

SHAPING HIGHER EDUCATION: THE RISE OF ENTREPRENEURIAL UNIVERSITIES

Florina-Sanda TRIPA

University of Oradea, Oradea, Romania
sandatripa@gmail.com

Daniel BADULESCU

University of Oradea, Oradea, Romania
dbadulescu@uoradea.ro

Alina BADULESCU

University of Oradea, Oradea, Romania
abadulescu@uoradea.ro

Simona-Aurelia BODOG

University of Oradea, Oradea, Romania
sbodog@uoradea.ro

Abstract

Entrepreneurial universities play a crucial role in existing economic landscape, stimulating innovation, entrepreneurial initiative and economic development. These institutions extend their traditional mission of teaching and research by integrating an entrepreneurial perspective, promoting the commercialization of research and supporting start-ups. The concept of the entrepreneurial university has evolved significantly, now including actions and initiatives that support innovation and knowledge transfer to industry and communities. Factors such as visionary leadership, institutional culture, support networks and collaborations with business and public authorities are essential for the development of these universities. For regional development, knowledge transfer and commercialization of the academic research's outcomes, the incubators and support for new firms are also important activities promoted by these universities. While facing challenges such as funding constraints and bureaucratic hurdles, entrepreneurial universities have significant opportunities to innovate and collaborate with industry partners. Their impact on regional development is evident by creating jobs, stimulating innovation and improving the local entrepreneurial ecosystem, thus contributing to economic growth and human capital development.

Keywords: Entrepreneurial universities, Economic development, Innovation.

DOI: <https://doi.org/10.24818/beman/2025.15.1-02>

1. INTRODUCTION

There is an increasingly widespread and unanimous recognition that universities, and especially those deeply engaged in promoting and supporting an entrepreneurial perspective, are becoming fundamental actors in stimulating innovation, business initiative and economic development. Through their ability to commercialize research, support start - ups and engage and cooperate with local communities, universities are expanding their role and importance in the present-day economy and society. They move from a perspective based on the transfer of knowledge to one that considers the transformation of mentalities and direct involvement in economic and social life. In other words, to the traditional missions of universities, of teaching and research, a third, newer, entrepreneurial one is added, enriching and confirming their contribution to economic and social development (Guerrero & Urbano, 2012; OECD, 2017).

Prior to a specific definition of an entrepreneurial university, we have to recognize that the concept of an entrepreneurial university has significantly evolved. It goes beyond the traditional educational models, to the integration of entrepreneurship as a university discipline, and up to activities and initiatives aimed at stimulating innovation and knowledge transfer to the beneficiaries, but also to the support given to the new companies created by students or staff.

The new model of the entrepreneurial university therefore emphasizes the integration of entrepreneurial activities into the mission of the university, promoting a culture that supports student entrepreneurship and the involvement of university in entrepreneurial activities, empowering both academic staff and students, with an open, dynamic mentality, responsive to innovation (Gubik & Bartha, 2018; Fagadar, et al., 2021) generating solutions to current and potential problems of local communities, regional economies and even the human society as a whole. Of course, in achieving these large-scale objectives, universities first of all propose to build more dynamic frameworks that encourage innovation, business creation and support their take-off (Guerrero, et al., 2006).

2. MAIN TOPICS IN UNDERSTANDING THE PRESENCE AND ACTION OF ENTREPRENEURIAL UNIVERSITIES

The need to integrate education and research with innovative initiatives and economic development is considered a critical element of the emergence and widespread of entrepreneurial universities, even if in most cases we are not talking about an “emergence” in the true sense of the word but, rather, about a profound reformation and adaptation of existing universities to the realities of the contemporary world, to the requirements of the economic environment. Regardless of the starting method, we can say that these

