spanning the period from 2018 to December 2023. Subsequently, the acquired data underwent analysis using VOSviewer software version 1.6.19. This software facilitated the exploration and visualization of the data through the application of VOS clustering and mapping techniques. VOSViewer serves as a robust alternative to the Multidimensional Scaling (MDS) approach (Van Eck & Waltman, 2010). In its functionality, VOSViewer aligns with the objectives of MDS, aiming to position items within a low-dimensional space that accurately represents their relatedness and similarity based on the distances between them (Appio et al., 2014). While MDS primarily focuses on computing similarity measures, such as Jaccard indices and cosine, VOSViewer employs a more suitable technique for normalizing co-occurrence frequencies (Van Eck & Waltman, 2010). This methodology of employing VOSViewer in conjunction with its distinct clustering and mapping techniques allows for a comprehensive and visually intuitive analysis of the bibliometric data, providing valuable insights into the patterns and relationships within the scholarly landscape under investigation such as, the association strength (ASij) and it is calculated as:

$$ASij = \frac{Cij}{Wiwj}$$

which is "proportional to the ratio between on the one hand the observed number of co-occurrences of i and j and on the other hand the expected number of co-occurrences of i and j under the assumption that co-occurrences of i and j are statistically independent" (Van Eck & Waltman, 2010). Hence, with help of this index, VOSviewer places items in the form of a map after reducing the weighted sum of the squared distances between all item pairs. The LinLog/modularity normalization was implemented. Furthermore, by applying visualisation techniques through VOSviewer to the data set, patterns built on mathematical relationships were uncovered and analyses such as keyword co-occurrence, citation analysis and co-citation analysis were performed (Appio et al., 2016).

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Result and Discussion

RQ1 What is the trend of publications by year, top author and subject area in competencies among entrepreneurial educators?

Publications by Year

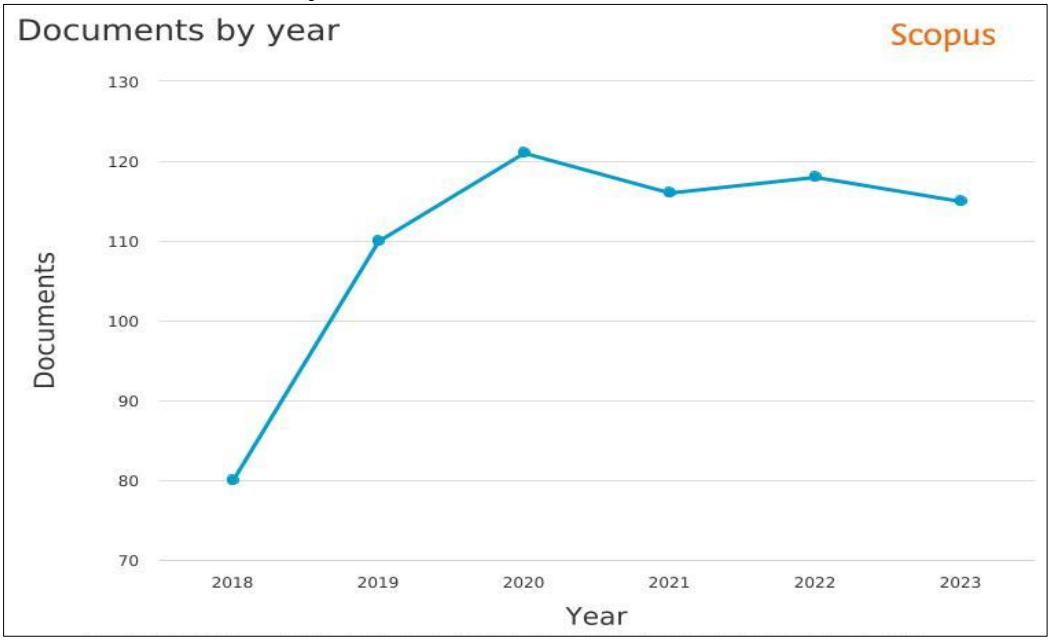

Figure 1: Publications by Year

Figure 1 shows a line graph with the number of documents on the y-axis and the year on the x-axis. The data appears to be from 2018 to 2023, with a slight upward trend in the number of documents published each year. There is a significant jump in the number of documents published in 2021, from 80 to 110. Growing interest in the topic: The increasing number of publications suggests that there is a growing interest in the competencies of entrepreneurial educators. This could be due to a number of factors, such as the increasing importance of entrepreneurship in the global economy, the growing recognition of the role of education in fostering entrepreneurial skills, or the increasing availability of data for bibliometric analysis.

