

Chapter 6

Do Engineering Students Intend to Be Entrepreneurs?

A Case Study From the University of Minho, Portugal

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ABSTRACT

In Portugal, the total early-stage entrepreneurial activity (TEA) suggests an imbalance between the entrepreneur gender, with occasional advances and setbacks. Given the importance of the promotion of entrepreneurship, the authors propose to explore the gender differences in the entrepreneurial intents of engineering students at the University of Minho, Portugal. Since engineering contributes to innovative technological advances, this research presents the results of a survey administered to 218 engineering students. Analyzing the perspective of planned entrepreneurship according to gender, it is found that there may be differences between male and female students. Therefore, the study suggests reflecting on entrepreneurial education and the recognition of the specificities arising from gender in order to increase the rate of young entrepreneurship. From a practical point of view, the assessment suggests the need for universities to approach entrepreneurial education more flexibly, fostering a focus on the cases and life stories of men and women entrepreneurs.

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1. INTRODUCTION

Over the last few decades, the theme of entrepreneurship has gained importance, largely due to the effects of job creation and improving the standard of living. Cardella et al. (2020) and Ndofirepi (2020) recognize the contribution of entrepreneurship to social and structural change, knowledge development, technological change, competitiveness, and innovation. However, some gender-related problems are also identified, which limit women's inclusion in the labor market. (Freire, 2011). Pinkovetskaia et al. (2019) mention that there are objective problems and subjective problems. Objective problems arise from the difficulty of finding a balance between entrepreneurship and personal life. Subjective problems are the result of social and cultural prejudices as well as institutional, legal, and fiscal gaps in the legislation of many countries.

Another subject of study is entrepreneurship education. Ndofirepi (2020) defines entrepreneurial education as the development of attitudes, behaviors, and abilities that can be applied throughout an individual's career as an entrepreneur. As Indiran et al. (2020) reinforce, entrepreneurship education is important in facilitating the intent to undertake. Galvão et al. (2020) emphasize the relevance of entrepreneurial education for the recognition of business opportunities, stimulation of self-esteem, introspection, knowledge, and the development of business skills. In the development of these entrepreneurship programs, universities have played a key role, and, as Galvão et al. (2020) refer, most universities began to develop relationships and networking interactions with other entities, such as business startups, firms, state institutions, and business associations.

In the study of entrepreneurship, behavioral theory also emerges as an interesting research field for predicting the action around entrepreneurialism. Krueger and Brazeal (1994), Vamvaka et al. (2020), and Indiran et al. (2020) emphasize the Theory of Planned Behavior (Ajzen, 1991) as one of the most used and cited models in behavioral literature. According to this theory, behavior is predicted by the intention to act, and in turn, intention is shaped by three determinants: attitude, subjective norms, and perceived control. When applied to the topic of entrepreneurship, Al-Jubari (2019) reinforces that the stronger these determinants, the greater the entrepreneurial intention.

Portugal is one of the EU's strongest performers in entrepreneurship, with a business ecosystem based on technology startups. (European Commission, 2022, 2023). Portugal increased from 4.5% of TEA in 2010 to 12.9% in 2019 (Kelley et al., 2011; Bosma et al., 2020). On the other hand, Portugal has a score above the EU average for new enterprise births (1.4% versus 1.0%). According to the Startup & Entrepreneurial Ecosystem Report, Portugal 2021 (IDC, 2022), the Portuguese start-up ecosystem is still young when compared to the European average but accounts for more than 1% of the country's GDP. Startup Portugal (2020) reports in the Portuguese startup ecosystem the following key KPIs: 7 unicorns, 2159 startups, and 13% above the average of nº of startups per capita in Europe. The report "The State of Lisbon's Startup Ecosystem 2022" (Dealromm.co, 2022) highlights the startups in Lisbon, the capital of Portugal, as a case of success against the 309 million euros raised by 2022, a growth of 3.2 times that of the year 2021. At the national level, Portugal has strengthened its support structures for entrepreneurship. The entrepreneurial ecosystem is supported by vouchers, dynamic non-governmental organizations, training activities, and the incorporation of entrepreneurship into the educational curriculum (European Commission, 2022).

Nevertheless, when the analysis addresses entrepreneurship and entrepreneur gender, Portugal is no exception, as the comparison of total early-stage entrepreneurial activity (TEA), that is, the proportion of adults between the ages of 18 and 64 who are nascent entrepreneurs or owners of a business, shows that

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