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Comparative Analysis Between Three Universities on Southern Brazil on Teaching Entrepreneurship and Innovation

Análise Comparativa entre Três Universidades do Sul do Brasil sobre o Ensino de Empreendedorismo e Inovação

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Abstract

The study aimed to compare the presence of entrepreneurship and innovation courses at the State University of the Center-West (Unicentro), the Federal University of Santa Catarina (UFSC), and the Federal University of Rio Grande do Sul (UFRGS), relating their availability to institutional innovation indicators. This applied and descriptive research was conducted through documentary analysis of undergraduate curricula and pedagogical projects from 2009 to 2022, as well as patent records. The results showed that the three universities concentrate such courses mainly in areas related to Economics, Management, and Technology, while Education and Arts programs showed limited or no presence of these contents. It was also found that UFRGS achieved the highest number of patents per course, followed by UFSC and Unicentro. The findings indicate that the mere inclusion of courses does not ensure high innovation performance, highlighting the need for articulation between teaching, research, and institutional policies. As a perspective, the study suggests expanding the scope to other regions and assessing the effectiveness of adopted methodologies by integrating teaching, outreach, and social innovation.

Keywords: Entrepreneurship; Innovation; Higher Education.

Resumo

O estudo teve como objetivo comparar a presença de disciplinas de empreendedorismo e inovação na Universidade Estadual do Centro-Oeste (Unicentro), na Universidade Federal de Santa Catarina (UFSC) e na Universidade Federal do Rio Grande do Sul (UFRGS), relacionando essa oferta com indicadores institucionais de inovação. A pesquisa, de caráter aplicado e descritivo, foi conduzida a partir de análise documental de currículos de graduação e projetos pedagógicos de curso, considerando o período de 2009 a 2022, e registros de patentes. Os resultados mostraram que as três universidades concentram disciplinas principalmente em áreas ligadas à Economia, à Gestão e às Tecnologias, enquanto cursos de Licenciatura e Artes apresentaram presença reduzida ou inexistente desses conteúdos. Constatou-se, ainda, maior desempenho da UFRGS no índice de patentes por curso, seguida pela UFSC e pela Unicentro. As evidências indicam que a simples oferta de disciplinas não garante desempenho elevado em inovação, sendo necessária a articulação entre ensino, pesquisa e políticas institucionais. Como perspectiva, sugere-se ampliar o escopo para outras regiões e avaliar a efetividade das metodologias adotadas, integrando ensino, extensão e inovação social.

Palavras-chave: Empreendedorismo; Inovação; Ensino Superior.

Technological Areas: Innovation, Entrepreneurship, and Entrepreneurship Education.

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1 Introduction

In the contemporary landscape, characterized by global interconnectedness and the rapid advancement of technology, entrepreneurship stands out as one of the primary drivers of economic development and social transformation. In countries where effective support for entrepreneurship is present, greater dynamism is observed in business creation, innovation adoption, and the enhancement of market competitiveness (Dornelas, 2005).

According to Drucker (2017), innovation constitutes the entrepreneur's central tool, serving as a means of transforming change into concrete opportunities for new businesses or services. This process is not limited to the spontaneous application of ideas but can be understood as a discipline that requires continuous learning and systematic practice. In this regard, Tidd, Bessant, and Pavitt (2008, p. 486) emphasize that innovation is closely associated with learning and change, involving disruptions, substantial costs, and inherent risks.

Within this context, academia plays a strategic role, as it is within universities that creative and critical individuals are developed, capable of identifying opportunities and transforming them into sustainable and innovative ventures (Dornelas, 2005). Fostering an entrepreneurial mindset therefore contributes not only to improving the quality of higher education but also to promoting the country's economic and technological development (Dolabela, 2003).

As highlighted by Dolabela (2003), the incorporation of entrepreneurship into higher education broadens perspectives beyond technical training, encouraging dynamic, inventive, and original attitudes that are essential for social progress. Achieving this objective requires the adoption of flexible curricula and active learning methodologies that promote the development of key competencies such as autonomy, analytical reasoning, and problem-solving skills (Luz *et al*., 2025). Complementing this perspective, Kuratko (2005) argues that entrepreneurship education should extend beyond traditional content delivery, preparing students to act as agents of change within their professional and social environments.