institutions promote the entrepreneurial spirit through educational programs, business incubators and partnerships with the business environment, offering students opportunities to develop business ideas, benefit from the mentorship of experienced entrepreneurs, or participate in specific competitions (Peris-Ortiz, Gómez, Merigó-Lindahl, & Rueda-Armengot, 2017), (Feola, Parente, & Cucino, 2021). In Europe, countries such as the United Kingdom, with top universities such as Oxford and Cambridge, but also Denmark, with Copenhagen Business School, or Erasmus University Rotterdam in Netherlands or Autonomous University of Barcelona, Spain (among others) are leaders in the field of entrepreneurship education (OECD, 2022), (HEI Innovate, 2024). In the European Union, funding programs and guidelines developed by the European Commission have supported the development of entrepreneurial skills among young people, contributing to economic growth and social cohesion (European Parliament, 2015). Perhaps the best-known cases come from the United States, many universities being recognized not only for their top-notch entrepreneurship programs, but also for the outstanding achievements of their students and recent graduates such as: Stanford University, renowned for its close ties with the technology industry and for its business incubators such as StartX; Massachusetts Institute of Technology (MIT) with a robust entrepreneurial ecosystem, which includes initiatives such as the MIT \$100K Entrepreneurship Competition and the Martin Trust Center for MIT Entrepreneurship; University of California, Berkeley with its focus on innovation and social impact and initiatives such as the SkyDeck startup accelerator; or the Wharton School offering MBA programs in entrepreneurship and with resources such as the Venture Lab and Wharton Small Business Development Center (USNews, 2023), (Entrepreneur, 2023), (Guerrero & Urbano, 2012), (Peris-Ortiz, Gómez, Merigó-Lindahl, & Rueda-Armengot, 2017).

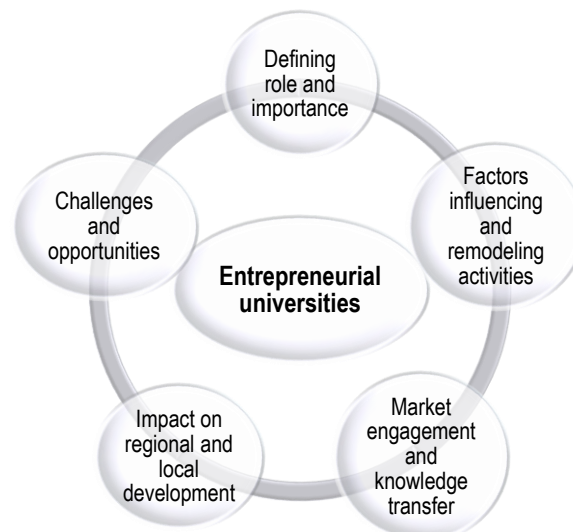


FIGURE 1. MAJOR TOPICS IN UNDERSTANDING ENTREPRENEURIAL UNIVERSITIES
Source: Authors' research

There are several key themes in the understanding the emergence and development of entrepreneurial universities and they circumscribe to several major coordinates – defining their role, the factors that influence and rebuilt their activities, their involvement in the market and the transfer of knowledge, the impact on regional and community development and, last but not least, the challenges and opportunities they face (Figure 1). In the following chapters, we have chosen to organize these five topics into two major groups, namely, the role and influences of entrepreneurial universities and, respectively, the interaction and impact of entrepreneurial universities, making a brief approach on these coordinates.

3. THE ROLE AND INFLUENCES OF ENTREPRENEURIAL UNIVERSITIES

3.1. The role of entrepreneurial universities

Entrepreneurial universities are, therefore, those institutions that actively promote entrepreneurship in the three specific directions of action - education, research and community involvement (Guerrero, Kirby, & Urbano, 2006). In the attempt of a definition we can say that entrepreneurial universities are institutions that integrate the two traditional academic missions (teaching and research, respectively) with a third, new one - the contribution to economic development through innovation and knowledge transfer. This concept, originated and continuously refined within the Triple Helix model, emphasizes the collaboration between universities, industry and public authorities (Feola, Parente, & Cucino, 2021; Etzkowitz & Zhou, 2017; Samo & Huda, 2019). These universities promote an entrepreneurial spirit among students and teachers, encouraging the creation of start-ups and the commercialization of research (Sam & van der Sijde, 2014), having a capital role in stimulating regional economic growth, increasing employment capacity and addressing societal challenges through interdisciplinary approaches (Seggie, 2021). However, finding a balance between the goals of commercialization, academic integrity and social inclusion, respectively, remains a challenge (World Economic Forum, 2020). Even so, entrepreneurial universities are essential in shaping a dynamic and innovative landscape of higher education, continuously adapting their mission by integrating entrepreneurial thinking and action into their specific programs and operations.

