

**A Systematic Literature Review of Graduate
Entrepreneurship: Clarifying Concepts, Assessing Current
Research, and Framing Future Agendas**

Qingtao Zhu
James Cunningham
Chiara Marzocchi

q.zhu4@newcastle.ac.uk

8240F PhD NUBS, Newcastle University Business School,
Newcastle upon Tyne NE1 4SE

Title

A Systematic Literature Review of Graduate Entrepreneurship: Clarifying Concepts, Assessing Current Research, and Framing Future Agendas

Summary

The study utilized a Systematic Literature Review (SLR) approach to systematically analyze existing literature on graduate entrepreneurship, ensuring a comprehensive and structured review process. Through a rigorous selection process, 33 articles were included in the review, with a focus on maintaining inclusivity to avoid missing relevant information. The research paper aims to provide a detailed analysis of graduate entrepreneurship by achieving three main objectives: clarifying the concept of graduate entrepreneurship, presenting various determinants of graduate entrepreneurship, and outlining a future research agenda. Overall, the paper contributes to the field by enhancing the understanding of graduate entrepreneurship, setting the stage for future research directions, and providing a foundation for further exploration in this area.

Word count

1,805

Entrepreneurship is a key aspect of national economic growth (Huggins and Thompson, 2020). Reflecting its significance, the field of Entrepreneurship research has witnessed a surge in interest and considerable expansion in recent times (Kraus et al., 2020). This evolution has given rise to the emergence of new, specialized sub-fields within the study of Entrepreneurship, which include, but are not limited to, Corporate Entrepreneurship (Urbano et al., 2022), Social Entrepreneurship (Schätzlein et al., 2023), and Immigrant Entrepreneurship (Yasin and Hafeez, 2023), each contributing to the expanding scope and depth of Entrepreneurship as a scholarly discipline in diverse contexts. The academic literature has increasingly recognized the pivotal role of universities as contextual conditions on entrepreneurship (Guerrero et al., 2021). As part of the third mission expansion of universities, universities now contribute to economic development with the creation of new firms and industries (Guerrero and Urbano, 2012). Universities are important in providing scientific and technological knowledge and act as reservoirs of trained, skilled graduates (Beyhan and Findik, 2018). However, existing literature on university entrepreneurship has predominantly focused on university scientists founding their own firms or on spin-offs originating from intellectual property owned by the universities (Beyhan and Findik, 2018, Pirnay et al., 2003). In fact, graduates outnumber faculty members and play the leading role in the initial establishment of all the university spinoffs (Hayter et al., 2017). Åstebro et al. (2012) posit that graduates exhibit a higher propensity to initiate new business ventures compared to university professors, with such start-ups being far from failures and often exemplifying high quality. Consequently, these graduate-led enterprises can act as catalysts for economic growth (Longva, 2021). Despite this potential, the domain of graduate entrepreneurship has not garnered the attention it merits (Guerrero et al., 2016). Some researchers have explicitly called for more novel and in-depth empirical analysis and attention to be given to graduate entrepreneurship (Åstebro et al., 2012, Breznitz and Zhang, 2020, Nisula and Olander, 2023, Beyhan and Findik, 2018). At least up to now, there is a particular lack of evidence in academia of a systematic literature review on 'graduate entrepreneurship'.

Despite the commencement of entrepreneurship research in the 1960s, a diverse range of definitions for entrepreneurship still persists (Nabi et al., 2006, Rummel et al., 2021). One perspective narrowly interprets the concept of entrepreneurship in terms of starting a business, for example, Acs and Audretsch (2010) defined entrepreneurship as embracing all businesses that are new and dynamic, regardless of size or line of business. Rummel et al. (2021) adopt and apply this narrow definition in their research. In a broad perspective, entrepreneurship can include, but does not require the creation of new firm (Shane and Venkataraman, 2000). Entrepreneurship can refer primarily to an economic function carried out by individuals independently or within organizations (Carlsson et al., 2013). It also pertains to the intrinsic qualities necessary for recognizing and developing new market opportunities, encompassing a range of entrepreneurial traits, skills and attitudes (Van Gelderen et al., 2008). Similarly, the concept of graduate entrepreneurship is subject to ongoing scholarly debate, with a universally accepted definition yet to be established. In broad terms, Nabi et al. (2006) defined it as “the