The relatively small number of publications compared to other fields suggests that the study of entrepreneurial educator competencies is still a relatively new field. This means that there are many opportunities for new research in this area. Focus on recent years: The data only covers the years 2018 to 2023. It is possible that there is a longer history of research on this topic that is not captured in this data.

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Publications by Author

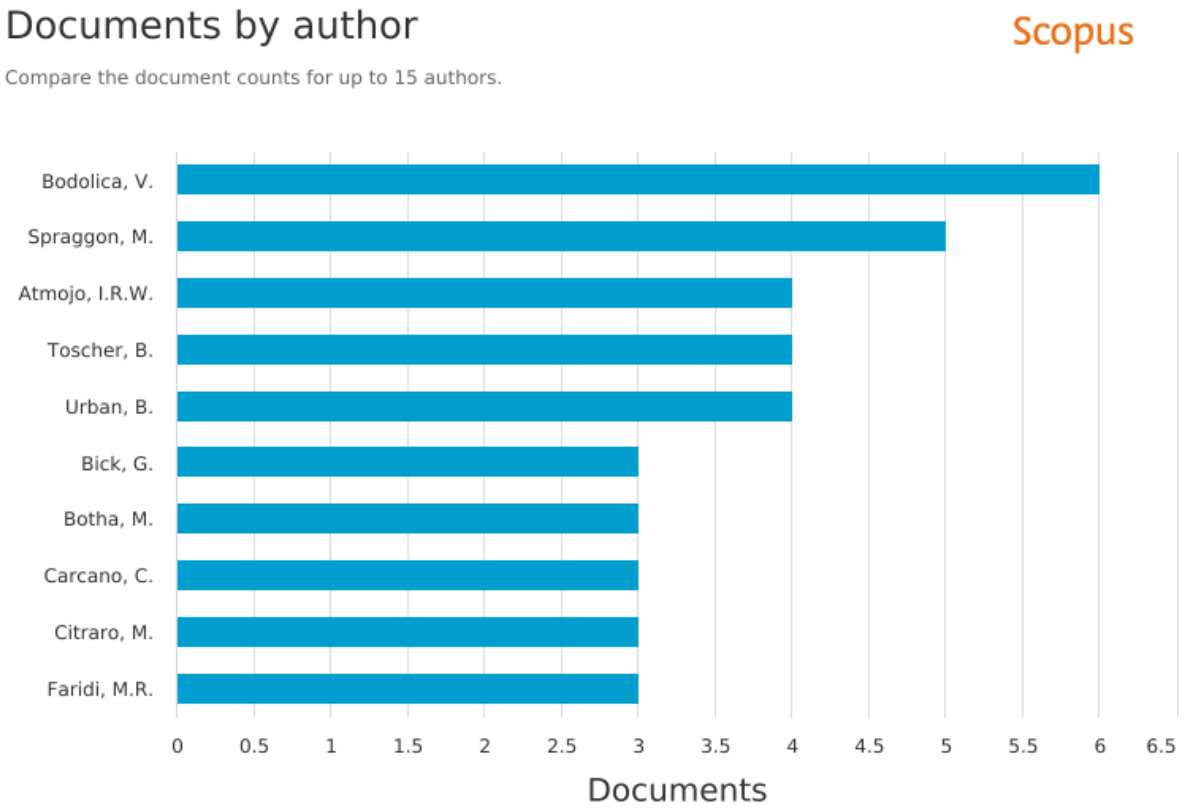

Figure 2: Publications by Author

Figure 2 shows a bar chart with the author names on the x-axis and the number of documents on the y-axis. The top five authors with the most document counts are V. Bodolica, M. Spraggon, I.R.W. Atmojo, B. Toscher, and B. Urban. These authors have all published a significant number of articles on the topic of entrepreneurial educator competencies. Their work has likely helped to shape the field and their research is likely to be of interest to other scholars in this area.