In the Brazilian context, a study conducted by the Endeavor Institute (2016) in partnership with the Brazilian Micro and Small Business Support Service (SEBRAE) revealed the presence of entrepreneurship-related courses in several universities, although these offerings were predominantly concentrated within Business Administration and Economics programs and, to a lesser extent, within the Biological and Exact Sciences fields (Oliveira & Holanda Mariano, 2018).

In most of the institutions analyzed, these courses are offered as electives and are often focused on business plan development. However, a gradual shift in this model has been observed, with increasing emphasis on entrepreneurial behavior and innovation-oriented content (Oliveira & Holanda Mariano, 2018).

This study aimed to analyze the presence of entrepreneurship- and innovation-related courses within undergraduate programs at the State University of Central-West (UNICENTRO), the Federal University of Santa Catarina (UFSC), and the Federal University of Rio Grande do Sul (UFRGS), examining how this curricular integration relates to institutional innovation indicators, particularly patent registrations.

The study sought to identify areas with greater and lesser curricular coverage, highlighting existing gaps and potential strengths. Furthermore, it aimed to understand how entrepreneurial education may contribute to strengthening academic quality and fostering the technological and social advancement of the universities under investigation.

1.1 Entrepreneurship

The term entrepreneurship, derived from the English word *entrepreneurship*, originates from the Latin *imprehender*, dating back to the fifteenth century, with meanings associated with "undertaking a laborious and difficult enterprise" or "putting into execution" (Cunha, 2004; Cruz Júnior *et al*., 2006). The word *entrepreneur* emerged in France during the twelfth century and initially referred to an individual who encouraged or instigated disputes (Vérin, 1982).

According to Vale (2014), the concept of entrepreneurship evolved primarily within the field of economics, first in France and later in England, where English-language studies gained greater prominence. The author highlights the diversity of theoretical perspectives and the gradual integration of the entrepreneur as a central figure in both economic and social contexts.

During the sixteenth century, the term came to designate individuals responsible for leading military operations. It was only at the end of the seventeenth century and the beginning of the eighteenth century that it acquired the meaning of a creator and leader of projects or ventures (Schmidt & Bohnenberger, 2008).

In this regard, Drucker (1997) defines the entrepreneur as an individual who is receptive to novelty, inherently innovative, attentive to change, and capable of transforming change into new opportunities. The author emphasizes that the concept of entrepreneurship evolves alongside economic and social transformations and is therefore continuously reinterpreted.

The understanding of entrepreneurship, whether from an economic or social perspective, has changed considerably over the centuries. Since its earliest conceptualizations, the term has been associated with different roles, adapting to the political, economic, and cultural contexts of each historical period (Sarkar, 2008). According to the author, this evolution reflects the transition of the entrepreneur from an executor of governmental or military plans to an agent of change, innovation, and value creation.

Dornelas (2019, 2021) describes entrepreneurship as the articulation between individuals and methods that, when operating together, transform ideas into opportunities and opportunities into sustainable ventures that generate benefits for both the market and society. The author notes that entrepreneurship is not limited to the creation of new businesses; rather, it involves identifying opportunities, introducing innovations, and generating economic and social impact while managing the risks inherent to these activities.

Within the public sector, the dissemination of an entrepreneurial culture represents a strategic element for strengthening public management. Public administration must create conditions that encourage creativity, innovation, and the continuous improvement of management practices (Martins-Pereira, 2007; Pereira, 2009).

For Drucker (1987, 2002), innovation is the entrepreneur's specific instrument because it enables the transformation of change into opportunities for new businesses or services. According to the author, innovation is a discipline that can be taught and practiced, provided that sources of innovation and signals of opportunity are intentionally identified and explored.

