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An Equity, Diversity, and Inclusion Approach in Entrepreneurial and Innovation Ecosystems

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In this paper, we intend to verify if more inclusive spin-offs tend to obtain better performance or access to funding sources. Thus, we have analyzed the spin-off companies of the State University of Campinas (Unicamp) in Brazil. The Inova Agency, i.e., the technology transfer office of Unicamp, provided the data concerning all university spin-offs. The outcomes indicate an unbalanced sample in terms of gender, and the same is expected regarding race and socioeconomic profile. We hope this study may serve as a basis for policymakers to better direct efforts to create and base policies that strengthen inclusion in scientific activities, especially those related to university-related entrepreneurial activities.

1. Introduction

Much has been said about gender inclusiveness in academic research, especially in innovation and entrepreneurship-related activities connected to universities (Sugimoto et al., 2015, Ni et al., 2021, Larivière et al., 2013; Østergaard, Timmermans & Kristinsson, 2011). Even though the inclusion of individuals of different gender, races, and backgrounds is seen as a way to improve the overall quality of science (Curry et al., 2020; Hatch & Curry, 2020; Larivière et al., 2013), the participation of females and non-whites in university spin-offs remain less representative.

For that matter, equity, diversity, and inclusion, represented mainly by the acronym EDI, entered the agenda of researchers focusing on the lack of inclusiveness in academic research and entrepreneurial activities (Curry et al., 2020; Dewidar, Elmostekawy & Welch, 2022). To concomitantly analyze gender elements and entrepreneurial activities, in this article, we resort to data on university spin-offs to assess the gender, race, and socioeconomic profile of the founders and partners of these companies. Analyzing such indicators will enable us to verify if more inclusive spin-offs tend to obtain better performance or access to funding sources.

2. Conceptual literature

University spin-offs are essential mechanisms to disseminate university research results (Liboreiro, Corradi & Rapini, 2022) and thus bridge the gap with larger companies to commercialize the technology produced in the academic environment. These companies contribute to the absorptive capacity of larger firms (Liboreiro, Corradi & Rapini, 2022) and strengthen entrepreneurship and innovation ecosystems. Although the importance attributed to university-spin offs, their relevance in boosting regional economic development is still recent (Bagchi-Sen, Baines & Smith, 2022) and presents itself as a research gap.

If university spin-offs are an underresearched topic, gender equity and gap in such organizations are even more underresearched. Nevertheless, Lauto, Salvador and Visintin (2022), in an attempt to investigate the role of gender in raising finance in spin-offs, assert

there is a negative bias of investors against female entrepreneurs. Given such a gender gap in entrepreneurial finance, parent universities are believed to have the power to balance these inequalities.

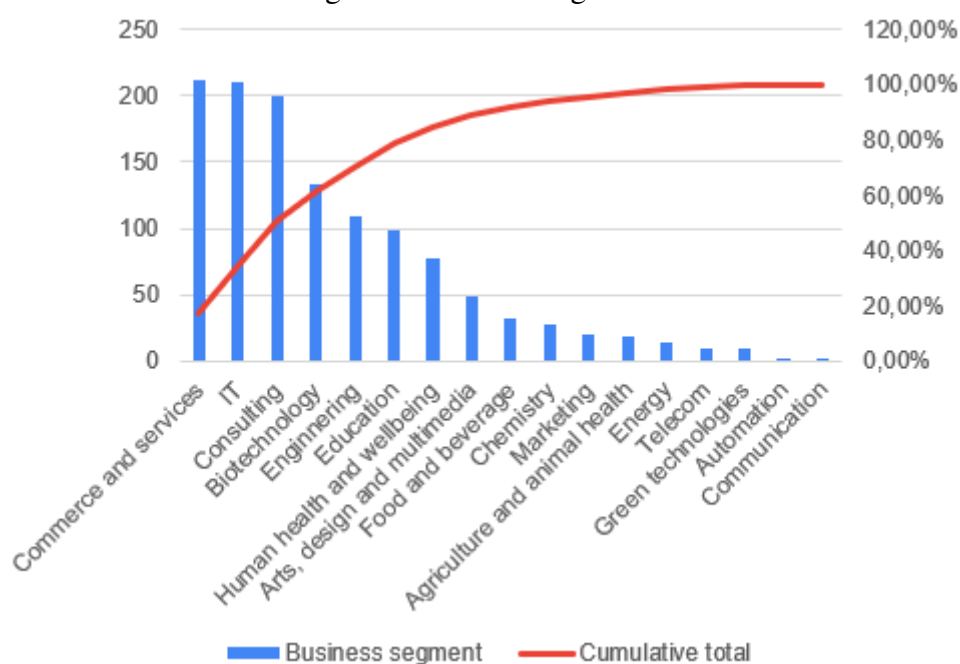
3. Methodology

To carry out this study, we have analyzed the spin-off companies of the State University of Campinas (Unicamp) in Brazil. The Inova Agency, i.e., the technology transfer office of Unicamp, provided the data concerning all spin-off companies. Several statistical techniques will be used to establish possible relationships between gender and spin-off performance.

4. Preliminary results

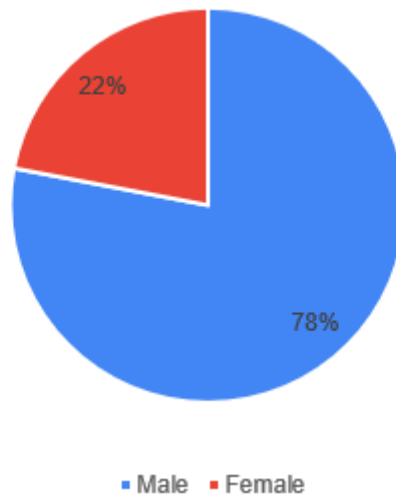
We assessed the data concerning 1,351 spin-off companies, which operate in 17 different sectors, of which Commerce and services (212 companies), IT (210 companies), Consulting (199 companies), Biotechnology (133 companies), and Engineering (110 companies) account for approximately 70% of the sample. Communication was the least representative sector, as only one company operates in this segment, followed by Automation, which comprises only two companies. Green technologies and Telecom were both represented by nine companies each. The companies operating in the other segments range from 15 to 99.