It is also interesting to note that the figure shows a variety of different research areas represented among the top authors. For example, V. Bodolica has published research on the development of entrepreneurial skills in students, M. Spraggon has published research on the role of entrepreneurial educators in promoting economic development, and I.R.W. Atmojo has published research on the challenges faced by entrepreneurial educators in developing countries. This diversity of research interests suggests that the field of entrepreneurial educator competencies is broad and complex.

V. Bodolica stands out as the most productive author, with a significant lead over the others. This suggests Bodolica has been a leading voice in shaping the field, potentially through conceptual frameworks, empirical studies, or methodological contributions. A noticeable gap separates Bodolica from the second-ranked author, M. Spraggon. Spraggon's research might focus on specific aspects of entrepreneurial education or address regional contexts, warranting further investigation.
The remaining authors - I.R.W. Atmojo, B. Toscher, and B. Urban - each have noteworthy contributions despite having fewer publications. Their research likely delves into specific areas within the broader theme, enriching the field's diversity. Atmojo's work might shed light on

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challenges faced by entrepreneurial educators in developing countries, while Toscher and Urban could represent European or North American perspectives.

Publications by Subject Area

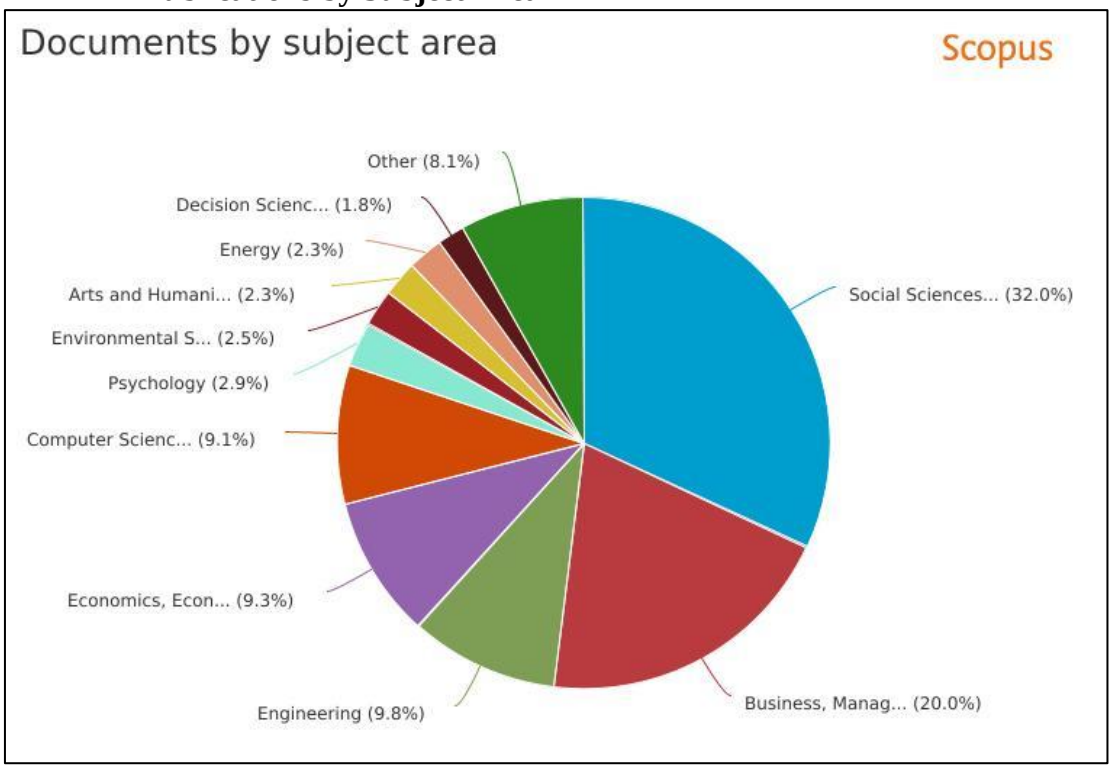

Figure 3: Publications by Subject Area

Figure 3 offers valuable insights into the academic homes of research on entrepreneurial educator competencies. While Social Sciences unsurprisingly dominate, the distribution across other subject areas paints an interesting picture of the field's interdisciplinary nature. Business and Management (20.0%) form the natural foundation, encompassing research on entrepreneurship education curriculum, pedagogical approaches, and the impact of entrepreneurial educators on students' entrepreneurial intentions and skills. Economics (9.3%) highlight the broader societal context of entrepreneurial education, potentially delving into topics like education policy, social entrepreneurship, and the role of entrepreneurial educators in fostering economic development.