3.2. Factors of development and reorientation of activities in entrepreneurial universities

Entrepreneurial universities have been influenced by a number of environmental factors, opportunities and challenges, but also by government policies, availability of funding and institutional culture (Guerrero & Urbano, 2012; Huang, et al., 2024). These factors can either facilitate, stagnate or even discourage entrepreneurial activities within universities. Numerous researchers (Bezanilla, García-Olalla, Paños-

Castro, & Arruti, 2020; Feola, Parente, & Cucino, 2021; Badulescu & Badulescu, 2014; Badulescu, Badulescu, Csintalan, & Simut, 2020; Belitski & Sikorski, 2024) point several factors that contribute to the spread and development of entrepreneurial universities such as (Figure 2):

- Strong, visionary leadership, governance structures and supportive policies that encourage and support entrepreneurial activities;
- Encouraging a culture that values innovation and initiatives within the university community, promotes role models, reward systems and entrepreneurial attitudes and skills;
- Building a support network (technology transfer offices, incubators and access to venture capital), helping to commercialize research results and facilitating the creation of spin-off companies;
- Setting-up and implementing entrepreneurial education and training programs, integrating entrepreneurial teaching methodologies, offering entrepreneurship courses;
- Strong collaborations and partnerships with industry, local and central authorities and other external stakeholders. They can provide resources, opportunities and real-world experience for students and teachers;
- Ensuring the financing of entrepreneurial initiatives, from various sources (internal and external), essential for supporting research and development activities;
- Provision the equipment and infrastructure suitable for supporting entrepreneurial activities - innovation centres, research laboratories and shared working spaces;
- The consistent pursuit of a mission based on a clear strategy, which includes entrepreneurship as a core component, campaigning for the alignment of the university's activities with its entrepreneurial goals.

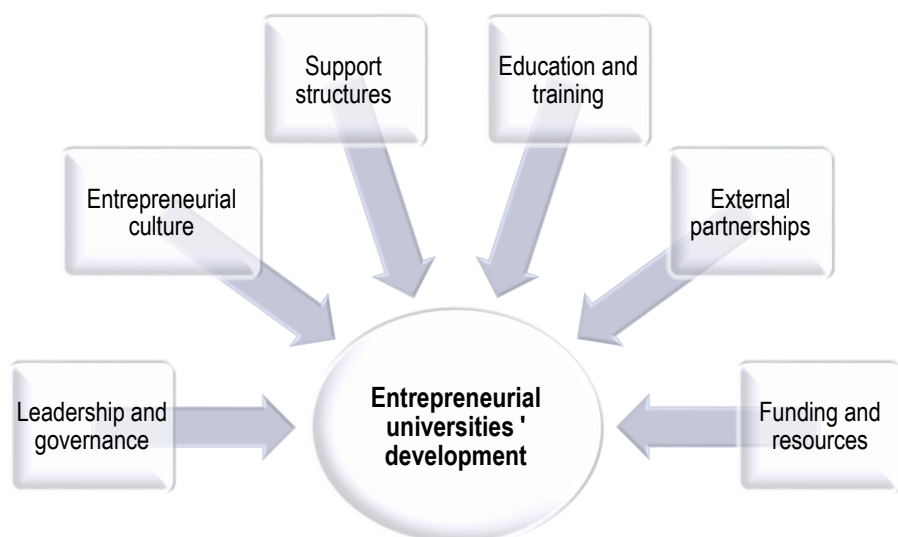


FIGURE 2. FACTORS OF THE WIDESPREAD AND DEVELOPMENT OF ENTREPRENEURIAL UNIVERSITIES ACCORDING TO BEZANILA ET AL. (2020) AND FEOLA ET AL. (2021)
Source: Bezanila et al. (2020) and Feola et al. (2021)

These factors collectively contribute to creating an environment in which entrepreneurship can prosper within universities, stimulating innovation and economic development.

