



40° CONVEGNO NAZIONALE

# AIDEA 2023

5-6 OTTOBRE - SALERNO

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**Abstract conference proceeding**

# XL CONVEGNO NAZIONALE **L'AZIENDALISMO CREA VALORE!**

**IL RUOLO DELL' ACCADEMIA NELLE SFIDE  
DELLA SOCIETÀ, DELL'ECONOMIA  
E DELLE ISTITUZIONI.**

Dipartimento di Scienze Aziendali  
Management & Innovation Systems  
Università degli Studi di Salerno

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## **Lettera del presidente**

Ogni comunità scientifica, con le proprie specificità, crea valore per la società. Nondimeno, noi aziendalisti esaltiamo tale contributo per il ruolo svolto nel processo formativo delle nuove generazioni e nella crescita e nello sviluppo dell'impresa.

Infatti, i nostri insegnamenti coinvolgono oltre il 10% degli studenti universitari italiani, a riprova dell'interesse delle nostre discipline e della nostra capacità di coinvolgimento.

Il rapporto osmotico con le imprese, contemporaneamente, ci induce a innovare continuamente i nostri contenuti didattici e a rafforzare la cultura d'impresa.

La varietà di contributi presentati in questo convegno evidenzia l'ampiezza dei nostri confini scientifici e la prevalente interdisciplinarità conferma il superamento di antichi steccati, senza tuttavia stravolgere l'autonomia dei singoli settori scientifici.

## **Presentazione del convegno**

La comunità scientifica avverte sempre più la necessità di un dialogo e di una visione interdipendente, trasversale e circolare tra i saperi economico-aziendali che, pur nelle loro specificità, ricevono afflato dall'unitaria e ancora attuale matrice da cui gli studiosi italiani traggono comune origine.

Per tali ragioni AIDEA, ancor più rispetto ai precedenti convegni che risalgono al periodo antecedente la pandemia da Covid-19 (l'edizione precedente, l'ultima in presenza, si è svolta a Torino nel 2019), ritiene possa essere estremamente importante accrescere la dialettica e la condivisione di percorsi di sviluppo dei saperi presenti nelle diverse anime dell'aziendalismo in relazione ai suoi principali stakeholder di riferimento.

AIDEA, con il suo convegno, vuole proiettarsi nel futuro con raccomandazioni che si augurano utili per tutti coloro che, a vario titolo, studiano e si interfacciano con le discipline aziendali.

In questo modo, si vuole contribuire a sostenere la percezione delle nostre discipline e della conoscenza che gli studiosi sono in grado di generare, incoraggiando l'evoluzione e l'innovazione nelle ricerche e al tempo stesso interrogandosi criticamente sul nostro ruolo di accademici nella società civile.

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# Exploring Students' Entrepreneurial Intention and Entrepreneurship Education efforts through the lens of GUESSS project

Nicola Cucari<sup>1</sup>, Francesco Laviola<sup>2</sup>, Pietro Vito<sup>3</sup>, Davide Hahn<sup>4</sup>

## 1. Introduction

Entrepreneurial Education (EE) as a scientific field has grown significantly over the past two decades (Landstrom et al., 2022; Potter, 2008) and has become essential in the first stages of the entrepreneurial process, such as the generation of entrepreneurial intention (EI) (Lopez et al., 2021). EI is defined as the “*conscious state of mind that precedes action and directs attention toward a goal such as starting a new business*” (Moriano et al., 2012, p. 5).

After all, why, when, and how some individuals become entrepreneurs have always been questions at the center of attention of academic researchers and policymakers (Sarasvathy, 2004). Indeed, growing attention and interest in several public and private initiatives for promoting entrepreneurial activity are registered all over the world. For example, since 1998, UNESCO (1998) invites higher education to incentivize actions to develop entrepreneurial skills. The European Commission (2006) urged young Europeans to become the entrepreneurs of the future and some recent initiatives (like the Action Plan 2020, European Action Plan “Building an economy that works for people: an action plan for the social economy” (2021-2030)) have specific objectives to create a truly “entrepreneurial spirit in Europe”. Specifically, the Commission calls on higher education institutions (HEIs) to stimulate social economy and entrepreneurship. HEIs are known to generate both academic entrepreneurship and student entrepreneurship, and both typologies have the greatest impact on national economies and innovation systems (Åstebro et al., 2012; Wright et al., 2017). As noted by Lopez and Alvarez (2019), understanding which variables encourage entrepreneurship among university students is complex for different reasons: the first one is the lack of knowledge about the determinants of university entrepreneurship (Bergmann et al., 2016; Pittaway & Cope, 2007); the second one is the lack of empirical evidence and datasets. However, from this point of view, one of the most important datasets about EI, the “Global University Entrepreneurial Spirit Students’ Survey - GUESSS”, can possibly help solve this issue. GUESSS is a large global research project about student entrepreneurship that investigates and compares entrepreneurial attitudes and activities of students in 54 countries in the world. According to Sieger et al. (2014), the GUESSS project pursues three main goals: i) to explore the entrepreneurial intentions and activity of students in different countries within a long

<sup>1</sup> Assistant Professor of Business Management, SECS-P/08 – Management, Sapienza University of Rome; [nicola.cucari@uniroma1.it](mailto:nicola.cucari@uniroma1.it)

<sup>2</sup> Ph.D. Candidate in Business Management, SECS-P/08 – Management, Sapienza University of Rome; [francesco.laviola@uniroma1.it](mailto:francesco.laviola@uniroma1.it) – corresponding author

<sup>3</sup> Research Fellow of Business Management, SECS-P/08 – Management, Sapienza University of Rome; [pietro.vito@uniroma1.it](mailto:pietro.vito@uniroma1.it)

<sup>4</sup> Assistant Professor of Business and Management Engineering, ING-IND/35 - Business and Management Engineering, Department of Management, Information and Production Engineering and Center for Young and Family Enterprise, University of Bergamo; [davide.hahn@unibg.it](mailto:davide.hahn@unibg.it)

period of time; ii) to provide universities with data on how students evaluate entrepreneurship programs (courses, overall infrastructure, etc.); iii) to suggest new ideas for investigation of individual student characteristics and their influence on entrepreneurial intentions and activity.