Psychological (2.9%) and Arts and Humanities (2.3%) suggest research exploring the cognitive and affective aspects of entrepreneurial learning, such as creativity, risk-taking, and personal development in entrepreneurial educators. Computer Science (9.1%) and Engineering (9.8%) hint at studies on the integration of technology in entrepreneurial education, like using simulations, online platforms, or data analytics to enhance learning experiences. Environmental Science (2.5%) might encompass research on education for sustainable entrepreneurship or the role of entrepreneurial educators in addressing environmental challenges. The relatively small portions of Decision Sciences (1.8%) and Energy (2.3%) suggest potential for further research on data-driven decision-making and sustainability education in the context of entrepreneurial educators. The absence of Education as a major subject area is surprising, as it could provide valuable insights into pedagogical frameworks, teacher training, and assessment methods specific to entrepreneurial education.

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RQ2 What are the top citations in competencies among entrepreneurial educators?

Table 3: Top 10 Number of Citation by Research

Authors	Title	Year	Source title	Cited by
Neck H.M.; Corbett A.C.	The Scholarship of Teaching and Learning Entrepreneurship	2018	Entrepreneurship Education and Pedagogy	269
Douglas E.J.; Shepherd D.A.; Prentice C.	Using fuzzy-set qualitative comparative analysis for a finer-grained understanding of entrepreneurship	2020	Journal of Business Venturing	218
Boldureanu G.; Ionescu A.M.; Bercu A.-M.; Bedrule-Grigoruţă M.V.; Boldureanu D.	Entrepreneurship education through successful entrepreneurial models in higher education institutions	2020	Sustainability (Switzerland)	166
Iwu C.G.; Opute P.A.; Nchu R.; Eresia-Eke C.; Tengeh R.K.; Jaiyeoba O.; Aliyu O.A.	Entrepreneurship education, curriculum and lecturer-competency as antecedents of student entrepreneurial intention	2021	International Journal of Management Education	80
Núñez-Canal M.; de Obesso M.D.L.M.; Pérez-Rivero C.A.	New challenges in higher education: A study of the digital competence of educators in Covid times	2022	Technological Forecasting and Social Change	77
Bauman A.; Lucy C.	Enhancing entrepreneurial education: Developing competencies for success	2021	International Journal of Management Education	60
Lackéus M.	Comparing the impact of three different experiential approaches to entrepreneurship in education	2020	International Journal of Entrepreneurial Behaviour and Research	58
Wu Y.J.; Yuan C.-H.; Pan C.-I.	Entrepreneurship education: An experimental study with information and communication technology	2018	Sustainability (Switzerland)	57
Bell R.; Bell H.	Applying educational theory to develop a framework to support the delivery of experiential entrepreneurship education	2020	Journal of Small Business and Enterprise Development	54
Kakouris A.; Liargovas P.	On the About/For/Through Framework of Entrepreneurship Education: A Critical Analysis	2021	Entrepreneurship Education and Pedagogy	45

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The dataset includes publications from 2018 to 2022, reflecting the growing interest and relevance of entrepreneurial education.