Drucker (1987) also highlights the contribution of Schumpeter (1934, 1950), who linked entrepreneurship to economic development and demonstrated how innovations introduce discontinuities into economic cycles. From this perspective, the entrepreneur's role is grounded in three key dimensions: (i) innovation; (ii) the willingness to assume risks and manage economic uncertainty; and (iii) the ability to challenge established paradigms.

Thus, contemporary entrepreneurship is not limited to business creation but represents a driving force for innovation, sustainable development, and social transformation (Silva; Reis; Sturion, 2012; Reis; Almeida, 2019, p. 78).

1.2 Inovation

Innovation means creating, renewing, reinventing, and adding value to products or services. It is associated with change and the continuous improvement of existing solutions and is widely regarded as one of the primary drivers of competitiveness (Schumpeter, 1934). According to the author, innovation serves as the engine of economic development by introducing new combinations of resources capable of transforming markets.

In this regard, Drucker (1987, 2017) argues that innovation constitutes the specific instrument of entrepreneurship, functioning as the means through which change and opportunities are exploited to create new businesses or services. Organizations and countries that innovate more intensively tend to achieve higher levels of growth, generating effective solutions to both longstanding and emerging challenges.

Historian Benoît Godin highlights that innovation began to emerge as a concept closely associated with science and industry during the nineteenth century, in parallel with the advances of the Industrial Revolution. At that time, however, public discourse primarily emphasized the notion of "invention," particularly technical invention. According to Bok, Godin, and Vinck (2017), several factors contributed to the growing prestige of invention, including the expansion of consumer culture, the increasing number of patent registrations, and government investments in research laboratories.

Schumpeter, an Austrian economist, former Minister of Finance, and professor at Harvard University, was among the first scholars to systematically theorize innovation. He is widely recognized for introducing the concept of "creative destruction," whereby entrepreneurs, through innovation, disrupt market equilibrium and drive economic development (Schumpeter, 1934).

The author further expands this perspective by arguing that entrepreneurs are those who transform the existing economic order through the introduction of new products and services, the creation of new forms of management, or the exploitation of new resources and technologies. In this process, entrepreneurs embody the essence of innovation, rendering previous practices obsolete (Schumpeter, 1950).

According to Tidd, Bessant, and Pavitt (2008), successful innovation consists of creating value from new ideas, whether through the development of business models, new services, or improvements in organizational processes. The authors also emphasize the importance of ensuring that the benefits of innovation reach socially vulnerable groups, thereby broadening its impact and promoting inclusion.

Innovation therefore represents a central element of economic and social development, as it stimulates the creation of new ideas, products, processes, and business models, generates competitive advantages for organizations, and fosters technological, scientific, and social progress (Campos, 2022).

1.3 Entrepreneurial and Innovation Education

Entrepreneurship education originated in the United States and was first taught in 1947 by Myles Mace at Harvard Business School (Katz, 2003; Henrique & Cunha, 2008; Lopes, 2010; Oliveira & Holanda Mariano, 2018).

Lopes (2010) notes that the course was created with the objective of providing training for veterans returning from World War II. A few years later, in 1953, Peter Drucker introduced an entrepreneurship course at New York University. In addition to topics related to small businesses, the course incorporated discussions on innovation, an aspect that remains central to entrepreneurship education today.

In Brazil, the integration of entrepreneurship education into university curricula gained prominence in the early 1990s, particularly in technology- and computing-related programs. Dornelas (2005) emphasizes that this movement was associated with federal government initiatives and the need to align higher education with the transformations occurring in the Brazilian economy. Since then, numerous universities have incorporated entrepreneurship-related courses into their curricula.

An important milestone was the launch of the SoftEx 2000 Program by the Brazilian National Council for Scientific and Technological Development (CNPq) in 1993. The program's primary objective was to promote the export of Brazilian software, and one of its strategies involved introducing the course "Information Technology Ventures" into Computer Science, Informatics, and Information Systems programs at higher education institutions across the country (Dolabela, 1998; Oliveira & Holanda Mariano, 2018). According to Dolabela (1998), by 1997 this course was already being offered at 46 Brazilian universities.