The growing interest of scholars all around the world in the dynamics of EI and in collaborating with the GUESSS project, has, in the last few years, led to a surprising number of scientific contributions when collected under the flag of the GUESSS dataset.

Student entrepreneurship, defined as venture creation activities of people who are currently studying at a university (Bergmann et al., 2016), is an emerging phenomenon (Mars et al., 2008) and remains “an under-investigated phenomenon that requires more in-depth analysis” (Sedita & Blasi 2021, p. 101). Different authors advocate for the growing relevance of student entrepreneurship and highlight the important role in the knowledge transfer from university to markets (Bergman et al., 2016; Bogatyreva et al., 2019; Hahn et al., 2020). Student entrepreneurship literature is associated with a growing field of research on EE (Gabay-Mariani & Boissin, 2021) and it is an important direction of entrepreneurship research since at this stage of life entrepreneurial conscience and attitude towards entrepreneurial career are formed (Shirokova et al., 2016).

In spite of this growing interest in entrepreneurship education and student entrepreneurship, there is a lack of proper systematization. As such, a preliminary and explorative review of this new and growing scientific landscape appears to be timely and necessary.

Therefore, the present study answers this research question: What are the current main thematic areas in scientific research about EI analyzed through the lens of the GUESSS dataset?

To the best of our knowledge, this study is the first literature review to offer an overview of main streams of research and the most influential papers that discuss student entrepreneurship using the GUESSS dataset. The present work is moreover aligned with the research of other datasets on entrepreneurship, such as Global Entrepreneurship Monitor (GEM) (Álvarez et al., 2014) and, considering the increasing scientific research employing the GUESSS dataset, the main objective of this article is to explore the content and evolution of research efforts based on the GUESSS project, in order to offer a preliminary overview of the scientific landscape of the field, identifying the main research streams, the gaps in the literature and future research directions. In addition, structuring the future iterations of this literature review in a systematic manner will pave the way for future works, also helping to clarify which issues are not well covered. We intend therefore to identify knowledge gaps and opportunities for contributions in order to guide future research.

## 2. Methodology

Bibliometrics was introduced by Pritchard in 1969 as a method that applies statistical tools to analyze bibliographic data (Pritchard, 1969). It tends to be more objective and extensive in scope than other types of reviews (Fan et al., 2022) and enables scholars to identify and provide an overview of the principal trends that have been published by journals in a specific period (see for example Baker et al., 2021) or in a specific topic (see for example Cumming et al., 2023). Therefore, this methodology is widespread in the field of entrepreneurship (Ferreira et al., 2015; Lampe et al., 2020) and it has been used to analyze the body of scientific works based on entrepreneurship datasets, such as the Global Entrepreneurship Monitor (GEM) (Álvarez et al., 2014). For these reasons, the bibliometric method is suitable for our research goal. Following the guidelines in applying bibliometric methods (Mukherjee et al., 2022) and other bibliometrics research (Forlano et al., 2021), we follow a two-step review approach for our bibliometric analysis: we first employ science mapping analysis, followed by thematic content analysis.

### 2.1 Bibliographic data collection and extraction

As for the choice of the bibliographic database from which to extract the necessary data for the purposes of our analysis, we chose to use the articles registered in Scopus. For the construction

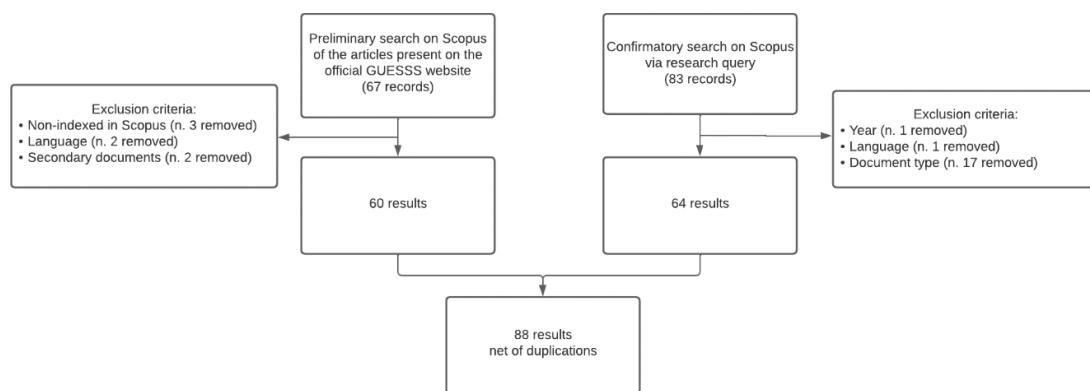
of our bibliographic sample, to ensure the comprehensiveness of our research strategy, we followed a step-by-step procedure, starting with the publications found on the official GUESSS website. On the day of the analysis (December 6th, 2022) the survey's website included 67 references, of which only 64 recorded in Scopus and as such exportable in a compatible bibliographic format, and only 62 indexed including the necessary meta-data of each contribution. We also decided to exclude papers written in languages other than English to maintain a consistent review process as such excluding 2 more works, rounding up the total of articles obtained from the survey's website to 60. We have then carried out, in the second step, a confirmatory search directly in Scopus, via the search query in Tab. 1.

Search Terms in Scopus		
Field Tag	Title, Abstract, and Keywords	TITLE-ABS-KEY("guesss" OR "Global Universit* Entrepr* Spirit* Student* Survey")
Boolean		AND
Document Type	Article	LIMIT-TO (DOCTYPE,"ar" )
Boolean		AND
Publication Year		PUBYEAR > 1999
Boolean		AND
Language		LANGUAGE(ENGLISH)

Table 1. Search query in Scopus, source: authors' elaboration

Dealing with the publications' selection criteria, given the high level of specificity of our research objective, we decided to restrict the Scopus search strategy to journal articles only. In this way, as in Guillén et al. (2022), it was possible to ensure that our sample included only contributions that had undergone the double-blind review process required by academic journals. With regard to the timeframe, since the Global University Entrepreneurial Spirit Students' Survey has been established in 2003, it seemed appropriate to consider only works published from the year 2000 onwards.

Fig. 1 summarized the different phases of our research strategy.