Figure 1. Business segments.

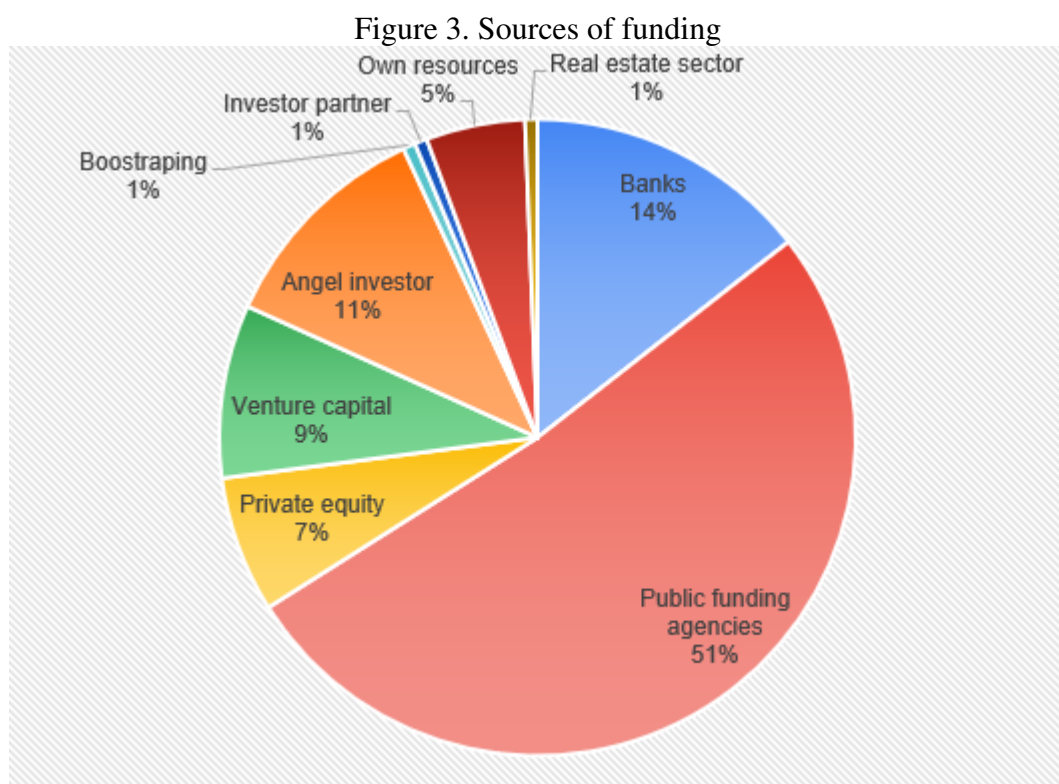


Out of the 1,741 partners identified in the sample, almost 78% are males, which shows a lack of gender equity in the university spin-offs. Out of the males identified in the sample, 297, or 21.9%, are not affiliated with the State University of Campinas. Concerning the females, 97, or 25.3%, are not affiliated with the university. Inova Agency needed further information on race and age to delve into EDI (Equity, Diversity, and Inclusion) indicators for the same analysis.

Figure 2. Gender of the sample.



Of the companies that mentioned using funding for enterprise development (556), 397 classified such sources as “other,” however, without specifying which. Therefore, for the elaboration of Figure 3, we have selected only those who explicitly mentioned the type of funding utilized in the venture. As clearly indicated in Figure 3, Public funding agencies play a relevant role (51%) in financing the spin-offs mapped in our sample. Private and state-owned banks account for 14% of the sample and can also be considered relevant players in funding entrepreneurial activities. Funding from bootstrapping, investor partners, and the real estate sector were not represented in the sample, as each counted only on one observation.



5. Preliminary conclusions

Interestingly, an initial data screening indicates that public investments were irrelevant to the consolidation of this specific ecosystem. However, there is a positive relationship between public investment and the percentage of females in spin-off companies. Therefore, companies funded by public agencies tend to have more woman partners. If, on the one hand, companies receiving public investment do not have a greater propensity to collaborate with Unicamp, they are more prone to have women on their boards. The preliminary results indicate an unbalanced sample in terms of gender, and the same is expected regarding race and socioeconomic profile. We hope this study may serve as a basis for policymakers to better direct efforts to create and base policies that strengthen inclusion in scientific activities, especially those related to university-related entrepreneurial activities.

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Open science practices

Inova, the technology transfer office of the State University of Campinas, provided the data used in this article for quantitative analysis. The data has yet to be made public. It was necessary to sign a confidentiality document, which prohibited the disclosure of any data passed on to the researchers. Therefore, Karen E F Pinto, as the principal author of this study, obtained unique access to the information brought in this research.

Author contributions

Karen E F Pinto – Conceptualization, investigation, formal analysis, methodology, writing original draft, writing review and editing.

Sergio Robles Reis de Queiroz – Conceptualization, supervision, Writing – review & editing

Bruno Brandão Fischer – Conceptualization, investigation, writing original draft, writing review and editing.

Yohanna Juk – Writing original draft, methodology, writing review and editing.

Vanessa Avanci – Literature review, writing review and editing.

Competing interests

The authors declare no competing interests.

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