interaction between the graduate as the product of university education and business start-up in terms of an individual's career-orientation and mindset towards self-employment". Here, it highlights that the higher education can play a significant role in an individual's entrepreneurial journey. It is worth noting that this descriptive concept, following a review of the literature, is one of the few available definitions of graduate entrepreneurship. This research phenomenon also reflects a significant underemphasis on graduate entrepreneurship (Beyhan and Findik, 2018). On top of ambiguity around what the graduate entrepreneurship really is and how it can subsequently be operationalized, scholars have drawn on terminology in an inconsistent manner. A variety of terms have been introduced in the field of research on graduate entrepreneurship, including 'graduate entrepreneur' (Nisula and Olander, 2023, Muscio et al., 2021), 'graduate startup' (Marzocchi et al., 2019), and 'graduate self-employment' (Nabi et al., 2015, Guerrero et al., 2021, Fini et al., 2022). Additionally, discussions on graduate entrepreneurship sometimes encompass concepts such as 'alumni entrepreneurship' or 'alumni startups' (Åstebro et al., 2012, Breznitz and Zhang, 2020). A critical issue highlighted here is that, despite the utilization of such designated in related graduate entrepreneurship literature, there is often a lack of clear definitions for the concepts being investigated. Moreover, multiple terms are frequently used interchangeably to refer to the same concept, adding to the complexity of the discourse, for example, graduate startup and self-employment (Nabi et al., 2015). Collectively, inconsistencies in both concept and terminology have resulted in a fragmented understanding of graduate entrepreneurship, thereby impeding theoretical development (Suddaby, 2010). Consequently, consolidating the existing literature is essential to foster a unified understanding of the underlying concepts and terminology.

Furthermore, while the recent emergence of literature focusing on graduate entrepreneurship represents a positive trend, most of these articles concentrate only on specific dimensions of the phenomenon and fail to offer an overall perspective on the literature in this field. For example, Nisula and Olander (2023) focused on the role of motivations and self-concepts on university graduate entrepreneurship; and Colombo and Piva (2020) discussed the contrasting effects on graduate entrepreneurship and the quality of the human capital developed through university education in STEM fields. While these analyses offer valuable insights into the determinants of graduate entrepreneurship, their contributions are incomplete, as they do not provide a comprehensive overview and analysis of research in this area. More specifically, what factors that play a significant role in determining graduate entrepreneurship remain less understood (Breznitz and Zhang, 2020).

Therefore, this article aims to provide a fine-grained analysis of graduate entrepreneurship by pursuing the following objectives: (1) providing conceptual clarity of graduate entrepreneurship; (2) providing a diversified landscape of the determinants of graduate entrepreneurship; (3) outlining a relevant future research agenda. In this regard, Systematic Literature Review (SLR) are particularly appropriate approaches to highlight the key contents from the literature in a structured way and assess the

collective evidence in graduate entrepreneurship (Snyder, 2019).

A SLR employs a well-defined methodology to 'identify, analyse and interpret all available evidence related to a specific research question in a way that is unbiased and (to a degree) repeatable' (Rowe, 2014). The focus of the SLR is on generating a review that is thorough, transparent, and reproducible, with the aim of mapping and evaluating the existing body of knowledge (Tranfield et al., 2003). Kunisch et al. (2018) suggest that several issues require more attention throughout the entire process of SLR, including the purpose of a review, the data selection process, the assessment and synthesis methods, and the reporting of findings. Fan et al. (2022) extend this call and outline four interrelated areas requiring further focus in SLR methodology, namely rigor, generativity, scope, and transparency. In this paper, we adopt this approach for SLR.