*Figure 1. The different phases of data extraction activity, source: authors' elaboration*

The sample of papers resulting from the database search and selection process was then analyzed using primarily science mapping technique (Noyons et al., 1999). To this end we relied on VOSviewer (van Eck and Waltman, 2010), a free, open-source similarity visualization software for overlaying and visualizing sets of bibliographic data (such as journal article authors, co-authors, and citation networks), in order to unveil their hidden structures and relations.

## 2.2 Science mapping

Science mapping is a powerful, graph-based technique for analyzing and presenting the relationships between different scientific topics. Through science mapping, researchers can gain valuable insights into the structure and development of scientific fields, identify key research trends and emerging areas of interest, and explore the connections between authors and different areas of research (i.e., a field's conceptual, social and intellectual structure) (Borner et al., 2003; Cobo et al., 2012). In particular, a field's social structure can be captured through a co-authorship analysis (Peters and van Raan, 1991), which enables visualizing the links between authors calculating the number of co-authored documents, quantifying the number of co-authors, and calculating the average number of co-authors of an author. As such, by examining patterns of collaboration and authorship, it allows to identify key researchers, institutions, or research groups to identify central authors and collaboration patterns, as well as support the definition of thematic clusters. To uncover a field's conceptual structure, methods such as keyword co-occurrence analysis, text mining, or topic modeling (e.g., Latent Dirichlet Allocation), can be used to identify prevalent concepts, themes, or trends in the literature by examining the content of research outputs, focusing on keywords, abstracts, or full-text documents. Finally, the intellectual structure of a field can be described, among others, through bibliographic coupling (Kessler, 1963), which involves studying the references used together in different documents to identify common topics and patterns in the literature. This type of analysis can be used to identify gaps or potential avenues in the field, understand the relationships between publications, research themes, or methodologies, and reveal clusters of related research and the evolution of research topics over time (Jarnéving, 2007).

## 3. Results

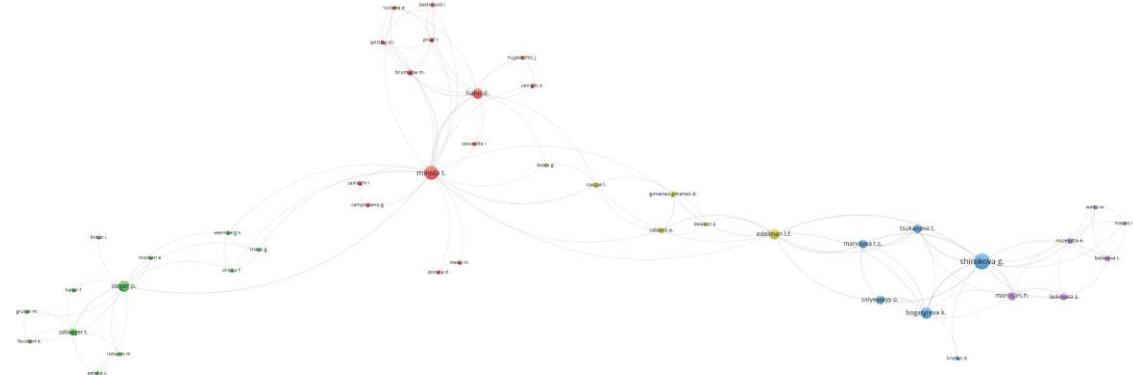
The output of the database search and selection process consisted of a sample of 88 publications by 157 authors affiliated with 126 institutions in 30 countries, published in 52 journals, and referred to 3201 cited references (Tab. 2).

<i>Publications</i>	88
<i>Authors</i>	157
<i>Journals</i>	52
<i>Institutions</i>	126
<i>Countries</i>	30
<i>Cited references</i>	3201

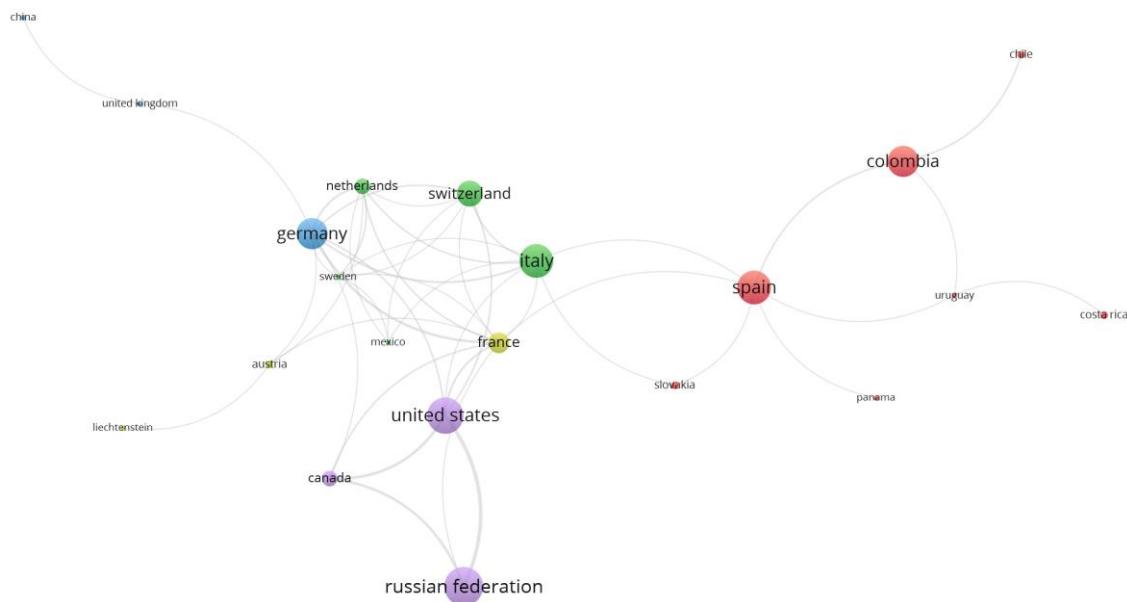
*Table 2. Descriptive statistics of resulting publications, source: authors' elaboration*

### 3.1 Social and conceptual structures

Based on the conceptualizations presented in Section 2.3, the following analyses aim to uncover, through bibliometric mapping and clustering techniques, the social and conceptual structures of the works included in our database. In particular, the social structure is manifested through the construction of co-authorship maps of the authors and countries or territories, and are presented in Figures 2 and 3.