3.3. Challenges and opportunities

While entrepreneurial universities face challenges such as funding constraints and bureaucratic obstacles, they also have opportunities to innovate and collaborate with industry partners (Guerrero, Kirby, & Urbano, 2006). The ability to meet these challenges is critical to their success. The development of entrepreneurial universities involves addressing various challenges and capitalizing on numerous opportunities (Figure 3). Thus, in terms of challenges we can mention:

1. Difficult access to financing and various resources: Securing the financing and resources necessary to support the launch and consolidation of entrepreneurial initiatives can be difficult, especially in countries and regions with limited government support (Nano, Mulaj, Kripa, & Duraj, 2024);
2. Understanding and adapting to the complex legal and regulatory frameworks can hinder or delay the implementation of entrepreneurial programs;
3. Complementarily, the entrepreneurial strategies developed by universities in the longer term may suffer due to the instability of the political environment and the frequent changes of priorities induced by them;
3. The academic environment has developed over time a certain type of culture and philosophy, traditional and somewhat conservative, in which teaching and conventional research are seen as taking precedence over entrepreneurial activities and the commercialization of research results (Guerrero, et al., 2024; Simut, Simut, Badulescu, & Badulescu, 2024);
4. Although interdisciplinary collaboration is always invoked, being considered essential for the stimulation of innovation and the successful implementation of research results, its practical accomplishment (i.e. bringing the interests of different academic disciplines to a common point), can be a serious challenge (Belitski & Sikorski, 2024);
5. Institutional management and academic strategic planning are systematically challenged by ensuring the sustainability of entrepreneurial activities carried out within universities and the difficulties of aligning them (flexible and opportunistic in nature) with long-term institutional goals (somewhat rigid and sequential) (Nano, Mulaj, Kripa, & Duraj, 2024).

But there is also a wide field of opportunities:

1. The digital world and specific innovations, the exploitation of digital technologies can improve entrepreneurial education, but can also make administrative and academic management processes more efficient (Nano, Mulaj, Kripa, & Duraj, 2024),

2. Attention to human resource training, development and effective management can create an exceptionally supportive environment for entrepreneurship (Nano, Mulaj, Kripa, & Duraj, 2024);
3. Regions can benefit from university entrepreneurial activities and initiatives, by relaunching industries, creating new business opportunities, stimulating innovation and attracting additional human and financial resources to the region and open local communities, including by attracting talent and increasing the employment of highly qualified individuals (Belitski & Sikorski, 2024);
4. A good regional impact can open the way to opportunities for international partnerships and collaborations, expanding the reach and significance of entrepreneurial initiatives, accelerating innovations and their implementation (Belitski & Sikorski, 2024);
5. The integration of entrepreneurial disciplines into the curriculum, the creation of facilities and opportunities for innovation, joint work, the promotion of entrepreneurial and mentoring models, support in the establishment and launch of businesses, will lead to an increase in the quality of learning, offering students practical skills and highly valued experiences on the labour market, quickly transforming theoretical knowledge in good quality practical skills (Guerrero, et al., 2024).

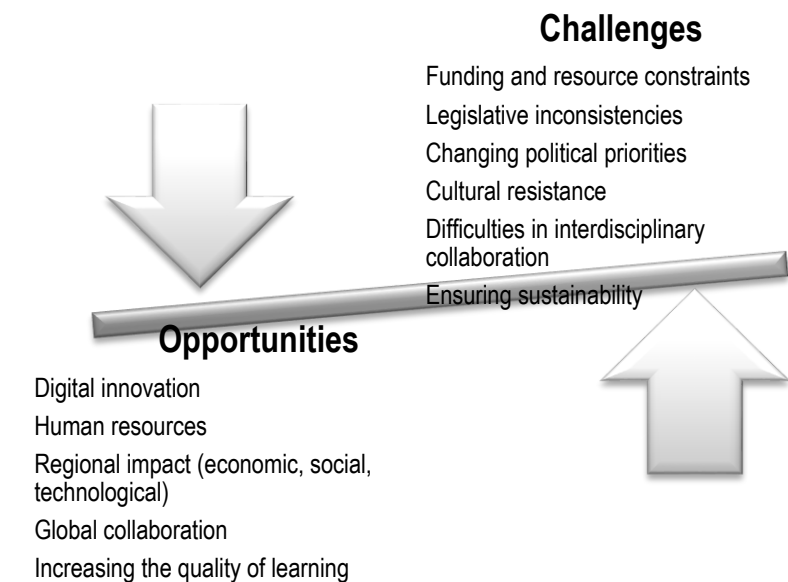


FIGURE 3. CHALLENGES AND OPPORTUNITIES IN DEVELOPING ENTREPRENEURIAL UNIVERSITIES
Source: Authors' research