We collected the reviewed articles in three overarching steps, as clustered by Hiebl (2023): (1) identification, (2) screening, and (3) disclosure of the review sample, and using manual filtering to ensure replicability, transparency of the process, and absence of bias in the results. The full approach is illustrated in Figure 1. I utilized the Scopus database to search for articles in English published up to May 2023 using the following search strings: (1) ALL ("graduate entrepreneurship"), OR (2) ALL ("graduate startups"), OR (3) ALL ("student entrepreneurship"), OR (4) ALL ("student startups"), resulting in 2,905 hits. I chose to use Scopus exclusively because it provides extensive coverage of high-quality, peer-reviewed journals across the broad scope of multiple domains (Podsakoff et al., 2005) and encompasses a broader range of articles compared to other databases such as Web of Science (Thelwall, 2018, Mishra et al., 2017). Additionally, it has been demonstrated to be reliable in SLR on entrepreneurship (Passavanti et al., 2023). To ensure language consistency and accessibility, and to focus on original research findings and theoretical discussions relevant to this topic, I further narrowed the search criteria to English-language articles, excluding conference proceedings, book chapters, and reports (Gunasekaran et al., 2015).

This analysis focuses on content that meets the predefined non-content-related inclusion and exclusion criteria to identify relevant articles (Hiebl, 2023). I applied two main exclusion criteria to identify relevant articles:

- 1) Articles that mentioned 'graduate' and 'entrepreneurship' merely as aspects for discussion or analysis, without specifically addressing graduate entrepreneurship or elements of research related to graduate entrepreneurship. This criterion particularly targets articles focusing on student entrepreneurship and entrepreneurship among university faculty.
- 2) Articles that utilized data from 'current students' (e.g., first or final year) to analyze graduate entrepreneurship, are excluded. Given the heterogeneity between graduates and students, it is deemed inappropriate to equate student behaviours with those of graduates for analytical purposes.

To maintain rigour, when in doubt, articles were included rather than excluded to avoid missing potentially relevant material. Four articles were read independently by two other authors, following commonly defined exclusion criteria, to achieve consensus through discussion (Seuring and Gold, 2012). One article was excluded after this process, resulting in a total of 33 articles at the end.