*Figure 2. Cooperation network between authors, source: authors' elaboration with VOSviewer*



*Figure 3. Cooperation network between countries and territories, source: authors' elaboration with VOSviewer*

Figure 2 displays the network of collaboration among authors. Each node represents an author, and the lines connecting the nodes represent co-authorship relations. The size of the node indicates the number of publications by the author, and the thickness of the lines represents the frequency of collaboration between the authors. Figure 3 presents the cooperation network among countries or territories. Each node represents a country or territory, and the lines connecting the nodes indicate collaborative relations between them. The size of the node is proportional to the number of publications from that country or territory, and the thickness of the lines signifies the extent of

collaboration between the countries or territories. The two maps, analyzed together, highlight the global distribution of the research and the extent of international collaboration in the field.

Subsequently, in order to manifest the conceptual structure of the works included in our database, we used Keyword Co-occurrence Analysis in order to build a Keyword Co-occurrence Network (KCN), useful in the exploration of research topics and their relationships in many scientific fields (Bornmann et al., 2018). As demonstrated by some authors (Radhakrishnan et al., 2017), KCN-based analysis has shown advantages over traditional literature review approaches, like the objectivity and reproducibility guaranteed by an analysis relying on quantitative methods, higher efficiency due to processing large volumes of data more quickly and its ease of visual representation of the results.

The obtained bibliometric map is presented in Figure 4.

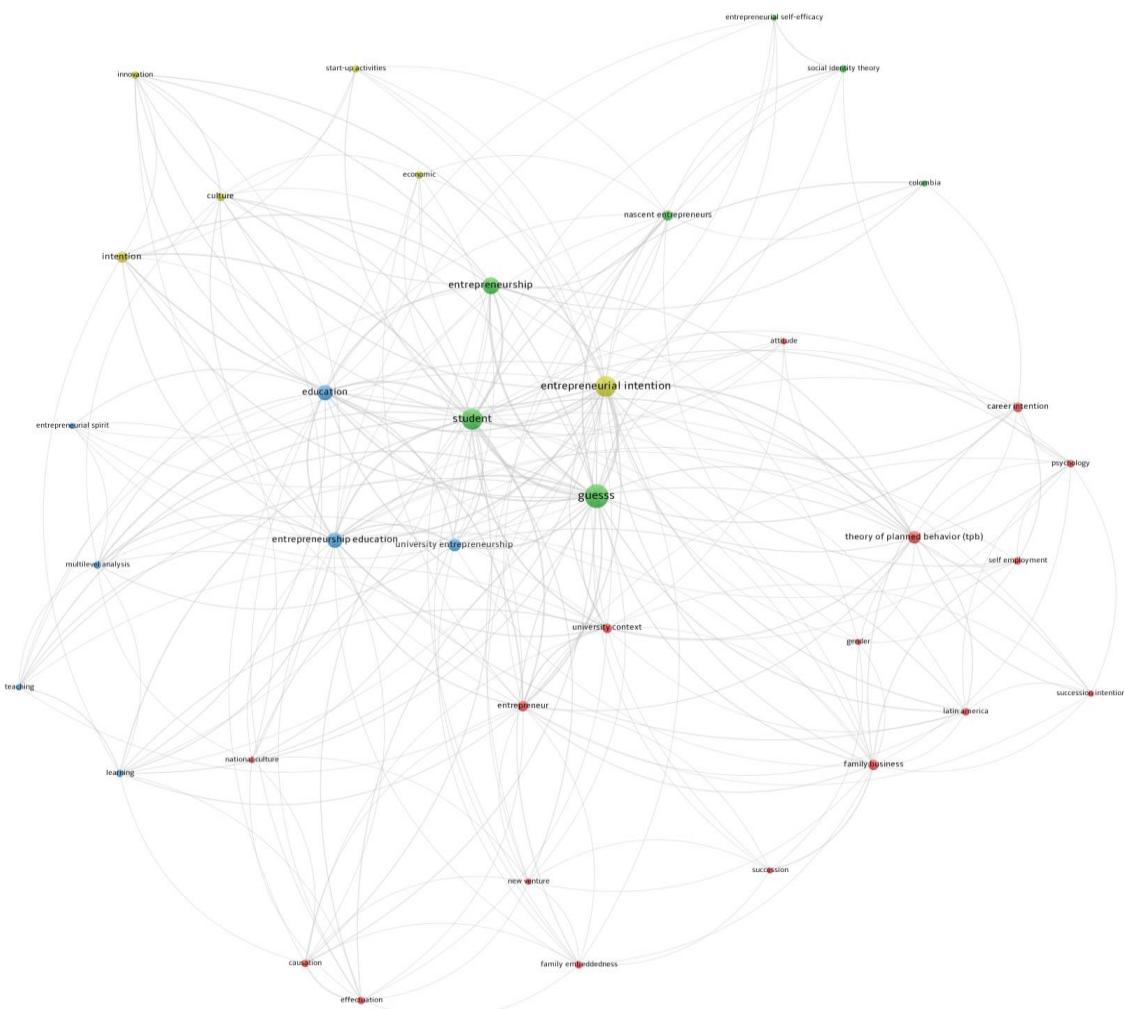


Figure 4. Keyword Co-occurrence Network, source: authors' elaboration with VOSviewer

KCN allowed us to identify different thematic clusters which – combined with manual content analysis – support scholars in unpacking the different research streams within the analyzed body of research (Yang et al. 2012). In particular, we relied on VOSviewer's clustering functions, which assign keywords to clusters based on their co-occurrence (Waltman et al., 2010; Bornmann et al., 2018). The identified clusters were: (i) higher education (red in Figure 4); (ii) personal background and entrepreneurial careers (green in Figure 4); (iii) entrepreneurial motives (blue in Figure 4); and (iv) students' embeddedness and decision-making (yellow in Figure 4).

### 3.2 Intellectual structure

Finally, to provide a preliminary overview of the intellectual structure of the field, we performed through VOSviewer a Bibliographic Coupling Analysis (Kessler, 1963).