The need for educational innovation has accompanied this process. According to Nunes *et al*. (2015, p. 54), educational innovation encompasses any "structured and relatively new pedagogical action that promotes improvements in the teaching and learning process while considering different educational contexts and the interests and needs of students." Nevertheless, a study conducted by Endeavor (2016) suggests that many Higher Education Institutions (HEIs) still do not fully exploit their potential to inspire ambition and foster innovation among university entrepreneurs.

Within this context, Becker, Severo, and Guimarães (2017) argue that entrepreneurship and innovation education can contribute to the development of entrepreneurial competencies, encouraging business creation and improving organizational management, in line with earlier reflections by Blenker *et al*. (2008).

Furthermore, entrepreneurship may serve as a viable career alternative for university students, generating employment and income opportunities for society (Raimi, 2015). More importantly, when combined with innovation, entrepreneurship creates new opportunities for organizations while generating social and environmental benefits (Dabbagh & Menascé, 2013; Becker, Severo, & Guimarães, 2017).

Accordingly, the present study focuses on a comparative analysis of three universities located in Southern Brazil, examining how entrepreneurship and innovation are incorporated into their curricula as academic disciplines and assessing how innovation influences these institutions' positions in national academic quality rankings.

2 Methodology

For the present study, three universities located in Southern Brazil were selected: the State University of Central-West (UNICENTRO), the Federal University of Rio Grande do Sul (UFRGS), and the Federal University of Santa Catarina (UFSC). The selection criterion was based on the University Ranking by Folha (RUF) (Educa Brasil, 2019), specifically the "Innovation" indicator, with one representative institution chosen from each state in the region: Paraná, Rio Grande do Sul, and Santa Catarina.

The University Ranking by Folha (RUF) is an annual higher education assessment conducted by *Folha de S. Paulo* since 2012. Its methodology is grounded in the parameters used by international university rankings and is supported by approximately 400 references reviewed in the literature on university evaluation. The ranking includes 197 institutions accredited as universities by the Brazilian Ministry of Education (MEC), both public and private, and is based on five indicators: Research, Internationalization, Innovation, Teaching, and Market Performance (Educa Brasil, 2018).

The study focused primarily on UNICENTRO, located in the state of Paraná, while establishing a comparison with the other universities regarding entrepreneurship and innovation education. To this end, documentary research was conducted using institutional websites, particularly the portal of the Office of the Provost for Undergraduate Education (PROEN) at UNICENTRO, covering the period from 2009 to 2022. Curricular components, pedagogical projects, curriculum matrices, course syllabi, and other available materials were examined. The same methodology was applied to the institutional portals of UFRGS and UFSC.

From a methodological perspective, the investigation is classified as applied research. Regarding its objectives, it is characterized as exploratory and descriptive, employing a qualitative approach. Concerning technical procedures, the study was conducted as both bibliographic research

and a case study, considering the social unit, namely the university, in its entirety in order to understand it within its own context (Gil, 2017).

The documentary research was based on the analysis of institutional data and documents that had not previously been systematized or published. Institutional reports, academic records, and specialized databases were examined.

The literature review focused on topics related to intellectual property, entrepreneurship, innovation, entrepreneurship education, and entrepreneurship teaching in universities. The survey included books, scientific articles, national and international journals, electronic sources, and official databases, such as the patent database of the Brazilian National Institute of Industrial Property (INPI) and the Orbit platform.

3 Results and Discussion

The results are presented first by university and subsequently in a comparative format among the three institutions analyzed. Based on the evaluation of pedagogical projects and curricula, the number of courses containing entrepreneurship and innovation content was identified for each undergraduate program, and the data were aggregated by field of knowledge.

It should be noted that each university adopts its own classification of academic fields. These institutional classifications were maintained in the present study rather than being converted to the official classification system of the Brazilian National Council for Scientific and Technological Development (CNPq).

Based on the indicators of the University Ranking by Folha (RUF), institutional performance in innovation and entrepreneurship was examined for the period between 2009 and 2022. However, the RUF does not provide detailed information regarding the number of courses specifically dedicated to these areas. Consequently, the data used in this study were derived from a documentary analysis of institutional websites and academic programs, as presented in the following tables.