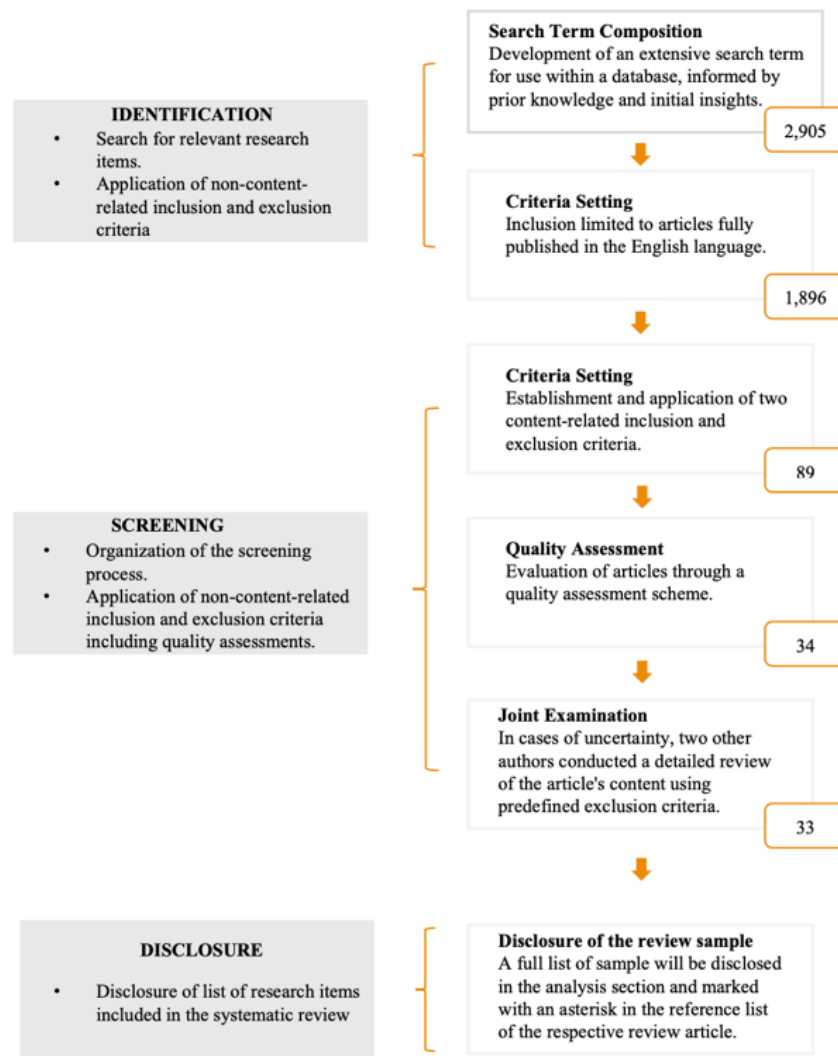


FIGURE 1: Search process in SLR.

To synthesize the data, we adhered to templates for systematic literature reviews as recommended in management research (Saebi et al., 2019, Hietschold et al., 2023). We analysed the final sample using an Excel data extraction sheet (Calabrò et al., 2019), from which we extracted relevant descriptive information such as publication year, journal, regional distribution and methodology. Additionally, we extracted content-related information by thoroughly examining the entire article. This included definitions of graduate entrepreneurship, categorizing these definitions as narrow or broad, characteristics of the sample (e.g., graduation year limits, whether the subjects were graduate entrepreneurs or graduate pre-entrepreneurs), terminology usage, determinants of graduate entrepreneurship, and whether the determinants were

individual or institutional.

Given the practical significance of entrepreneurship in contemporary society, the field encompasses numerous sub-dimensions (Ratten, 2023), each dependent on the specific research objects being examined (Bruyat and Julien, 2001). Consequently, the conceptualization of entrepreneurship varies according to different objects (Ratten, 2017). In this SLR, we focus on graduates as our primary research objects to clarify 'graduate entrepreneurship.' However, this review reveals a surprising finding: none of the selected literature directly clarifies this concept. Through a thorough content analysis of the selected literature, we identify that graduates manifest in the realm of entrepreneurship through four distinct yet interrelated elements: 1) their relationship with their university, 2) their graduation status, 3) the time elapsed since their graduation, and 4) the scope of graduates in entrepreneurship. Additionally, to enhance our understanding of graduate entrepreneurship, we will also provide both broad and narrow conceptual interpretations of entrepreneurship.

Overall, this review will make a significant contribution to the literature on graduate entrepreneurship by facilitating a coherent future conceptualization and in-depth understanding of the subject, while also laying the groundwork for interesting and meaningful future research.