- Neck H.M.; Corbett A.C., (2018) cited by 269 published on seminal work explores the scholarship of teaching entrepreneurship, reflecting the increasing recognition of the importance of effective pedagogy in entrepreneurial education. The substantial number of citations suggests that this paper has become a foundational reference in the field.
- Douglas E.J.; Shepherd D.A.; Prentice C., (2020) cited by 218 discussed on the use of fuzzy-set qualitative comparative analysis in entrepreneurship research indicates a methodological innovation. The high citation count underscores the significance of employing advanced analytical tools for a nuanced understanding of entrepreneurship, contributing to methodological diversity in the field.
- Boldureanu G.; Ionescu A.M.; Bercu A.-M, (2020) cited by 166 published on the article highlights the practical aspect of entrepreneurship education by examining successful entrepreneurial models in higher education. The substantial number of citations suggests a keen interest in integrating real-world examples into educational frameworks, enhancing the practical relevance of entrepreneurial education.
- Iwu C.G., et al., (2021) cited by 80 focused on the factors influencing student entrepreneurial intention, this article addresses the critical components of entrepreneurship education. The citation count indicates its relevance in understanding the role of curriculum design and lecturer competencies in shaping students' entrepreneurial aspirations.
- Núñez-Canal M., et al., (2022) cited by 77 discussed in publication delves into the digital competence of educators, especially pertinent in the context of the COVID-19 pandemic. The number of citations reflects the contemporary relevance of addressing challenges in higher education, including the adaptation to digital platforms.
- Bauman A.; Lucy C., (2021) cited by 60 focused on developing competencies for entrepreneurial success, this article contributes to the ongoing discourse on how educational programs can better equip students for the challenges of entrepreneurship. The citation count suggests its impact on discussions surrounding competency-based approaches to entrepreneurial education.
- Lackéus M., (2020) cited by 58 published on the impact of experiential learning in entrepreneurship education, this article contributes valuable insights into effective pedagogical approaches. The citation count indicates the scholarly interest in understanding and optimizing experiential learning methods in the context of entrepreneurship education.
- Wu Y.J.; Yuan C.-H.; Pan C.-I., (2018) cited by 57 addressing the experimental study explores the integration of information and communication technology in entrepreneurship education. The citation count suggests a continued interest in innovative teaching methods and the use of technology to enhance entrepreneurial education.
- Bell R.; Bell H., (2020) cited by 54 focused on applying educational theory to develop frameworks for experiential entrepreneurship education, this article aligns with the broader trend in incorporating educational theory into entrepreneurial pedagogy. The citation count suggests its influence on the development of practical frameworks for educators.
- Kakouris A.; Liargovas P., (2021) cited by 45 published on critical analysis contributes to the discourse on the About/For/Through framework of entrepreneurship education.

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The citation count indicates its impact on discussions surrounding the conceptual frameworks guiding entrepreneurship education practices.

In summary, the citation analysis reveals the prominence of certain themes and methodologies within the competencies of entrepreneurial educators. These highly cited articles serve as foundational references, shaping the discourse on effective teaching, curriculum design, and experiential learning in the field of entrepreneurial education. The diversity of topics covered, ranging from methodological innovations to practical applications, reflects the multidimensional nature of research in this area.

RQ3 What are the popular keywords related to the study?