In the case of UNICENTRO, located in the state of Paraná, a total of 41 undergraduate programs and 8,740 students were identified, with 69 course offerings related to entrepreneurship and innovation during the study period. The results reveal a greater concentration within the field of Social and Applied Sciences, which reached an average of 3.7 courses per academic program (Table 1). In contrast, fields such as Humanities, Languages, and Arts exhibited almost no presence of entrepreneurship- or innovation-related courses, particularly within teacher education programs, where no formal courses addressing these topics were identified up to 2025. Nevertheless, the university maintains institutional initiatives aimed at promoting innovation.

At UFSC, a university located in the state of Santa Catarina with 31,903 undergraduate students and 83 academic programs, 120 course offerings related to entrepreneurship and innovation were identified. The highest concentration was found in the field of Educational Sciences, which presented an average of four courses per academic program (Table 2). This category includes programs such as Library Science, Archival Science, Rural Education, Information Science, and Information and Communication Technologies, while Pedagogy was the only program within this field that did not offer a course related to entrepreneurship or innovation. In the fields of Philosophy and Human Sciences and Physical and Mathematical Sciences, which are predominantly composed of teacher education programs, the ratios were only 0.2 and 0.3 courses per program, respectively. These findings reveal a significant gap in the entrepreneurial and innovation-related training of future educators.

Table 1 – UNICENTRO Data and Course-to-Program Ratios by Field of Knowledge (2009-2022)

Area	Number of Programs	Number of Courses (2009-2022)	Course-to-Program Ratio (2009-2022)
Social and Applied Sciences	7	26	3,7
Agricultural and Environmental Sciences	7	9	1.3
Exact Sciences and Technology	6	7	1.2
Humanities, Languages, and Arts	13	4	0.3
Health Sciences	8	11	1.4
Grand Total	41	57	1.4

Source: Prepared by the authors (2022)

Table 2 – UFSC Data and Course-to-Program Ratios by Field of Knowledge (2009-2022)

Area	Number of Programs	Number of Courses (2009-2022)	Course-to-Program Ratio (2009-2022)
Agricultural Sciences	7	11	1.6
Communication and Expression	14	10	0.7
Health Sciences	7	4	0.6
Educational Sciences	6	24	4.0
Philosophy and Human Sciences	9	2	0.2
Physical and Mathematical Sciences	6	2	0.3
Socioeconomic Sciences	6	13	2.2
Technological Sciences	28	67	2.4
Grand Total	83	133	1.6

Source: Prepared by the authors (2022)

At UFRGS, located in the state of Rio Grande do Sul, a total of 83 undergraduate programs, 31,894 students, and 97 entrepreneurship- and innovation-related course offerings were identified. The field of Economics, Management, and Business showed the highest concentration, with at least one course per academic program (Table 3). In contrast, the Humanities and Social Sciences fields, where most teacher education programs are concentrated, exhibited ratios close to zero. Furthermore, no entrepreneurship- or innovation-related courses were identified within the Arts field. This absence is particularly noteworthy given that professionals in the arts and cultural sectors increasingly depend on innovative management models and entrepreneurial capabilities to establish and sustain their careers.

In addition to the curricular analysis, a survey was conducted using the Orbit.com database to assess innovation performance through the number of active and inactive patents. The results showed that UFRGS achieved the highest performance, with a ratio of 7.34 patents per academic program, followed by UFSC with 4.87 and UNICENTRO with 1.95 (Table 4).

The comparative analysis reveals significant differences in how the universities under investigation incorporate entrepreneurship and innovation content into their undergraduate curricula and how these efforts are reflected in technological output indicators.

