



## Entrepreneurial innovation: The importance of context



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### ABSTRACT

The purpose of this article and the special issue is to improve our understanding of the theoretical, managerial, and policy implications of entrepreneurial innovation. We accomplish this objective by examining the role of context in stimulating such activity, as well as its impact on the outcomes of entrepreneurial innovation. Our analysis begins by outlining an overarching framework for entrepreneurial innovation and context. With reference to this framework we then compare the attributes of national innovation systems, entrepreneurship and entrepreneurial innovation, and categorize contextual influences on entrepreneurial innovation. We then situate the papers presented in this special issue within this framework. We conclude by outlining an agenda for additional research on this topic, focusing on the relationships between contexts and entrepreneurial innovation and then discuss policy implications, focusing on how public and private actors can meet these challenges.

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### 1. Introduction

Ever since the early work of Schumpeter,<sup>2</sup> the concepts of ‘entrepreneurship’ and ‘innovation’ have been strongly related. Schumpeter famously talked about ‘gales of creative destruction,’ which entrepreneurs unleash by introducing new, radically different products, services, and processes to the marketplace, thereby challenging status quo-preserving industry incumbents. Due to Schumpeter’s ideas, entrepreneurship and innovation have been closely linked in the popular mindset. William Baumol (2002) argued that entrepreneurial innovation was the true source of national competitive advantage. In Baumol’s thinking, entrepreneurs<sup>3</sup> were required for the introduction of novel

ventures that broke with established development paths and undermined established competencies. Consistent with this, Scherer (1980) identified numerous disruptive innovations that were introduced by entrepreneurial firms, such as the electronic calculator, alternating electric current, sound motion pictures, and the turbojet engine. Recent examples of entrepreneurial innovation include biotechnology, the personal computer, and Internet search engines.

Associating entrepreneurship with innovation, many nations, regions, states, and universities have adopted policies to stimulate innovation by entrepreneurial firms, in the hope of facilitating economic growth. Examples of such policies include local, regional, and national initiatives to promote university-based start-ups (Grimaldi et al., 2011). These initiatives include technology-based economic development (e.g., incubators/accelerators), as well as formal government programs, such as the Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) program in the U.S, the Science Enterprise Challenge in the U.K., the “Law on Innovation and Research to Promote the Creation of Innovative Technology Companies” in France (Mustar and Wright, 2010), and ProTon Europe, the European Knowledge Transfer Association, created by the European Commission.

However, although the general public and policy-makers often use the terms interchangeably and even facilitate one in the hope of getting more of the other, innovation is not the same as entrepreneurship. We know that not all entrepreneurs innovate.

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<sup>2</sup> Schumpeter published his ideas originally in German: Schumpeter, J.A. (1912). *Theorie der wirtschaftlichen Entwicklung*, München und Leipzig: Duncker und Humblot. A version of this book was published in English in 1934.

<sup>3</sup> We will use the term “entrepreneur” throughout, but we recognize that entrepreneurship is often a collective action by a team, such as Gates and Allen, Hewlett and Packard, Jobs and Wozniak, Noyce and Moore, Page and Brin etc.

In fact, the majority of new, independent ventures are not innovative at all. The Global Entrepreneurship Monitor survey, which reports primary data from some 80 countries, shows that, on average, only less than 30% of all new ventures reported that their products were new to customers and most of their competitors (Reynolds et al., 2005; Bosma et al., 2009) – and a stricter criterion emphasizing radical novelty would likely result in an even lower percentage. Importantly, the data also indicates that the share of product-innovating and technology-based new ventures varies considerably across countries and, in fact, within nations, from less than 10% to a high of nearly 50%. The real question, then, seems to be not *whether* entrepreneurs innovate, but rather, *when and where* they do so. This question calls attention to the regulating influence of context on innovative activity by entrepreneurs, which is the focus of the current Special Issue.

Given the long-standing theoretical association between entrepreneurship and innovation, the question of contextual influences on entrepreneurial innovation has received surprisingly little attention. The arguably most influential tradition on country-level innovation – the National Systems of Innovation literature – has hardly touched upon the topic. Acs et al. (2014) observed that the core writings of the NSI literature hardly even mention entrepreneurship, and even then, mostly as anecdotal examples or passing references to Schumpeter's 'Mark I' and 'Mark II' models (Dosi et al., 1988; Freeman, 1988; Lundvall, 1992). This is because Schumpeter subsequently changed his mind and started to emphasize the importance of institutionalized structures – such as corporate R&D departments – on innovation over the chaotic and haphazard process managed by entrepreneurs. It was this, Schumpeter's "Mark II" model that came to influence much of the NSI literature, with the consequence that the entrepreneur, and the role (s)he plays in innovation, was largely ignored.<sup>4</sup> Acs et al. (2014) conclude that "... in the institutional tradition of the NSI literature, institutions engender, homogenize, and reinforce individual action: it is a country's institutions that create and disseminate new knowledge and channel it to efficient uses." Thus, individual-level agency and the micro processes of entrepreneurial innovation – and how these are regulated by context – have not been the focus of this literature and thus have been less explored by these authors.