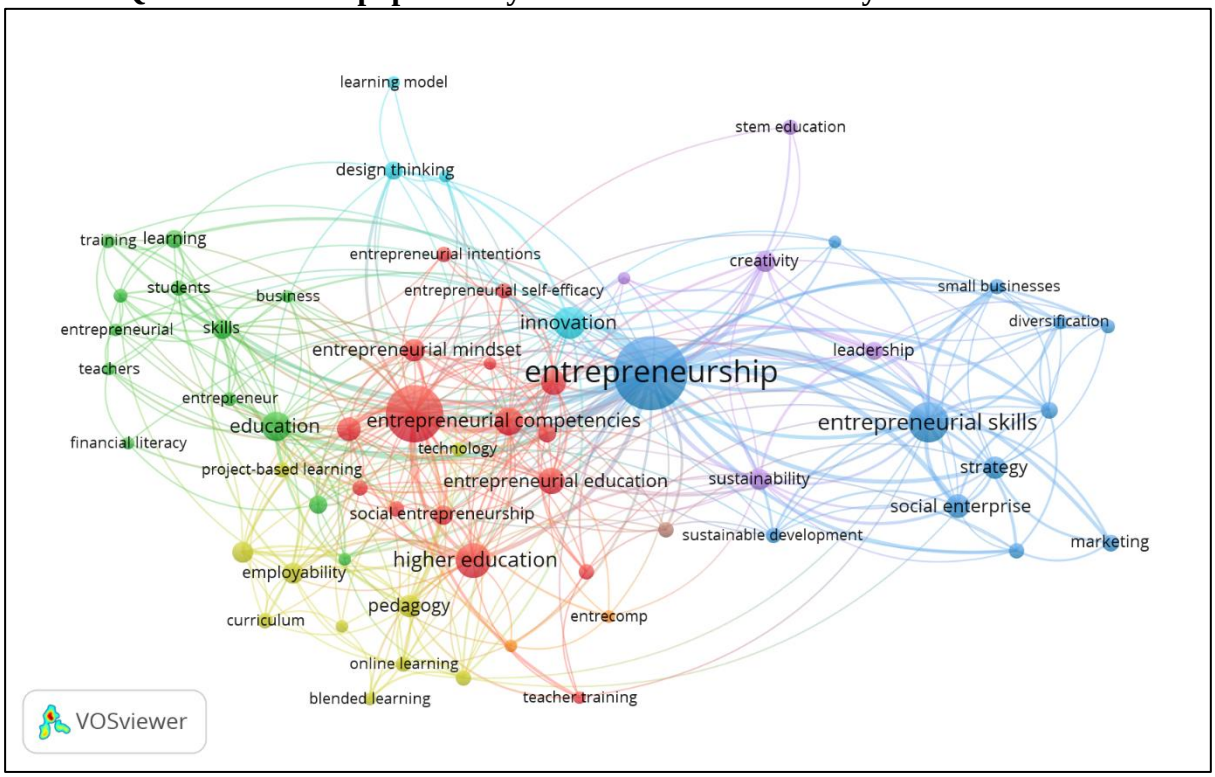

Figure 4: Network Visualization Map of Keywords' Co-Occurrence

Using VOSviewer, based on five minimum numbers of occurrences, the author keywords were mapped (see Figure 4). The figure reveals several distinct clusters, suggesting key knowledge domains within the research on entrepreneurial educator competencies. Entrepreneurship Education Core (red cluster): This central cluster, containing terms like "entrepreneurship education," "entrepreneurial skills," and "entrepreneurial mindset," represents the core theme of your research. It highlights the focus on developing these competencies in future entrepreneurs through effective educational practices. Pedagogical Approaches (green cluster): This cluster, encompassing terms like "project-based learning," "blended learning," and "online learning," emphasizes the diverse teaching methods used by entrepreneurial educators.

Student Outcomes (blue cluster): Terms like "entrepreneurial intentions," "employability," and "creativity" in this cluster point to the desired outcomes of entrepreneurial education. It highlights the focus on not only imparting knowledge but also nurturing entrepreneurial mindsets and behaviors in students. Contextual Factors (purple cluster): This cluster, containing

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terms like "higher education," "sustainability," and "social entrepreneurship," emphasizes the broader context in which entrepreneurial education takes place. It acknowledges the influence of social, economic, and environmental factors on both educators and students.

"Entrepreneurship education" bridges the gap between the core and pedagogical approaches cluster, suggesting that research explores how specific teaching methods are implemented within entrepreneurial education programs. "Entrepreneurial skills" connect the core and student outcomes clusters, highlighting the focus on developing these skills as a means to achieve desired entrepreneurial outcomes. "Creativity" bridges the core and contextual factors clusters, suggesting research on fostering creative thinking in students as a key aspect of entrepreneurial education in a constantly evolving world.

RQ4 What are co-authorship countries' collaboration?