Similarly to the previous analysis, we obtained four clusters, this time based on the similarity of publications or authors in terms of their shared references. In bibliographic coupling, in fact, a link is established between two items if they have at least one common reference. The total number of links for an item indicates how many connections it has with other items in the network (its “weight” in the network, visually represented by its size), and the distance between two items is inversely proportional to the number of common references. Having been provided with the most influential works in each cluster, an initial screening of their research topics was performed and we were able to roughly confirm the cluster classification identified in the previous analysis. As such, using as a base the verified clusterization obtained through the KCN analysis, we aim to complement our review with a preliminary content analysis of the main themes investigated by papers grouped through bibliographic coupling.

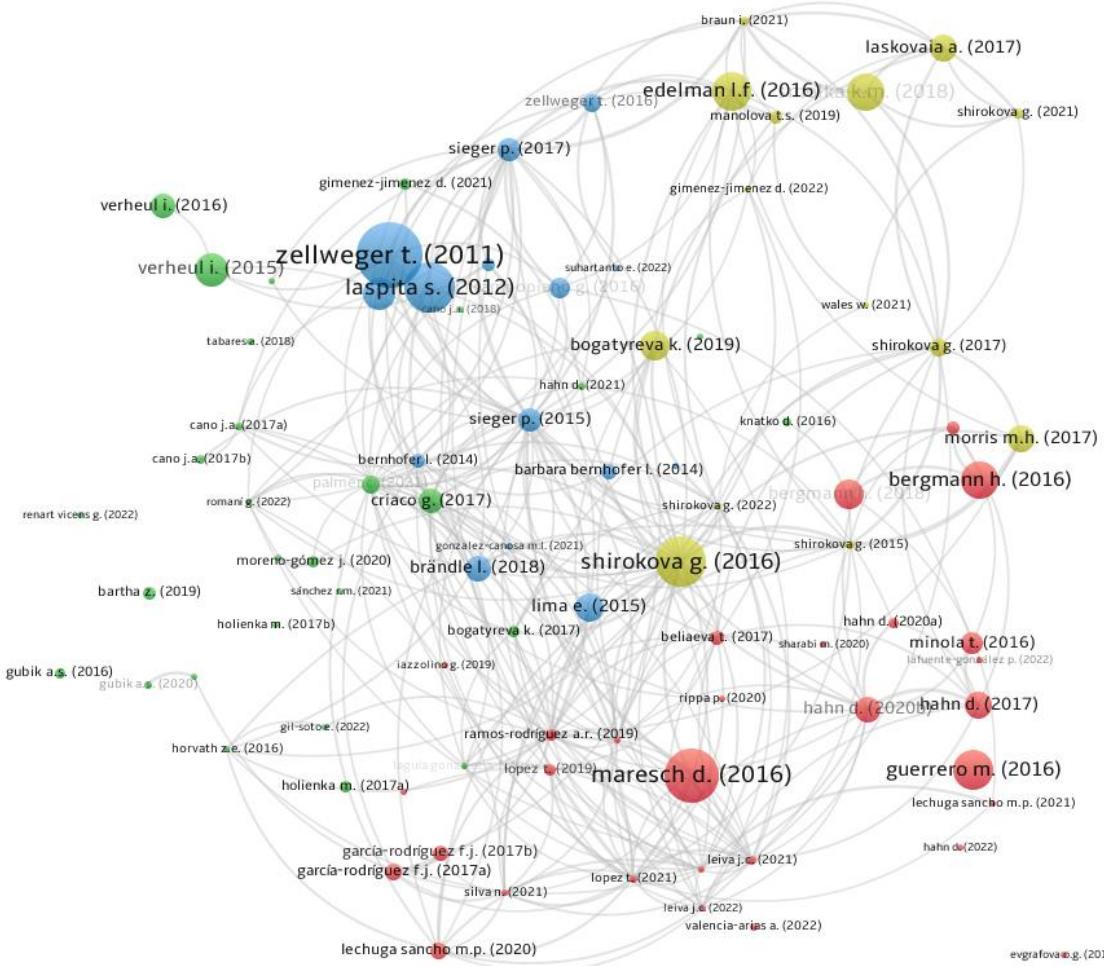


Figure 5. Bibliographic Coupling Network, source: authors' elaboration with VOSviewer

The following paragraph describes the preliminary thematic content of each cluster identified above through bibliographic coupling. The thematic content analysis allows generating an updated picture of the main scholarly conversations around student entrepreneurship based on the GUESSS dataset. We delineated four clusters: (i) higher education; (ii) personal background and

entrepreneurial careers; (iii) entrepreneurial motives; and (iv) students' embeddedness and decision-making.

#### *Cluster 1: Higher Education*

This cluster takes an entrepreneurial university perspective, and its papers are mainly focused on exploring how different elements of the Higher Education (HE) ecosystem affect student entrepreneurship and its antecedents.

#### *Cluster 2: Personal background and entrepreneurial careers.*

This cluster mainly focuses on how the personal background of university students affects their entrepreneurial career choices. In this sense, many of the studies in this cluster provide broader contributions to entrepreneurial careers and their antecedents.

#### *Cluster 3: Entrepreneurial motives*

This cluster shares with the second one great attention on how individual-level factors, such as family, affect entrepreneurial career choices. However, the papers in this cluster are concentrated mostly on shedding light on specific economic and non-economic motives that drive university students towards an entrepreneurial career.

#### *Cluster 4: Students' embeddedness and decision-making*

This cluster contains papers focusing on the decision-making of student entrepreneurs and the role played by the context in which they are embedded. In general, the papers of these clusters use student entrepreneurs as a special case of embedded entrepreneurs through which they aim for broader contributions to entrepreneurial decision-making (Sieger and Braun, 2021).

In further revisions of this preliminary research, we will deepen the content analysis of each cluster and the interactions between topics, papers, and the main strands of research in this field.

#### **4. Implications for future research**

Based on the preliminary analysis of the thematic and bibliographic clustering, we outline a future research agenda, displayed in Table 3.

