





**ARTICLE** 

# The impact of educational levels on formal and informal entrepreneurship



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#### JEL CLASSIFICATION

L26; M13; I2

## **KEYWORDS**

Formal entrepreneurship; Informal entrepreneurship; Secondary education; Tertiary education; Education enrolment Abstract This paper studies the impact of formal education on entrepreneurship rates. We propose that different levels of education not only vary between each other in terms of their impact, but also according to whether we analysis either formal or informal entrepreneurship. Our results show that tertiary education increases formal entrepreneurship as a consequence of the higher self-confidence, lower perceived risk and enhanced human capital. At the same time, tertiary education also has a negative effect on informal entrepreneurship as it increases awareness of and sensitivity to the possible negative repercussions of this kind of activities. In addition, we show that the impact of secondary education on formal entrepreneurship is positive as well, although in this case the effect on informal entrepreneurship is not significant. Even though secondary education also increases awareness of the potential negative repercussions of informal entrepreneurship, this effect is counteracted by a lack of management skills.

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## Introduction

The concept of entrepreneurship, which encompasses the creation of ideas, companies, and patents as well as the thought process behind these creations, even in cases where they are not put into practice, has been identified by various authors as one of the key components of economic growth and development (Agarwal et al., 2007; Baumol, 2004; Baumol and Strom, 2007; Zacharakis et al., 2000). Entrepreneurship is intimately linked to innovation, growth

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in productivity, competitiveness, economic growth, the creation of employment, and even success at a personal level (Grilo and Thurik, 2005).

Along with the significant increase in rates of entrepreneurship over recent decades, with estimates even as high as 500 million people per year involved in the creation of new firms (Moya, 2008), scholarly interest has also increased notably. On the one hand, it seeks to examine our understanding of this phenomena in greater depth and, on the other, to offer advice and guidance for users and regulators (for a review, see Dimitratos and Jones, 2005; Szyliowicz and Galvin, 2010).

Entrepreneurship is a multidimensional subject, the study of which involves approaches at an individual, regional, sectoral, or, as in this case, at a national level (Wennekers and Thurik, 1999; Davidsson, 2004). Given that a large part of entrepreneurial activity at this level is not explained if only economic variables are considered (Freytag and Thurik, 2007; Uhlaner and Thurik, 2007), this study aims to broaden the analysis, by focusing on the impact of education on entrepreneurship rates. As Coduras et al. (2010) underline, individuals tend to acquire knowledge that can provide entrepreneurs with useful abilities and skills through (especially formal) education. Our study, therefore, contributes to the literature on Institutional Economy (North, 1990), by conducting an in-depth analysis of the impact of education, which is one of the factors that defines social, economic and political interactions within a country, and, by explaining how different educational levels can have very different repercussions for each form of entrepreneurship.

Supported by the results of numerous studies, the mainstream view has traditionally assumed that higher rates of education will lead to higher rates of entrepreneurship (see, for example, Bates, 1995; Reynolds, 1997; Delmar and Davidsson, 2000). However, to the best of our knowledge, there are no studies exploring the particular effect of different educational levels on entrepreneurship rates, distinguishing between formal and informal entrepreneurship. We propose that the effect of each educational level will vary according to whether its impact on either formal or informal entrepreneurship is investigated. This is not only because the determinants of each educational level often differ, but also because each one has its own peculiarities, methods, objectives and resources. Thus, we also contribute to the literature focused on entrepreneurship, by lending attention to the distinction between formal and informal entrepreneurship, and by providing theoretical arguments and empirical evidence that educational levels have different effects on each one of them. To do so, we use multi-country data on enrolment rates in secondary and tertiary education taken from the World Development Indicators of the World Bank and on formal and informal rates of entrepreneurship, taken from the World Bank Group Entrepreneurship Snapshots (WBGES) and the Informal Entrepreneurship Index or IEI, respectively (Dau and Cuervo-Cazurra, 2009).

In particular, our results show that secondary and tertiary education increase formal entrepreneurship as a consequence of the higher self-confidence, lower perceived risk and enhanced human capital (Schultz, 1959; Shane and Venkataraman, 2000; Davidsson and Honig, 2003; DeTienne and Chandler, 2004). By contrast, tertiary education has a

negative effect on informal entrepreneurship as it increases awareness of and sensitivity to the possible negative repercussions of this kind of activities (Gössling, 2003; Bitros and Karayiannis, 2010). However, secondary education does not influence informal entrepreneurship significantly. Even though secondary education also increases awareness of the potential negative repercussions of informal entrepreneurship, this effect is counteracted by a lack of organizational, planning, administrative, bureaucratic, leadership or human resource management skills (Lazear, 2005; Levie and Autio, 2008), forcing some entrepreneurs to join the informal sector as a last resort (Günther and Launov, 2012).

The remainder of this paper is structured as follows. The second section sets out a review of the literature and lays the groundwork for the hypothesis on the impact of different educational levels on formal and informal entrepreneurship rates. The third section describes the methodology used in the empirical section of this study, detailing the dependent, independent and control variables, as well as the multicollinearity diagnosis and the model. The fourth section presents the results and the robustness tests that were applied. Finally, in the fifth section, the principal conclusions are drawn, and the limitations and possible future lines of research are discussed.

# Literature review and hypotheses

## Formal and informal entrepreneurship

As previously stated, entrepreneurship is a complex concept encompassing the creation of ideas, companies, and patents as well as the thought process behind these creations. Literature has traditionally relied on quantifiable variables such as patents and rates of firm creation to measure entrepreneurship. We also adopt this approach and consider entrepreneurship in its functional form as the creation of new firms (Dau and Cuervo-Cazurra, 2009).

Different modalities of entrepreneurship can be distinguished. Formal entrepreneurship refers to the creation of legally registered new firms in a country (Klapper et al., 2007), whereas informal entrepreneurship focuses on those firms that are not legally registered and are largely unregulated (Nystrom, 2008).

Entrepreneurs from developed economies mainly create firms in the formal sector (Ahlstrom and Bruton, 2006; Bruton et al., 2008). Consequently, most studies focus on formal entrepreneurship (Dau and Cuervo-Cazurra, 2009). In addition, the data limitation and the problems to obtain reliable measures about the weight of the informal sector in a given economy, contribute to explain its marginal role in academic research. On the contrary, it must be acknowledged that the informal sector exists, to a greater or lesser extent, in every country (Webb et al., 2013). In fact, it represents more than half of the total economy in some countries, being informal entrepreneurship one of its main components (ILO, 2002; Fiess et al., 2010).

Formal and informal entrepreneurship have considerably divergent characteristics and, likewise, their determinants play a different role in each one (Dau and Cuervo-Cazurra, 2009). It therefore seems reasonable to think that the impact of each educational level on the creation of both formal and informal firms will differ.

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