4. THE INTERACTION AND IMPACT OF ENTREPRENEURIAL UNIVERSITIES

4.1. Knowledge transfer for improving economic development

Within entrepreneurial universities, a significant emphasis is placed on how they transfer the acquired knowledge to the market. This includes knowledge transfer/commercialization (i.e. patents, licenses, intellectual property rights) and entrepreneurial innovation initiatives (i.e. start - ups, spin-offs) (Guerrero, Kirby, & Urbano, 2006). Effective knowledge transfer mechanisms are essential for improving regional economic development. The knowledge transfer processes of universities can play an essential role in stimulating inclusive development especially when they are involved in solving acute economic, technological and social challenges (Audretsch, 2014; Guerrero & Urbano, 2012; Fischer, Guerrero, Guimón, & Schaeffer, 2021).

Knowledge transfer and commercialization are essential activities in the mission of entrepreneurial universities. The constant complaints of the business environment regarding the partial congruence between the results of academic research and the needs of the industry, have led academic institutions to reduce this gap by getting closer to the needs of the market, encouraging innovation and technological development oriented to the market and economic growth. Key mechanisms in this attempt are technology transfer offices (TTOs), which facilitate the patenting and licensing of university inventions (Bradley, Hayter, & Link, 2013). Entrepreneurial universities also support the creation of spin-offs and start-ups by providing resources such as incubators and accelerators (Katzman & Azziz, 2021).

There are several models of technology transfer, from linear, traditional university-industry approaches, to more dynamic, complex and interactive ones captured in the literature in the well-known Triple Helix model (Etzkowitz & Zhou, 2017), which emphasizes collaboration between universities, industry and government, creating an environment conducive to innovation (Seggie, 2021). It is worth noting that simply affirming the availability for technology transfer and creating the supporting infrastructure is not enough, the effectiveness of knowledge transfer is influenced by factors such as organizational culture, the presence of entrepreneurial orientation and fast and direct links between company managers and the academic world (Chang, Tsai-Lin, & Liang, 2022). These elements help universities meet the challenges of commercialization while maintaining their academic and social missions (Lindholm Dahlstrand, 2008). Through it, entrepreneurial universities play an essential role in translating academic research into practical applications, stimulating regional economic development and encouraging a culture of innovation.

4.2. The impact on regional development

Several studies show that entrepreneurial universities contribute to regional economic growth by creating jobs, encouraging innovation and improving the local entrepreneurial ecosystem (Guerrero, Kirby, & Urbano, 2006). Their role as catalysts of economic development is increasingly recognized by decision-makers. Entrepreneurial universities have a significant impact on regional development through various mechanisms, and we mention some of them in the following paragraphs.

Entrepreneurial universities drive economic growth, because they encourage the launch of new innovative companies (start-ups), which can lead to the creation of new businesses and jobs in the region (Klingler-Vidra & Chalmers, 2023), in leading technological fields, contributing to the growth and diversification of the local and regional economy.

Through the technology transfer offices, incubators and business accelerators they organize or actively participate in, these universities support the commercialization of research and innovations and boost the market for small and medium-sized enterprises (Klingler-Vidra & Chalmers, 2023). This can drive local emulation through the development of new products and services, enhancing the region's competitive advantage (Fritsch & Wyrwich, 2017).

By offering education and training focused on entrepreneurship and innovation, alongside traditional education, these universities help to develop a skilled workforce, to develop human capital in various fields of activity, "a crucial function as intermediaries able to manage and increase local intellectual capital and make possible the learning region growth" (Trequattrini, Lombardi, Lardo, & Cuzzo, 2018). Even if only a part of the graduates remains in the region, they will contribute significantly to the enrichment of its intellectual and entrepreneurial capital.

The involvement of many graduates of these universities in the management of public and private institutions, in political influence groups and reforms, where they often assume key roles in the development of innovation policies, shows the contribution of entrepreneurial universities to regional development. Graduates in these key roles, by supporting policies and initiatives focused on start - ups, restructuring of traditional industries and sustainability, can shape a more favourable environment for entrepreneurship and innovation in the region (Klingler-Vidra & Chalmers, 2023).

