The importance of social entrepreneurship in national systems of innovation - An introduction

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A B S T R A C T

This special issue links "National Systems of Innovation" with "Social Entrepreneurship" to showcase how social entrepreneurship enables the diffusion of new technologies to make a social impact and engender "creative destruction" through the value generating activities of economic actors ranging from individuals, micro-enterprises to large organizations. The special issue calls attention to the importance of social entrepreneurship in the national system of innovation and the need for analysis at multiple levels ranging from micro to macro. It also calls for research on new actors and models for the diffusion of new technologies in sectors where markets do not exist and where the lack of immediate returns inhibits investment by for-profit organizations. While highlighting the growing prominence of social entrepreneurship at the micro level, the special issue also notes the paucity of measures to account for the impact of social entrepreneurship organizations and the need for more research in this area.

1. Introduction

Ongoing interest in innovation for competitive advantage has led to a focus on deliberately building innovation systems at the national, regional, and sectoral levels (Silvestre and Dalcol, 2009). While various factors, most notably, investments in research and development (R & D), are alleged to influence innovation systems, the role of social entrepreneurship in influencing and developing national innovation systems (NIS) has been neglected despite the growing use of such organizations for using new models to diffuse "pro-poor" technologies to Bottom-of-the-Pyramid (BOP) populations that lack access to basic services and are hard to reach using traditional methods (Prahalad, 2007; Silvestre and Silva Neto, 2013). Although, in general, social entrepreneurship has not been associated with innovation per se, many models used for diffusing innovations at the bottom of the pyramid by social entrepreneurship organizations are novel as they forge new pathways to make the innovations available.

A key objective of NIS research (Lundvall, 2007; Nelson, 1993) has been to identify government and firm strategies for industrial and economic growth. Though conventional wisdom suggests that large investments in R & D lead to innovation, most discoveries are not developed (Leaf and Burke, 2005). Moreover, innovations do not necessarily include all segments of the population. What is needed is a catalyst to generate and diffuse innovations. This special issue, therefore, extends the NIS approach by applying it to inclusive development and linking it with social entrepreneurship. It focuses on the role of social entrepreneurs, social enterprises and social entrepreneurship (Dacin et al., 2010; Swanson and Zhang, 2011) in building the innovation ecosystem, in areas where there is great social need and where incentives for provision of products and services by the for-profit sector are lacking and where governments also do not invest (enough) in satisfying the social need. The emphasis on social impact brings a new dimension to the national innovation system literature, highlighting new models, processes and actors for diffusing innovations.

At the same time, the special issue also extends the concept of a national innovation system by building on the concept of "Many visible hands" (Rip and Groen, 2001), envisaging the NIS as an innovation ecosystem with many players operating at various level. Although Oh et al. (2016) critically examine the concept of innovation ecosystems and argue that there is no discernable difference between the terms "innovation system" and "innovation ecosystem", the latter term is used in this special issue for two key reasons. First, it draws from research on ecosystems in the natural environment to highlight that national innovation ecosystems are, analogously, not robust or resilient when large parts of the community are excluded from the system (Ruhl et al., 2007). Thus, envisaging NISs as ecosystems for innovation focuses attention on the issue of socio-economic sustainability in the national "innovation ecosystem". Second, besides inclusion of diverse species, natural ecosystems also focus attention on the importance of interactions among them (Ruhl et al., 2007). The entry of social entrepreneurship organizations (a different type of organization) through their focus on serving BOP communities and enabling interactions, can facilitate inclusion and the diffusion and adoption of innovations by these populations (Prahalad, 2007) and, thereby, the resilience of the innovation ecosystem (Ruhl et al., 2007). Social entrepreneurship is, therefore, of critical importance as a mechanism for enabling the socio-economic sustainability of the "innovation ecosystem". However, without attention to

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ensuring that institutional mechanisms are in place (Surie, 2017), establishing the innovation ecosystem may be difficult. For example, in their paper on the diffusion of toilets as an innovation in villages Ramani et al. (2016) find that lack of attention to training, financing, or maintenance services may lead to abandonment of the innovation by users, and, consequently, inhibit the formation of an ecosystem for the innovation (Surie, 2017).

Viewing NISs as innovation ecosystems also suggests that the entry of a new type of organization (such as social entrepreneurship organizations) requires a reconfiguration in other parts of the system and highlights the importance of linkages and interactions among diverse types of organizations (Surie, 2017). The social entrepreneur, social enterprise or social entrepreneurship processes (Swanson and Zhang, 2011) act as catalysts by bringing new resources (including knowledge) into the system through their links and interactions with other types of organizations. For example, financing is usually provided via grants, loans or subsidies by the government, not-for-profit foundations and international development and humanitarian organizations among others.

At the macro level, social entrepreneurship can be facilitated through new institutions and policies that favor the entry of new players. Moreover, by catalyzing social entrepreneurship at the micro level, macro level change can be effected. However, determining the impact of social entrepreneurship organizations is more difficult. When including them in the aggregate in national level studies, the impact of social entrepreneurship is likely indirect: through the adoption of new practices, behaviors and development of new capabilities that did not exist previously.

The papers in this special issue bring forward various perspectives on social entrepreneurship. The paper on renewable energy (Surie, 2017) emphasizes the need for an innovation ecosystem approach. The papers on sanitation (Ramani et al., 2016), social innovation through public-private partnerships in emerging economies (Rao-Nicholson et al., 2017) and on Sandia National Laboratories (Stinnett et al., 2016) highlight a bottom-up approach through social entrepreneurship and social enterprises. In contrast, the papers on rural growth in China (Wu and Zhuo, 2016) and culture and entrepreneurship (Harms and Groen, 2016) focus on social entrepreneurship at the macro level.