Whereas the innovation literature, and especially, the NSI literature was mostly about structure and institutions, the entrepreneurship literature has been mostly about the individual or the firm (Zahra and Wright, 2011). Yet, as noted above, there is increasing evidence that in entrepreneurship, quality matters. The GEM data suggests that on the basis of self-employment rates, the most entrepreneurial economies in the world would be poor developing nations. In high-income economies, with better supply of high-quality jobs, self-employment rates tend to be lower, yet the aggregate contribution of entrepreneurs to innovation tends to be higher. This contrast again calls attention to how context regulates the micro processes of entrepreneurship innovation. Still, the gap remains: although increased availability of data has spurred comparative entrepreneurship research exploring the effect of country context on the entrepreneurial dynamic, this research stream remains very much in its infancy (Autio and Acs, 2010; Autio et al., 2013b; Bowen and De Clercq, 2008; Levie and Autio, 2011). It is also important to note that entrepreneurial innovation can vary by region within a country (e.g., the San Francisco Bay Area versus Alabama, Beijing versus rural China) and across

industries. That is, both region and industry are important contexts to consider.

This Special Issue addresses the above gap. Its purpose is to improve our understanding of the theoretical, managerial, and policy implications of entrepreneurial innovation by examining the role of context in stimulating the extent and variety of such activity, as well as its impact on outcomes in terms of the types of entrepreneurial innovation and subsequent venture performance (Zahra and Wright, 2011). Although contextual influences on entrepreneurial action have long been acknowledged (Aldrich, 1999; Aldrich and Fiol, 1994; Thornton, 1999; Welter, 2011), research on entrepreneurial action has been dominated by individual-level and dispositional approaches (Shane, 2003; Shane and Venkataraman, 2000; Sorensen, 2007). That is, the primary focus of the academic literature on entrepreneurship has been on the individual.

The associated neglect of contextual influences constitutes a major gap (Zahra and Wright, 2011), since policy action seeks to influence entrepreneurial activity by manipulating the contexts in which individuals choose to act or not (Audretsch et al., 2007). Fig. 1 presents our organizing framework, portraying the interrelationships between contexts, entrepreneurs and entrepreneurial behavior, types of entrepreneurial innovation and performance, which we elaborate. The remainder of this paper is organized as follows. Section 2 elaborates on our comparison of national systems of innovation, entrepreneurship and entrepreneurial innovation. Section 3 introduces a high-level organizing framework to categorize contextual influences on entrepreneurial innovation. Section 4 provides focused summaries of the papers and lessons learned. In Section 5, we outline an agenda for additional research on this topic. In the final section, we conclude by outlining policy implications.

## 2. NSIs, entrepreneurship, and entrepreneurial innovation

Table 1 provides a comparison of national systems of innovation (NSI), entrepreneurship, and entrepreneurial innovation.

The notion of a NSI is one of the most important and most cited concepts in innovation studies (Martin, 2012). Building on several seminal works (e.g., Freeman, 1987, 1995; Lundvall, 1988, 1992; Nelson, 1993), a growing body of literature uses it as a framework to understand both the process of innovation and the differences in innovative performance across countries. In response to the criticism that the national level is heterogeneous both in terms of geography and sectors, the concept has also been extended

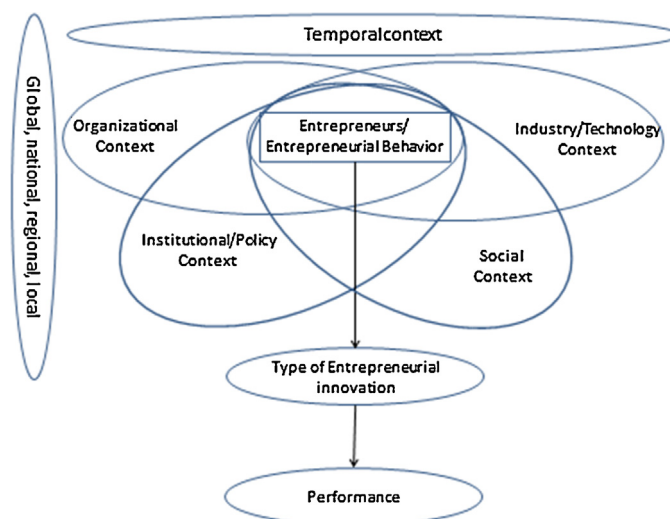


Fig. 1. Framework of entrepreneurial innovation and context.

<sup>4</sup> There were salient exceptions. For example, Kenney (1986) explicitly analyzed the entrepreneurial foundation of the U.S. biotechnology industry in terms of Schumpeter's Mark I and II models. This was then extended in relationship to the operations of the U.S. venture capital industry, see Florida and Kenney (1988).

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