Entrepreneurial universities promote a culture of innovation and risk-taking, reshaping business traditions in local communities and the region as a whole, shaping a new social and cultural environment conducive to development and modernity (Klingler-Vidra & Chalmers, 2023; Feola, Parente, & Cucino, 2021; Del Monte, Moccia, & Pennacchio, 2022). This cultural shift can lead to increased collaboration and a more dynamic regional ecosystem (Badulescu & Badulescu, 2014).

Entrepreneurial universities have an active role in creating various networks and collaborations, redefining the collaboration between the academic environment, industry and public institutions, see the "triple helix "

model (Etzkowitz & Zhou, 2017), contributing to the design and implementation of more efficient and integrated regional development strategies (Leišytė & Sigl, 2018; Trequattrini, Lombardi, Lardo, & Cuzzo, 2018; Samo & Huda, 2019).

5. CONCLUSIONS AND DIRECTIONS FOR FUTURE RESEARCH

In the context of our research, we highlighted the important and transformative role of entrepreneurial universities in the modern economy of knowledge, suggestively captured in the analysed literature. As these universities continue to evolve, understanding the factors that influence their entrepreneurial activities will be critical to maximizing their impact on society. The literature indicates a growing recognition of the university's role in stimulating entrepreneurship and hence, in boosting economic growth and transforming production structures. As universities adapt to changing economic landscapes, their models will likely continue to evolve, emphasizing collaboration, innovation and support for aspiring entrepreneurs. However, at this moment it is difficult to say whether the entrepreneurial university model will dominate the academic landscape in the coming decades.

Indeed, entrepreneurial universities offer many benefits and make consistent contributions to stimulating innovation, economic growth and societal progress, but it should not be ignored that their current model poses new and difficult to manage challenges, such as increasing resource demands and risk of excessive commercialization that threatens and obscures genuine academic values. The advantages and disadvantages brought will have to be carefully weighed for the future of higher education institutions, which must accept and manage the traditional tasks in the context of the adoption of the new attributions in the economy and society of the future.

Although the role and position of entrepreneurial universities is likely to grow over the next decade, there is enough evidence to suggest that they may not completely replace traditional higher education institutions. Rather, a hybrid, complex model, incorporating entrepreneurial elements within the core academic values of traditional universities, can be an effective approach and suited to the realities of the coming decades.

The relationship between university education institutions, entrepreneurial dynamics and local and regional development are topics carefully studied in the literature for more than three decades, however, the relatively recent arrival of entrepreneurial universities in this context, makes recognition of their role and impact is still in its beginning. Therefore, we consider that future research should also focus on topics such as assessing the long-term impact of university-led entrepreneurial initiatives on local, regional and global economies, or assessing the long-term outcomes of student and graduate entrepreneurial initiatives, or the success in the career and business of the graduates, their integration in the decision-making structures

and influence at the regional and national level (Correia, Marques, Silva, & Ramadani, 2024). Of course, these researches need data from a longer period of time and a sufficient spatial distribution, to gain in relevance.

Entrepreneurial universities are promising elements in the regional and national economic and educational landscape, but theory and practice in the field are still looking for their own way, a way to crystallize into concepts and clear directions of action. Future research should consider broadening the field of knowledge by integrating theoretical frameworks with practical applications in entrepreneurship education, exploring the impact of digital transformations on university entrepreneurship. The development of integrated models that combine various elements of the entrepreneurial ecosystem within universities could also be a fertile topic for future research.