Table 3 – UFRGS Data and Indices: Course/Subject by Area (2009–2022)

Area	Number of Programs	Number of Courses (2009-2022)	Course-to-Program Ratio (2009-2022)
Arts	5	0	0.0
Biological, Natural, and Agricultural Sciences	16	9	0.6
Communication and Information	7	6	0.9
Economics, Management, and Business	6	6	1.0
Engineering and Architecture	21	15	0.7
Exact and Technological Sciences	6	2	0.3
Humanities and Social Sciences	12	1	0.1
Health Sciences	10	9	0.9
Grand Total	83	48	0.6

Source: Prepared by the authors (2022)

Table 4 – Number of Patents by University and Patent-to-Program Ratio

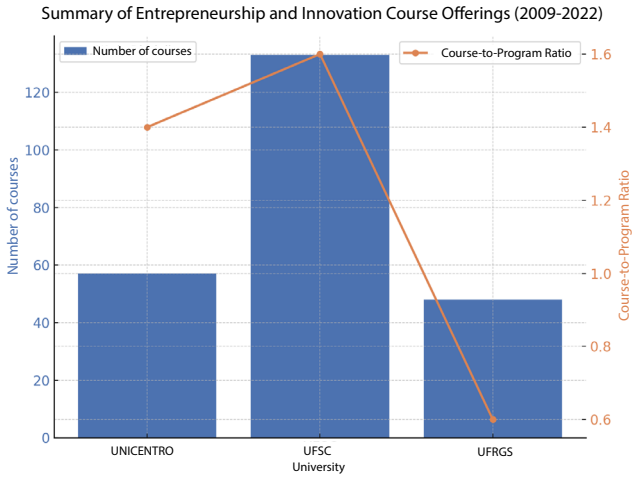
PATENTS	UNICENTRO	UFSC	UFRGS
Number of Patent Applications	80	404	609
Patent-to-Program Ratio	*1.95*	*4.87*	*7.34*

Source: Questel (2022)

As shown in Figure 1, UFSC presents the highest absolute number of entrepreneurship- and innovation-related courses (133), followed by UNICENTRO (57) and UFRGS (48). When the course-to-program ratio is considered, UFSC maintains a slight advantage (1.6) over UNICENTRO (1.4), whereas UFRGS records a lower value (0.6). These findings suggest that UFSC adopts a more consistent policy of integrating such courses across different fields of knowledge, while UNICENTRO demonstrates a relevant effort that remains concentrated in specific programs. UFRGS, despite its size and institutional prominence, exhibits a comparatively lower level of curricular integration.

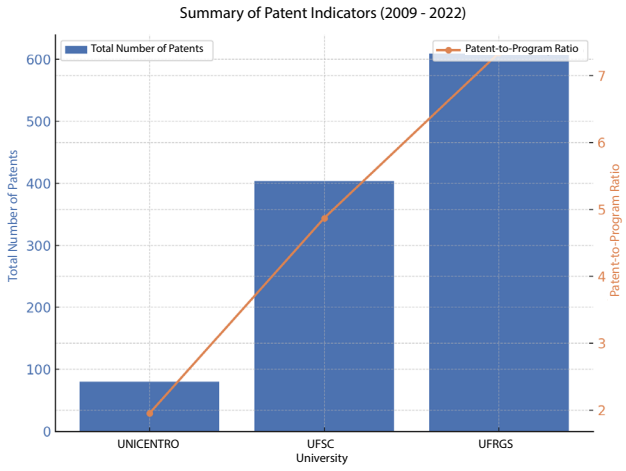
Figure 2, which presents innovation performance as measured by patent filings, reveals a distinct scenario. UFRGS stands out with 609 patent registrations during the study period, achieving a ratio of 7.34 patents per academic program and substantially outperforming the other institutions. UFSC ranks second, with 404 patent registrations and a ratio of 4.87, while UNICENTRO ranks third, with 80 registrations and a ratio of 1.95. These results indicate that although UFSC is the university offering the largest number of entrepreneurship- and innovation-related courses, UFRGS is the institution that most effectively translates its initiatives into technological output.