- ACS, Z. J. & AUDRETSCH, D. B. 2010. *Handbook of entrepreneurship research: An interdisciplinary survey and introduction*, Springer.
- ÅSTEBRO, T., BAZZAZIAN, N. & BRAGUINSKY, S. 2012. Startups by recent university graduates and their faculty: Implications for university entrepreneurship policy. *Research policy*, 41, 663-677.
- BEYHAN, B. & FINDIK, D. 2018. Student and graduate entrepreneurship: ambidextrous universities create more nascent entrepreneurs. *The Journal of Technology Transfer*, 43, 1346-1374.
- BREZNITZ, S. M. & ZHANG, Q. 2020. Determinants of graduates' entrepreneurial activity. *Small Business Economics*, 55, 1039-1056.
- BRUYAT, C. & JULIEN, P.-A. 2001. Defining the field of research in entrepreneurship. *Journal of business venturing*, 16, 165-180.
- CALABRÒ, A., VECCHIARINI, M., GAST, J., CAMPOPIANO, G., DE MASSIS, A. & KRAUS, S. 2019. Innovation in family firms: A systematic literature review and guidance for future research. *International journal of management reviews*, 21, 317-355.
- CARLSSON, B., BRAUNERHJELM, P., MCKELVEY, M., OLOFSSON, C., PERSSON, L. & YLINENPÄÄ, H. 2013. The evolving domain of entrepreneurship research. *Small business economics*, 41, 913-930.
- COLOMBO, M. G. & PIVA, E. 2020. Start-ups launched by recent STEM university graduates: The impact of university education on entrepreneurial entry. *Research Policy*, 49, 103993.
- FAN, D., BRESLIN, D., CALLAHAN, J. L. & ISZATT-WHITE, M. 2022. Advancing literature review methodology through rigour, generativity, scope and transparency. *International Journal of Management Reviews*, 24, 171-180.
- FINI, R., MEOLI, A. & SOBRERO, M. 2022. University graduates' early career decisions and interregional mobility: self-employment versus salaried job. *Regional Studies*, 56, 972-988.
- GUERRERO, M., LIÑÁN, F. & CÁCERES-CARRASCO, F. R. 2021. The influence of ecosystems on the entrepreneurship process: a comparison across developed and developing economies. *Small Business Economics*, 57, 1733-1759.
- GUERRERO, M. & URBANO, D. 2012. The development of an entrepreneurial university. *The journal of technology transfer*, 37, 43-74.
- GUERRERO, M., URBANO, D. & FAYOLLE, A. 2016. Entrepreneurial activity and regional competitiveness: evidence from European entrepreneurial universities. *The Journal of Technology Transfer*, 41, 105-131.
- GUNASEKARAN, A., IRANI, Z., CHOY, K.-L., FILIPPI, L. & PAPADOPOULOS, T. 2015. Performance measures and metrics in outsourcing decisions: A review for research and applications. *International Journal of Production Economics*, 161, 153-166.
- HAYTER, C. S., LUBYNSKY, R. & MAROULIS, S. 2017. Who is the academic entrepreneur? The role of graduate students in the development of university spinoffs. *The Journal of Technology Transfer*, 42, 1237-1254.
- HIEBL, M. R. 2023. Sample selection in systematic literature reviews of management research. *Organizational research methods*, 26, 229-261.
- HIETSCHOLD, N., VOEGTLIN, C., SCHERER, A. G. & GEHMAN, J. 2023. Pathways to social value and social change: An integrative review of the social entrepreneurship literature. *International*