REFERENCES

- Audretsch, D. (2014). From the entrepreneurial university to the university for the entrepreneurial society. *Journal of Technology Transfer*, 39: 313–321, <https://doi.org/10.1007/s10961-012-9288-1>.
- Badulescu, A., Badulescu, D., Csintalan, C., & Simut, R. (2020). Teaching Entrepreneurship: How Prepared are Romanian Educators? In S. Fotea, I. Fotea, & S. Vaduva (Eds.), *Challenges and Opportunities to Develop Organizations Through Creativity, Technology and Ethics* (pp. 51-57). Cham: Springer Proceedings in Business and Economics.
- Badulescu, D., & Badulescu, A. (2014). *Antreprenoriatul. Cum, cine, când? / Entrepreneurship. How, who, when?*, Cluj Napoca, Romania: Editura Presa Universitară Clujeană.
- Badulescu, D., & Badulescu, A. (2014). Managing entrepreneurship education in higher education institutions – case Romania. *MEST Journal*, 2(2): 1-9.
- Belitski, M., & Sikorski, J. (2024). Three steps for universities to become entrepreneurial: a case study of entrepreneurial process and dynamic capabilities. *The Journal of Technology Transfer*, <https://doi.org/10.1007/s10961-024-10099-1>.
- Bezanilla, M., García-Olalla, A., Paños-Castro, J., & Arruti, A. (2020). Developing the Entrepreneurial University: Factors of Influence. *Sustainability*, 12: 842, <https://doi.org/10.3390/su12030842>.
- Bradley, S., Hayter, C., & Link, A. (2013). Models and Methods of University Technology Transfer. *Foundations and Trends in Entrepreneurship*, 9: 365- 570, <http://dx.doi.org/10.1561/0300000004>.
- Chang, Y., Tsai-Lin, T., & Liang, T. (2022). Entrepreneurial Orientation and Knowledge Transfer Effectiveness: The Effect of Organizational Commercial Slack. *Minerva*, 60: 441–462, <https://doi.org/10.1007/s11024-022-09463-y>.
- Correia, M., Marques, C., Silva, R., & Ramadani, V. (2024). Academic Entrepreneurship Ecosystems: Systematic Literature Review and Future Research Directions. *Journal of the Knowledge Economy*, <https://doi.org/10.1007/s13132-024-01819-x1>.
- Del Monte, A., Moccia, S., & Pennacchio, L. (2022). Regional entrepreneurship and innovation: historical roots and the impact on the growth of regions. *Small Business Economics*, 58: 451–473, <https://doi.org/10.1007/s11187-020-00425-w>.

- Entrepreneur (2023). Top 50 Best Undergraduate Programs for Entrepreneurs in 2024. Retrieved November 29, 2024, from <https://www.entrepreneur.com/living/top-50-best-undergraduate-programs-for-entrepreneurs-in-2024/459215>.
- Etzkowitz, H., & Zhou, C. (2017). The Entrepreneurial University in a Triple Helix. In H. Etzkowitz, & C. Zhou (Eds.), *The Triple Helix*. London: Routledge.
- European Parliament (2015). REPORT on promoting youth entrepreneurship through education and training. Retrieved November 25, 2024, from https://www.europarl.europa.eu/doceo/document/A-8-2015-0239_EN.html.
- Feola, R., Parente, R., & Cucino, V. (2021). The Entrepreneurial University: How to Develop the Entrepreneurial Orientation of Academia. *Journal of Knowledge Economy*, 12: 1787–1808, <https://doi.org/10.1007/s13132-020-00675-9>.
- Feola, R., Parente, R., & Cucino, V. (2021). The Entrepreneurial University: How to Develop the Entrepreneurial Orientation of Academia. *Journal of Knowledge Economy*, 12: 1787–1808, <https://doi.org/10.1007/s13132-020-00675-9>.
- Fischer, B., Guerrero, M., Guimón, J., & Schaeffer, P. (2021). Knowledge transfer for frugal innovation: where do entrepreneurial universities stand? *Journal of Knowledge Management*, 25(2): 360–379, <https://doi.org/10.1108/JKM-01-2020-0040>.
- Fritsch, M., & Wyrwich, M. (2017). The effect of entrepreneurship on economic development—an empirical analysis using regional entrepreneurship culture. *Journal of Economic Geography*, 17(1): 157–189, <https://doi.org/10.1093/jeg/lbv049>.
- Guerrero, M., & Urbano, D. (2012). The development of an entrepreneurial university. *The Journal of Technology Transfer*, 37(1): 43–74, DOI: 10.1007/s10961-010-9171-x.
- Guerrero, M., Fayolle, A., Di Guardo, M., et al., Lamine, W., & Mian, S. (2024). Re-viewing the entrepreneurial university: strategic challenges and theory building opportunities. *Small Business Economics*, 63: 527–548, <https://doi.org/10.1007/s11187-023-00858-z>.
- Guerrero, M., Kirby, D., & Urbano, D. (2006). A Literature Review on Entrepreneurial Universities: An Institutional Approach. Barcelona: Autonomous University of Barcelona, Business Economics Department, Working Paper Series, No. 06/8.
- HEI Innovate (2024). Is your Higher Education Institution prepared for future challenges? Retrieved November 01, 2024, de pe <https://www.heinnovate.eu/en>.
- Huang, Y., Xu, Y., Zhang, J., Long, Z., Qian, Z., Liu, W., & Chen, L. (2024). Research on factors influencing the academic entrepreneurial ability of teachers in the digital age: Evidence from China. *Heliyon*, 10(2), <https://doi.org/10.1016/j.heliyon.2024.e24152>.
- Katzman, R., & Azziz, R. (2021). Technology Transfer and Commercialization as a Source for New Revenue Generation for Higher Education Institutions and for Local Economies. In A. Al-Youbi, A. Zahed, & A. Atalar (Eds.), *International Experience in Developing the Financial Resources of Universities*, Cham: Springer, https://doi.org/10.1007/978-3-030-78893-3_8.
- Klingler-Vidra, R., & Chalmers, A. (2023). The Entrepreneurial University's Impact on Regional Socioeconomic Development: The "Alumni Policymaker" Mechanism. *Business and Politics*, 25(3): 251–292, doi:10.1017/bap.2023.9.
- Leišytė, L., & Sigl, L. (2018). Academic institutional entrepreneurs in Germany: navigating and shaping multi-level research commercialization governance. *Triple Helix*, 5(13), <https://doi.org/10.1186/s40604-018-0057-5>.