Cluster	Most influential papers	Description	Limitations	Future RQs
1. Higher Education	(Bergmann et al., 2018; Hahn et al., 2017, 2020; Maresch et al., 2016; Valencia-Arias et al., 2022)	This cluster explores how different elements of Higher Education (HE) ecosystem affect student entrepreneurship and its antecedents.	Lack of fine-grained description of specific university offerings.  Lack of comparing the effectiveness of different types of entrepreneurship courses.	How do different elements of the entrepreneurial university, such as infrastructures, education offerings, research patterns, and teaching quality, affect the transition to entrepreneurship and the quality of students' ventures?  How do the three missions of universities (research, teaching, and the so-called 'third mission') affect student entrepreneurship?  Which approaches are more effective to teach entrepreneurship?
2. Personal background and entrepreneurial careers	(Criaco et al., 2017; Gimenez-Jimenez et al., 2021; Hahn et al., 2021; Palmer et al., 2021; Verheul et al., 2015)	This cluster explores how personal background of students affects the entrepreneurial career choices	Lack of personal attitudes of students.  Lack of focus only on the founder(s) of entrepreneurial activities.	How personal background affects other manifestations of student entrepreneurship beyond venture creation and succession?  How to incorporate more sophisticated approaches in personality?  How to develop emotions and passions for the students?

Cluster	Most influential papers	Description	Limitations	Future RQs
3. Entrepreneurial motives	(Barbara Bernhofer & Li, 2014; Brändle et al., 2018; Lima et al., 2015; Sieger et al., 2016; Sieger & Minola, 2017)	This cluster explores how specific economic and non-economic motives drive university students toward an entrepreneurial career.	Lack of task motivation	<p>How do economic and non-economic motives drive actual start-up activity or other manifestations of student entrepreneurship such as intrapreneurship?</p> <p>How do personal motives translate into organizational goals and overall performance?</p> <p>How do socialization and peer effects influence student entrepreneurship?</p>
4. Students' embeddedness and decision-making	(Bogatyrev et al., 2019; Laskovaia et al., 2017; Shirokova et al., 2016, 2022; Smolka et al., 2018)	<p>This cluster explores on the decision making of student entrepreneurs.</p> <p>Lack of focus on specific strategic orientations adopted among students.</p>	<p>Lack of difference between the founder's personal motives and the strategic orientation adopted by the team.</p>	<p>How do situational conditions affect team formation processes?</p> <p>How do educational interventions affect nascent entrepreneurs' learning processes, such as experimentation?</p> <p>How do situational factors affect the strategic choices of nascent entrepreneurs in terms of open innovation, exit, and growth aspirations?</p>

Table 3. Future research agenda, source: authors' elaboration

## 5. Conclusion

Taking advantage of bibliometric and content analyses, this work offers a primary systematization of the last 20 years of research on student entrepreneurship using the GUESSS dataset. Finally, we discuss some of the opportunities and challenges that can be leveraged and embraced by future research efforts in those topics.

First, the entrepreneurship education courses should train students in an experiential way, guiding students that are already interested in entrepreneurship, nurturing their personal attitudes. In this vein, social learning experiences should be promoted to give students the opportunity to learn from themselves and other people's experiences. Second, during the last 20 years the GUESSS

survey was updated several times to respond to the changed contextual conditions (most recently the pandemic period). Even if our review aims to honor the GUESSS project as one of the most comprehensive surveys on student entrepreneurship, at the same time, we corroborate the need to be implemented and updated frequently. As noted, EI depends on external and internal factors and not everyone develops the same intentions in the face of the same external or internal circumstances. We believe that among external factors future research needs to analyze experiential learning methodologies that allow students to apply knowledge and skills in a real context. As suggested in Cascavilla et al. (2022), we believe that could be useful for universities to approach Entrepreneurship Education with a “Competence Teaching Model”, encouraging students to acquire practical knowledge by consulting external experts and dealing with real-world problems, enhancing entrepreneurial abilities through learning-by-doing and experiential learning (Fiore et al., 2019). Third, among the external factors, it could be useful to explore technology-supported Entrepreneurship Education initiatives, like those based on Artificial Intelligence (AI) and Augmented/Virtual Reality (AR/VR). Indeed, the establishment of an instructor-AI collaboration has the potential to improve “curriculums, pedagogical practices, learner motivation, and engagement, which are critical to achieving learning outcomes” (Ala et al., 2022, p. 161). Still to be explored, for example, are the opportunities offered by AI tutors, who are capable of supporting students with personalized instruction/resources, provide timely responses to questions and feedback, and technical assistance. AI coaching is already showing potential in private sector industry, with AI-based chatbots supporting the training of managers and employees and stimulating their reflexivity by improving their soft skills (Cucari et al., 2022). It might be interesting to explore the feasibility of adapting this kind of AI-augmented support to the needs of higher education students and future entrepreneurs. The clever combination of AR and VR then, applied to Entrepreneurship Education programs with the implementation of AI-based simulations, aims to re-propose in an immersive environment the same paradigms of challenge-based entrepreneurship programs, stimulating learners' engagement in experiential learning and increasing learners' skills through the learning-by-doing approach.

**Parole chiave/Keywords:** Bibliometric analysis; Entrepreneurship Education; GUESSS; Student Entrepreneurship; University.

## References

- Ala, M, Robin, M, Rasul, T, Wegner, D, 2022. Understanding the possibilities and conditions for instructor-AI collaboration in entrepreneurship education, in: Hyams-Ssekasi, D, Yasin, N. (Ed), *Technology in entrepreneurship education: Adopting creative digital approaches to learning and teaching*, Technology and Entrepreneurship Education, Palgrave Macmillan Ltd., 159–185.
- Álvarez, C., Urbano, D, Amorós, J, E, 2014. GEM research: achievements and challenges. *Small Bus Econ.* 42, 445–465.
- Åstebro, T, Bazzazian, N, Braguinsky, S, 2012. Startups by recent university graduates and their faculty: Implications for university entrepreneurship policy. *Res Policy.* 41, 663–677.
- Baker, H, K, Kumar, S, Pandey, N, 2021. Thirty years of Small Business Economics: a bibliometric overview. *Small Bus Econ.* 56(1), 487–517.
- Baker, H, K, Pandey, N, Kumar, S, Haldar, A, 2020. A bibliometric analysis of board diversity: Current status, development, and future research directions. *J Bus Res.* 108, 232–246.
- Barbara Bernhofer, L, Li, J, 2014. Understanding the entrepreneurial intention of Chinese students: The preliminary findings of the China Project of “Global University Entrepreneurial Spirits Students Survey” (GUESSS). *J Entrepreneurship Emerging Econ.* 6, 21–37.