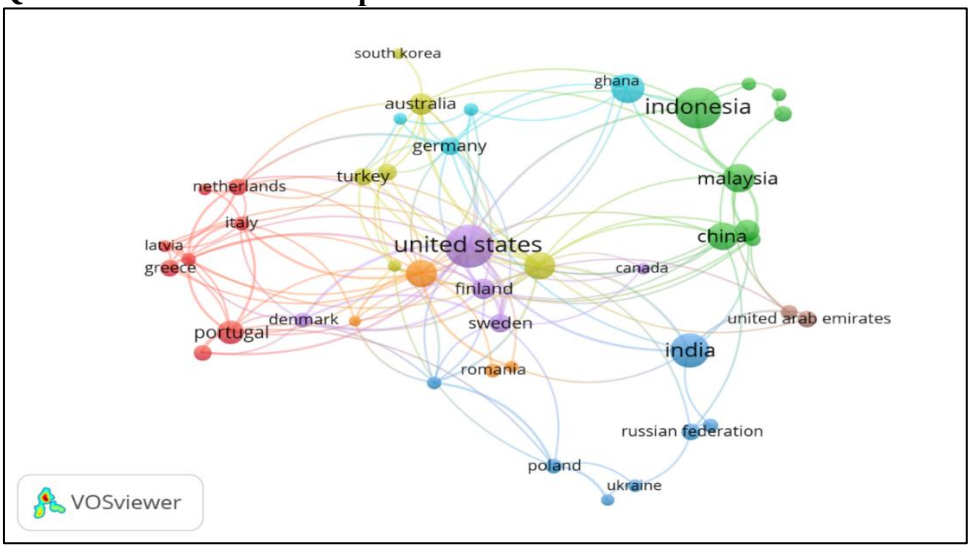

Figure 5: Network Visualization Map of Co-Authorship Countries' Collaboration

Figure 5 shows the countries whose authors collaborate on competencies of entrepreneurial educators. United States (red cluster): The US emerges as a central player, collaborating with many other countries. This could be due to the well-established entrepreneurial education infrastructure and research base in the US. Interestingly, it forms strong connections with European countries like the United Kingdom, Germany, and Spain, suggesting active transatlantic collaboration. Southeast Asia (green cluster): A cluster consisting of Malaysia, Indonesia, and Singapore appears, highlighting regional collaboration within Southeast Asia. This points to growing interest in entrepreneurial education in the region and the potential for knowledge sharing among neighbouring countries. Other notable collaborations: We see individual nodes like China, Australia, and Canada connected to various countries, indicating their active participation in international research partnerships.

Countries like the UK and Germany act as bridges, connecting the US with other European and Asian countries. This suggests they play a crucial role in facilitating knowledge exchange and collaboration across regions. The absence of certain regions like Latin America or Africa is noticeable. This could be due to data limitations or a reflection of the current state of research collaboration in those regions. Investigating potential research gaps in these areas could be fruitful.

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RQ5 What are co-citation by cited authors' collaboration?