Surie (2017) links concepts from national innovation systems, complexity, ecosystems and social entrepreneurship and provides a framework for designing an innovation ecosystem for new technologies. The paper highlights mechanisms at both macro and micro levels for creating a resilient and robust innovation renewable energy ecosystem. Mechanisms at the national level provide the supporting infrastructure for innovation and capability development; these include new institutions, demand-generating policies and institutional support for building linkages within and across ecosystems. Key mechanisms at the micro-level include facilitating the entry of social entrepreneurs in underserved areas, use of new technology platforms to diffuse entrepreneurial skills and enhance interactions, and the formation of linkages with external organizations to enable resource acquisition.

Rao-Nicholson et al. (2017) note that by building the capacity for social innovation, the Emergency Management Research Institute (EMRI), a public-private partnership engages in social innovation and acts as a catalyst for wider social reform and redesigning of the NIS for value creation led by social innovation in emerging economies. Their paper suggests that social entrepreneurship organizations can fill institutional voids by engaging in social innovation tailored to the local context. Ramani et al. (2016) paper complements the paper by Rao-Nicholson et al. (2017) and explains why social entrepreneurship organizations sometimes fail to achieve the desired long-term social impact. Explanations include factors such as the capabilities of the social enterprise and the nature of contextual challenges as well as the true intention of the enterprise. Ramani et al. (2016) recommend conducting impact analyses and using monitoring systems to ensure high-quality and sustained social impact.

Similarly, Stinnett et al. (2016) showed that the diffusion of ‘clean room’ process technology generated in the last half of the twentieth century in a government laboratory, Sandia National Laboratories (SNL), had an impact on industry at large by improving quality, corroborating research on the impact of capability-building on national competitiveness. Here, external social entrepreneurial action and problem-solving led to the diffusion of capabilities from SNL to the private sector. In addition, Stinnett et al. (2016) point out that institutions themselves must be renewed if they are to remain competitive. To enable institutional renewal, internal social entrepreneurial action was activated at SNL to build human capital in emerging technologies and the sciences in general. Thus, the challenge of sustaining a technological workforce in the twenty-first century was addressed through the creation of the National Institute for Nano-Engineering (NINE) program to build the capabilities of nascent scientists. In both the case of ‘clean room’ process technology and the NINE program, the activation of interactions and linkages is in line with the research on resilience in ecosystems in the natural environment.

Wu and Zhuo (2016) highlight how government policies to promote growth in rural China can diffuse capabilities and social entrepreneurship. Their paper is in consonance with research that emphasizes the importance of entrepreneurship in capability building and aiding economic development and growth. Thus, indirectly, macro level policies can influence practices and outcomes at the micro level, indicating that social entrepreneurship action by other organizations is necessary to enhance socio-economic outcomes.

In their paper “Loosen Up: Exploring the relationship between tightness as a cultural characteristic and national entrepreneurial activity”, Harms and Groen (2016) find that the cultural dimension of “tightness”, which refers to the degree to which a nation has strong norms and a low tolerance for deviant behavior, has no direct or moderating effect on national entrepreneurial activity. They attribute this to the presence of supportive institutions that override the impact of culture. One implication of this paper is that NISs can be nurtured via the assumption of a social entrepreneurship role by various entities, and, additionally, by deliberately designing institutions to foster creativity and innovation.

Perspectives from diverse parts of the world have been represented in the special issue. While the papers on the U.S. and China suggest that efforts by individual entrepreneurs in government laboratories or through government policies to boost industry and economic growth are critical, public-private partnerships and bottom-up efforts such as those undertaken by EMRI in India (Rao-Nicholson et al., 2017) can also lead to changes in the national system of innovation. Rao-Nicholson et al. (2017) highlight that changes can be triggered by social innovation at the micro-organizational level rather than being driven from the top. An implication is that altering national innovation systems requires attention not only to technological but also to behavioral changes required for the adoption of innovations.

The papers on India emphasize that at the bottom of the pyramid much work needs to be done to understand the social context – the adoption of toilets depends on the simplicity of technology, the training and on-going maintenance provided and the level of effort required to make it self-sustaining (Ramani et al., 2016). Additionally, BOP consumers may be unwilling to use the toilets if the technology is perceived to be inferior or if they are unable to avail of financing. Similarly, lack of access to technical training or assistance can lead to abandonment of solar products while the adoption of new cook-stoves using biofuels such as biogas (compressed natural gas) needs to be linked with platform technologies that enable BOP clients to generate livelihoods (Surie, 2017). In many situations, the deterrent to adoption is not technological, but, rather, socio-economic.

Overall, the papers highlight the following lessons: (1) Social entrepreneurship is an important aspect of national innovation ecosystems, particularly for the diffusion of innovations in BOP populations. (2) NISs can be created deliberately in new industrial sectors and locations and used to promote economic development. (3) Political and socio-economic systems must be considered along with technological systems to ensure that

innovations are adopted, diffused and sustained.

While the papers in the special issue draw on a variety of theories, ranging from resilience in ecosystems to the impact of culture, and touch upon critical research questions, future research can deepen our insights by using additional theoretical approaches and asking different questions. Future research could focus, for example, on how social entrepreneurship and innovation ecosystems in developed and developing countries differ, how social entrepreneurship is manifested at various levels in firms, industries and economies, how social entrepreneurship can diffuse innovations across the global innovation ecosystem, whether social entrepreneurship has the potential to alter technological trajectories and examine what types of national innovation ecosystems foster social entrepreneurship.

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