Figure 1 – Summary of Course Offering Ratios by University



Source: Prepared by the authors (2022)

Figure 2 – Summary of the Patent-to-Program Ratio



Source: Prepared by the authors (2022)

The comparison between the two indicators suggests that the mere availability of entrepreneurship and innovation courses does not automatically translate into high innovation performance. In the case of UFRGS, the relatively low number of courses is offset by a well-established institutional structure, characterized by the strong presence of Technology Innovation Centers (NITs) and policies that actively encourage applied research. UFSC, in turn, demonstrates a clear effort to expand entrepreneurship education within its undergraduate programs, which may generate positive effects on its innovation indicators in the medium term. UNICENTRO, on the other hand, presents more modest results in both dimensions, highlighting the need for greater curricular integration and stronger institutional policies aimed at fostering an entrepreneurial and innovation-oriented culture.

Thus, the combined analysis of the figures demonstrates that the development of innovation within the academic environment depends not only on the curricular presence of entrepreneurship but also on the articulation among teaching, research, and institutional support structures.

The findings also reveal disparities in the incorporation of entrepreneurship and innovation themes across different fields of knowledge. These subjects are more prevalent in programs related to economics, business administration, and technology, while they are nearly absent from teacher education programs and the arts.

This gap highlights the need for curricular revision to more effectively incorporate content that fosters creativity, initiative, and innovative capacity across all fields, particularly in teacher education. Such measures may broaden the social impact of universities while simultaneously enhancing institutional performance in the teaching and innovation indicators employed by rankings such as the University Ranking by Folha (RUF).

4 Final Considerations

The investigation made it possible to identify distinct patterns in the incorporation of entrepreneurship and innovation into the curricula of the universities analyzed, as well as in their technological output indicators. Entrepreneurship- and innovation-related courses were found to be concentrated primarily within programs in the fields of Economics, Management, and Technology, while remaining scarce or entirely absent in teacher education and arts programs. This gap highlights the need to broaden curricular approaches so as to include entrepreneurial competencies in fields traditionally distant from business-oriented perspectives, yet equally important for fostering critical thinking and innovation.

The findings also revealed that UFRGS, despite having a lower course-to-program ratio, achieved the strongest performance in terms of patent production. This suggests that institutional innovation is not determined solely by curricular offerings but also depends on the integration of teaching, research, and support structures such as Technology Innovation Centers (NITs). UFSC stood out for its broader curricular integration of entrepreneurship and innovation, demonstrating a commitment to strengthening entrepreneurial education across different academic programs, which may lead to future improvements in innovation indicators. UNICENTRO, in turn, demonstrated isolated initiatives but still requires a more robust integration between institutional policies and pedagogical strategies.

Therefore, the study confirms that the inclusion of entrepreneurship and innovation content in undergraduate programs constitutes a strategic element for strengthening the quality of academic education and contributing to technological and social development. Expanding these subjects into underrepresented fields, particularly teacher education programs, represents both a challenge and an opportunity for universities to enhance their impact within the national innovation ecosystem.

The study further reinforces that entrepreneurship and innovation are strategic pillars for strengthening the quality of higher education in Brazil, with direct implications for professional training and technological and economic advancement. Their incorporation into university curricula, including teacher education programs, should be viewed not merely as a complementary component but as a central element of academic formation, capable of preparing professionals to develop innovative solutions, create employment opportunities, and act as agents of social transformation.

5 Future Perspectives

The results obtained point to important directions for future research and for the improvement of institutional practices. A first avenue consists of expanding the scope of the study to include universities from other regions of Brazil, thereby enabling a more comprehensive assessment of the integration of entrepreneurship and innovation courses within Brazilian higher education. Such an expansion may reveal regional patterns and highlight asymmetries in the ways different institutions address these themes.

Another promising line of investigation concerns the evaluation of the effectiveness of existing courses, taking into account not only their presence within academic curricula but also the teaching methodologies employed, the pedagogical resources utilized, and the tangible outcomes achieved in the development of entrepreneurial competencies. This type of analysis may contribute to the identification of best practices that can be replicated across different institutional contexts.

Finally, it is important to further explore the relationship between entrepreneurship education and innovation outcomes in a broader sense, incorporating not only patent-related indicators but also other measures of social and technological impact. The integration of teaching, research, and extension activities, combined with institutional policies that encourage innovation and entrepreneurship, is likely to strengthen entrepreneurial culture and enhance universities' capacity to address contemporary challenges and generate transformative societal impact.

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