- Lindholm Dahlstrand, Å. (2008). University Knowledge Transfer and the Role of Academic. In J. Potter (Ed.), *Entrepreneurship and Higher Education*. Paris: OECD Publishing, <https://doi.org/10.1787/9789264044104-12-en>.
- Nano, X., Mulaj, D., Kripa, D., & Duraj, B. (2024). Entrepreneurial Education and Sustainability: Opportunities and Challenges for Universities in Albania. *Administrative Sciences*, 14: 122, <https://doi.org/10.3390/admsci14060122>.
- OECD (2022). *Advancing the Entrepreneurial University: Lessons learned from 13 HEInnovate Country Reviews*. Paris: OECD SME and Entrepreneurship Papers.
- Peris-Ortiz, M., Gómez, J., Merigó-Lindahl, J., & Rueda-Armengot, C. (2017). *Entrepreneurial Universities: Exploring the Academic and Innovative Dimensions of Entrepreneurship in Higher Education*. Cham: Springer, DOI: 10.1007/978-3-319-47949-1.
- Sam, C., & van der Sijde, P. (2014). Understanding the concept of the entrepreneurial university from the perspective of higher education models. *Higher Education*, 68: 891–908, <https://doi.org/10.1007/s10734-014-9750-0>.
- Samo, A., & Huda, N. (2019). Triple Helix and academic entrepreneurial intention: understanding motivating factors for academic spin-off among young researchers. *Journal of Global Entrepreneurship Research*, 9(12), <https://doi.org/10.1186/s40497-018-0121-7>.
- Seggie, S. (2021). Understanding the entrepreneurial university. Retrieved October 14, 2024, from <https://knowledge.essec.edu/en/society/understanding-entrepreneurial-university.html>
- Simut, R., Simut, C., Badulescu, D., & Badulescu, A. (2024). Artificial Intelligence and the Modelling of Teachers' Competencies. *Amfiteatru Economic*, 26(65): 181-200, DOI: <https://doi.org/10.24818/EA/2024/65/181>.
- Trequattrini, R., Lombardi, R., Lardo, A., & Cuzzo, B. (2018). The Impact of Entrepreneurial Universities on Regional Growth: a Local Intellectual Capital Perspective. *Journal of Knowledge Economy*, 9: 199–211, <https://doi.org/10.1007/s13132-015-0334-8>.
- USNews (2023). Best Undergraduate Entrepreneurship Programs. Retrieved 11 29, 2024, from https://www.usnews.com/best-colleges/rankings/business-entrepreneurship?_sort=rank&_sortDirection=asc
- World Economic Forum (2020). Universities should support more student entrepreneurs. Here's why – and how. Retrieved October 12, 2024, from <https://www.weforum.org/agenda/2020/10/universities-should-support-more-student-entrepreneurs/>