- Bergmann, H, Geissler, M, Hundt, C, Grave, B, 2018. The climate for entrepreneurship at higher education institutions, *Res Policy*. 47, 700–716.
- Bergmann, H, Hundt, C, Sternberg, R, 2016. What makes student entrepreneurs? On the relevance (and irrelevance) of the university and the regional context for student start-ups. *Small Bus Econ*, 47, 53–76.
- Bogatyreva, K, Edelman, L, F, Manolova, T, S, Osiyevskyy, O, Shirokova, G, 2019. When do entrepreneurial intentions lead to actions? The role of national culture. *J Bus Res*.96, 309–321.
- Börner, K, Chen, C, Boyack, K, W, 2003. Visualizing knowledge domains, *Annu Rev Inf Sci Technol*. 37, 179–255.
- Bornmann, L, Haunschild, R, Hug, S, E, 2018. Visualizing the context of citations referencing papers published by Eugene Garfield: a new type of keyword co-occurrence analysis, *Scientometrics*. 114, 427–437.
- Brändle, L, Berger, E, S, C, Golla, S, Kuckertz, A, 2018. I am what I am - How nascent entrepreneurs' social identity affects their entrepreneurial self-efficacy. *Journal of Business Venturing Insights*, 9, 17–23.
- Cascavilla, I, Hahn, D, Minola, T, 2022. How You Teach Matters! An Exploratory Study on the Relationship between Teaching Models and Learning Outcomes in Entrepreneurship Education. *Adm Sci*. 12, 12
- Cobo, M. J, López-Herrera, A, G, Herrera-Viedma, E; Herrera, F; 2011. An approach for detecting, quantifying, and visualizing the evolution of a research field: A practical application to the Fuzzy Sets Theory field. *Journal of Informetrics*, 5, 146–166.
- Criaco, G, Sieger, P, Wennberg, K, Chirico, F, Minola, T, 2017. Parents' performance in entrepreneurship as a “double-edged sword” for the intergenerational transmission of entrepreneurship. *Small Bus Econ*, 49, 841–864.
- Cucari, N, Laviola, F, Novic, H, 2022. Artificial Intelligence and Human Resource Development: a Literature Review and Research Agenda. Boosting knowledge & trust for a sustainable business, 139–150.
- Cumming, D, Kumar, S, Lim, W, M, Pandey, N, 2023. Mapping the venture capital and private equity research: a bibliometric review and future research agenda. *Small Bus Econ*, 61, 173–221.
- Donthu, N, Kumar, S, Mukherjee, D, Pandey, N, Lim, W, M, 2021. How to conduct a bibliometric analysis: An overview and guidelines. *J Bus Res*. 133, 285–296.
- EC - European Commission 2006. The Oslo Agenda for Entrepreneurship Education in Europe', in *Entrepreneurship Education in Europe: Fostering Entrepreneurial Mindsets through Education and Learning Conference*, Oslo, Norway.
- EC - European Commission 2008. Entrepreneurship in Higher Education, Especially within non Business Studies: Final Report of the Expert Group', Brussels, Belgium
- Fan, D, Breslin, D, Callahan, J, L, Iszatt-White, M, 2022. Advancing literature review methodology through rigour, generativity, scope and transparency, *Int J Management Reviews*, 24(2), 171–180.
- Fellnhofer, K, 2017. The power of passion in entrepreneurship education: Entrepreneurial role models encourage passion? *J Entrep Educ*. 20, 58.
- Ferreira, J, J, Raposo, M, L, Gouveia Rodrigues, R, Dinis, A, Do Paço, A, 2012. A model of entrepreneurial intention: An application of the psychological and behavioral approaches. *J Small Bus Enterp Dev*. 19, 424–440.
- Fiore, E, Sansone, G, Paolucci, E, 2019. Entrepreneurship Education in a Multidisciplinary Environment: Evidence from an Entrepreneurship Programme Held in Turin. *Adm Sci*. 9, 28.

- Forlano, C, De Bernardi, P, Yahiaoui, D, 2021. Entrepreneurial universities: A bibliometric analysis within the business and management domains. *Technol Forecast Soc Change.* 165, 120522.
- Gabay-Mariani, L, Boissin, J.-P. 2021. Commitment profiles of nascent entrepreneurs: insights from an empirical taxonomy among French student entrepreneurs, *Int J Entrepreneurial Behav Res.* 27, 1214–1240.
- Gimenez-Jimenez, D, Edelman, L, F, Dawson, A, Calabrò, A, 2022. Women entrepreneurs' progress in the venturing process: the impact of risk aversion and culture, *Small Bus Econ.* 58, 1091–1111.
- Gimenez-Jimenez, D, Edelman, L, F, Minola, T, Calabrò, A, Cassia, L, 2021. An Intergeneration Solidarity Perspective on Succession Intentions in Family Firms, *Entrep Theory Pract.* 45, 740–766.
- Guillén, L, Sergio, A, Manuel, C. 2022. Research on social responsibility of small and medium enterprises: a bibliometric analysis. *Manag Rev Q,* 72, 857–909
- Hahn, D, Minola, T, Bosio, G, Cassia, L. 2020. The impact of entrepreneurship education on university students' entrepreneurial skills: a family embeddedness perspective. *Small Bus Econ.* 55, 257–282.
- Hahn, D, Minola, T, Van Gils, A, Huybrechts, J, 2017. Entrepreneurial education and learning at universities: exploring multilevel contingencies. *Entrepreneurship Reg Dev.* 29, 945–974.
- Hahn, D, Spitzley, D, I, Brumana, M, Ruzzene, A, Bechthold, L, Prügl, R, Minola, T, 2021. Founding or succeeding? Exploring how family embeddedness shapes the entrepreneurial intentions of the next generation. *Technol Forecast Soc Change.* 173.
- Jarneving, B, 2007. Bibliographic coupling and its application to research-front and other core documents. *J Informetrics.* 1, 287–307.
- Kessler, M, M, 1963. Bibliographic coupling between scientific papers, *American Documentation*, Wiley Blackwell, 14, 10–25.
- Lampe, J, Kraft, P, S, Bausch, A, 2020. Mapping the Field of Research on Entrepreneurial Organizations (1937–2016): A Bibliometric Analysis and Research Agenda. *Entrep Theory Pract.* 44, 784–816.
- Landström, H, Gabrielsson, J, Politis, D, Sørheim, R, Djupdal, K, 2022. The Social Structure of Entrepreneurial Education as a Scientific Field. *Acad Manag.* 21, 61–81.
- Laskovaia, A, Shirokova, G, Morris, M, H, 2017. National culture, effectuation, and new venture performance: global evidence from student entrepreneurs. *Small Bus Econ.* 49, 687–709.
- Lima, E, Lopes, R, M, Nassif, V, da Silva, D, 2015. Opportunities to Improve Entrepreneurship Education: Contributions Considering Brazilian Challenges. *J Small Bus Manag.* 53, 1033–1051.
- Lopez, T, Alvarez, C, 2019. Influence of university-related factors on students' entrepreneurial intentions. *Int J Entrepreneurial Venturing.* 11, 521–540.
- Lopez, T, Alvarez, C, Martins, I, Perez, JP, Románn-Calderón JP. 2021. Students' perception of learning from entrepreneurship education programs and entrepreneurial intention in Latin America. *Academia Rev Lat Am Adm.* 34, 419-444.
- Maresch, D, Harms, R, Kailer, N, Wimmer-Wurm, B, 2016. The impact of entrepreneurship education on the entrepreneurial intention of students in science and engineering versus business studies university programs. *Technol Forecast Soc Change.* 104, 172–179.
- Mars, M, M, Slaughter, S, Rhoades, G, 2008. The state-sponsored student entrepreneur. *J Higher Educ.* 79, 638–670.
- Moreno-Gómez, J, Gómez-Araujo, E, Ferrer-Ortíz, D, Peña-Ruiz, R, 2022. Gender perspective of parental role model influence on nascent entrepreneurs: Evidence from Colombia. *Eur Acad Manage Bus Econ.* 28,