- Journal of Management Reviews*, 25, 564-586.
- HUGGINS, R. & THOMPSON, P. 2020. Human agency, entrepreneurship and regional development: A behavioural perspective on economic evolution and innovative transformation. *Entrepreneurship & Regional Development*, 32, 573-589.
- KRAUS, S., BREIER, M. & DASÍ-RODRÍGUEZ, S. 2020. The art of crafting a systematic literature review in entrepreneurship research. *International Entrepreneurship and Management Journal*, 16, 1023-1042.
- KUNISCH, S., MENZ, M., BARTUNEK, J. M., CARDINAL, L. B. & DENYER, D. 2018. Feature topic at organizational research methods: How to conduct rigorous and impactful literature reviews? *Organizational Research Methods*, 21, 519-523.
- LONGVA, K. K. 2021. Student venture creation: developing social networks within entrepreneurial ecosystems in the transition from student to entrepreneur. *International Journal of Entrepreneurial Behavior & Research*, 27, 1264-1284.
- MARZOCCHI, C., KITAGAWA, F. & SÁNCHEZ-BARRIOLUENGO, M. 2019. Evolving missions and university entrepreneurship: academic spin-offs and graduate start-ups in the entrepreneurial society. *The Journal of Technology Transfer*, 44, 167-188.
- MISHRA, D., GUNASEKARAN, A., PAPADOPOULOS, T. & HAZEN, B. 2017. Green supply chain performance measures: A review and bibliometric analysis. *Sustainable production and consumption*, 10, 85-99.
- MUSCIO, A., SHIBAYAMA, S. & RAMACIOTTI, L. 2021. Universities and start-up creation by Ph. D. graduates: the role of scientific and social capital of academic laboratories. *The Journal of Technology Transfer*, 1-29.
- NABI, G., HOLDEN, R. & WALMSLEY, A. 2006. Graduate career-making and business start-up: a literature review. *Education+ Training*, 48, 373-385.
- NABI, G., WALMSLEY, A. & HOLDEN, R. 2015. Pushed or pulled? Exploring the factors underpinning graduate start-ups and non-start-ups. *Journal of Education and Work*, 28, 481-506.
- NISULA, A.-M. & OLANDER, H. 2023. The role of motivations and self-concepts in university graduate entrepreneurs' creativity and resilience. *Journal of Small Business Management*, 61, 265-294.
- PASSAVANTI, C., PONSIGLIONE, C., PRIMARIO, S. & RIPPA, P. 2023. The evolution of student entrepreneurship: State of the art and emerging research direction. *The International Journal of Management Education*, 21, 100820.
- PIRNAY, F., SURLEMONT, B., NLEMVO, F., X00E9, X00E9 & RIC 2003. Toward a typology of university spin-offs. *Small business economics*, 21, 355-369.
- PODSAKOFF, P. M., MACKENZIE, S. B., BACHRACH, D. G. & PODSAKOFF, N. P. 2005. The influence of management journals in the 1980s and 1990s. *Strategic management journal*, 26, 473-488.
- RATTEN, V. 2017. Gender entrepreneurship and global marketing. *Journal of Global Marketing*, 30, 114-121.
- RATTEN, V. 2023. Entrepreneurship: Definitions, opportunities, challenges, and future directions. *Global Business and Organizational Excellence*, 42, 79-90.
- ROWE, F. 2014. What literature review is not: diversity, boundaries and recommendations. *European Journal of Information Systems*, 23, 241-255.
- RUMMEL, S., AKKERMANS, J., BLOKKER, R. & VAN GELDEREN, M. 2021. Shocks and

- entrepreneurship: A study of career shocks among newly graduated entrepreneurs. *Career Development International*, 26, 562-581.
- SAEBI, T., FOSS, N. J. & LINDER, S. 2019. Social entrepreneurship research: Past achievements and future promises. *Journal of management*, 45, 70-95.
- SCHÄTZLEIN, L., SCHLÜTTER, D. & HAHN, R. 2023. Managing the external financing constraints of social enterprises: A systematic review of a diversified research landscape. *International Journal of Management Reviews*, 25, 176-199.
- SEURING, S. & GOLD, S. 2012. Conducting content-analysis based literature reviews in supply chain management. *Supply chain management: An international journal*, 17, 544-555.
- SHANE, S. & VENKATARAMAN, S. 2000. The promise of entrepreneurship as a field of research. *Academy of management review*, 25, 217-226.
- SNYDER, H. 2019. Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104, 333-339.
- SUDDABY, R. 2010. Challenges for institutional theory. *Journal of management inquiry*, 19, 14-20.
- THELWALL, M. 2018. Dimensions: A competitor to Scopus and the Web of Science? *Journal of informetrics*, 12, 430-435.
- TRANFIELD, D., DENYER, D. & SMART, P. 2003. Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British journal of management*, 14, 207-222.
- URBANO, D., TURRO, A., WRIGHT, M. & ZAHRA, S. 2022. Corporate entrepreneurship: a systematic literature review and future research agenda. *Small Business Economics*, 59, 1541-1565.
- VAN GELDEREN, M., BRAND, M., VAN PRAAG, M., BODEWES, W., POUTSMA, E. & VAN GILS, A. 2008. Explaining entrepreneurial intentions by means of the theory of planned behaviour. *Career development international*, 13, 538-559.
- YASIN, N. & HAFEEZ, K. 2023. Three waves of immigrant entrepreneurship: a cross-national comparative study. *Small Business Economics*, 60, 1281-1306.