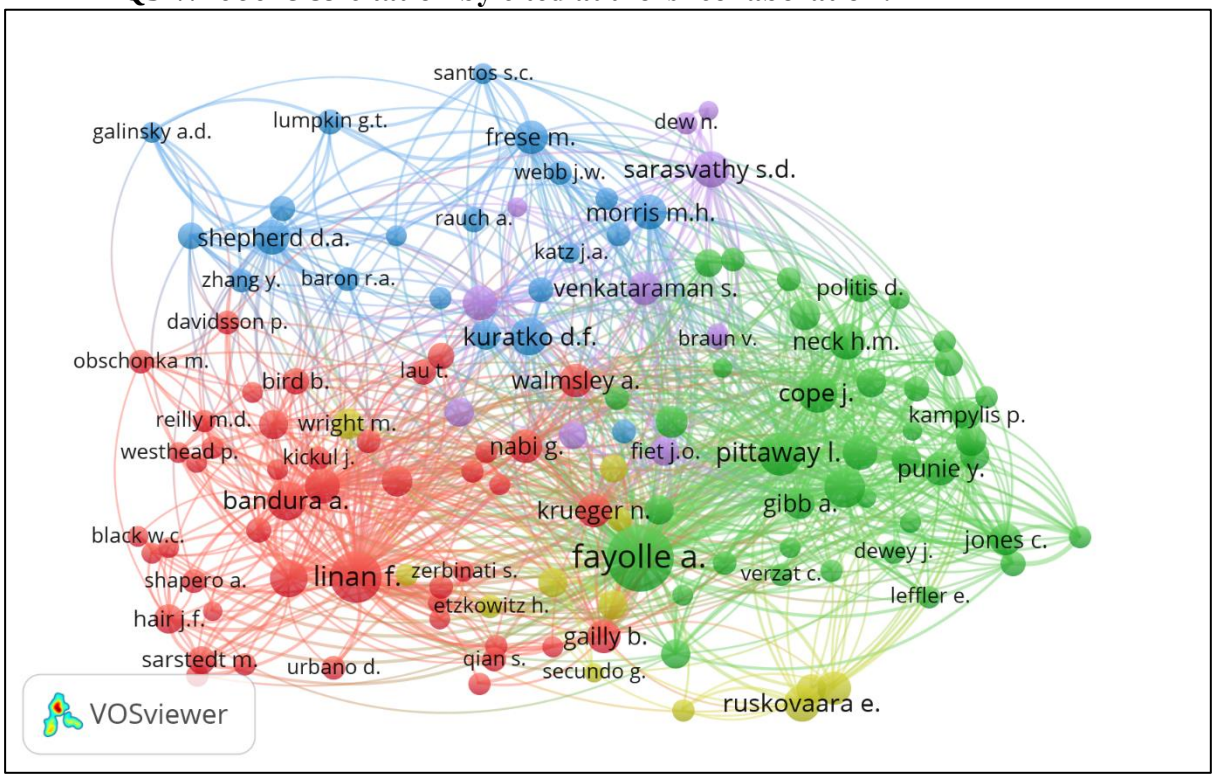

Figure 6: Network Visualization Map of Co-Citation by Cited Authors' Collaboration

The map reveals distinct clusters, each representing a thematic area within the field. One central cluster, likely focusing on the core concepts of entrepreneurial education, features authors like Davidsson, Kuratko, and Neck. These scholars seem to be foundational figures whose work has significantly shaped the field's theoretical and conceptual frameworks. Other clusters highlight specific research areas within entrepreneurial education. For example, a cluster containing authors like Santos, Lumpkin, and Frese might point to research on entrepreneurial learning and pedagogy, while another with Sarasvathy, Shepherd, and Katz could represent studies on entrepreneurial cognition and mindset.

Authors like Shane and Fayolle appear in multiple clusters, acting as bridges between different thematic areas. This suggests their work integrates concepts from various domains, enriching the field's overall knowledge base. The presence of newer authors alongside established figures indicates a dynamic field with ongoing theoretical development and new research directions emerging. Identifying and analyzing the contributions of these rising scholars can offer valuable insights into the future trajectory of the field.

Conclusion

The study analyses the development of research publications on competencies of entrepreneurial educators. Bibliometric analysis is used to assess several papers that are correlated with competencies of entrepreneurial educators. The results provide an analysis of the trend of publications by year under the Scopus category, including the top author and subject area of publication. In addition, the findings reveal articles that possess the highest citations, as well as the countries that possess the highest volume of relevant research publications. This study also investigates the commonly used keywords by authors who have researched this topic. This analysis is valuable for authors interested in entrepreneurial educators, as it provides

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guidance on recommended articles to consult and highlights the most prolific researchers in the field. This study offers several significant contributions to this topic.

According to the findings, competencies of entrepreneurial educators emerges as the dominant topic in this subject area, with potential areas for exploration including entrepreneurship education, entrepreneurial mindset and entrepreneurial skills. Moreover, by mapping the citation and co-authorship network, this study successfully identifies the most significant studies on the competencies of entrepreneurial educators and the authors with the highest number of publications. Besides, through co-occurrence and co-citation analysis in this study, the academic network of this field is delineated, potentially unveiling new research areas. Thus, this study augments prior literature on entrepreneurship education by employing bibliometric analysis, thus furnishing valuable insights into past trends in the literature. To summarise, this study contributes to the existing body of knowledge by providing valuable insights into the evolving research landscape of entrepreneurship education.

As Sustainable Development Goal 8 aims to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all, entrepreneurship education become crucial in today's landscape. Future studies can delve deeper into the issues identified in this analysis, and explore the effectiveness of the proposed entrepreneurship education approaches. By providing insight into the global research landscape, this study should provide valuable insights for Malaysia as it grapples with the complex issues surrounding entrepreneurs. By understanding the global research landscape on entrepreneurship education, this study serves as a springboard for further research where additional research is needed to explore implementation strategies and potential challenges other countries face. It can also help policymakers capitalize on the successes of entrepreneurship education internationally. By utilizing the insights gained, the study can contribute to the advancement of knowledge and help to understand the need of entrepreneurial skills among graduates in the 21st century.

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