- Moriano, J. A, Gorgievski, M, Laguna, M, Stephan, U, Zarafshani, K, 2012. A Cross-Cultural Approach to Understanding Entrepreneurial Intention. *J Career Dev.* 39, 162–185.
- Mukherjee, D., Lim, W, M, Kumar, S, Donthu, N. 2022. Guidelines for advancing theory and practice through bibliometric research. *J Bus Res.* 148, 101–115.
- Noyons, E, C, M, Moed, H, F, Van Raan, A, F, J, 1999. Integrating research performance analysis and science mapping. *Scientometrics*, 46, 591–604.
- Palmer, C, Fasbender, U, Kraus, S, Birkner, S, Kailer, N, 2021. A chip off the old block? The role of dominance and parental entrepreneurship for entrepreneurial intention, *Rev Manag Sci.* 15, 287–307.
- Peters, H, P, F, Van Raan, A, F, J, 1991. Structuring scientific activities by co-author analysis: An exercise on a university faculty level. *Scientometrics*, 20, 235–255.
- Pittaway, L, Cope, J, 2007. Entrepreneurship Education: A Systematic Review of the Evidence. *Int Small Bus J.* 25, 479–510.
- Potter, J, 2008. Entrepreneurship and Higher Education: Future Policy Directions, OECD, Paris, 313–335.
- Pritchard, A, 1969. Statistical Bibliography or Bibliometrics?, *J Doc.* 25, 348–349.
- Radhakrishnan, S, Erbis, S, Isaacs, J, A, Kamarthi, S, 2017. Novel keyword co-occurrence network-based methods to foster systematic reviews of scientific literature. *PLoS ONE*, 12, e0172778.
- Sarasvathy, S, D, 2004. The questions we ask and the questions we care about: reformulating some problems in entrepreneurship research. *J Bus Venturing*, 19, 707–717.
- Sedita, S, R, Blasi, S, 2021. Determinants and success factors of student entrepreneurship: evidence from the University of Padova. *Small Business*, (1).
- Shirokova, G, Osiyevskyy, O, Bogatyreva, K, 2016. Exploring the intention–behavior link in student entrepreneurship: Moderating effects of individual and environmental characteristics. *Eur Manag J.* 34, 386–399.
- Shirokova, G, Osiyevskyy, O, Bogatyreva, K, Edelman, L, F, Manolova, T, S, 2022. Moving from Intentions to Actions in Youth Entrepreneurship: An Institutional Perspective, *Entrep Res J.* 12, 25–69.
- Sieger, P, Gruber, M, Fauchart, E, Zellweger, T. 2016. Measuring the social identity of entrepreneurs: Scale development and international validation, *J Bus Venturing*. 31, 542–572.
- Sieger, P, Minola, T, 2017. The Family's Financial Support as a "Poisoned Gift": A Family Embeddedness Perspective on Entrepreneurial Intentions. *J Small Bus Manag.* 55, 179–204.
- Smolka, K, M, Verheul, I, Burmeister-Lamp, K, Heugens, P, P, 2018. Get it together! Synergistic effects of causal and effectual decision-making logics on venture performance. *Entrepreneurship Theory Pract.* 42, 571-604.
- UNESCO. 1998. World declaration on higher education for the twenty-first century: Vision and action. <http://www.un-documents.net/wdhe21c.htm>. Accessed 15 November 2019.
- Valencia-Arias, A, Arango-Botero, D, Sánchez-Torres, J, A, 2022. Promoting entrepreneurship based on university students' perceptions of entrepreneurial attitude, university environment, entrepreneurial culture and entrepreneurial training, *Higher Education, Skills and Work-based Learning*, 12, 328–345.
- van Eck, N, J, Waltman, L, 2010. Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, 84, 523–538.
- Verheul, I, Block, J, Burmeister-Lamp, K, Thurik, R, Tiemeier, H, Turturea, R. 2015. ADHD-like behavior and entrepreneurial intentions, *Small Bus Econ.* 45, 85–101.
- Waltman, L, van Eck, N, J, Noyons, E, C, M. 2010. A unified approach to mapping and clustering of bibliometric networks. *J Informetrics*. 4, 629–635.

- Wright, M, Siegel, D, Mustar, P, 2017. An emerging ecosystem for student start-ups. *The J Technol Transfer.* 42, 909–922.
- Yang, Y, Wu, M, Cui, L, 2012. Integration of three visualization methods based on co-word analysis. *Scientometrics*, 90, 659–673.