Social innovation in emerging economies: A National Systems of Innovation based approach

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Abstract
Drawing insights from the national systems of innovation and social entrepreneurship literature, this article examines how national systems of innovation (NSI) and social entrepreneurship interact to generate social innovation in emerging economies. Through the examination of a case study of the Emergency and Management Research Institute (EMRI), a public private partnership (PPP), social innovation is found to be an interactive bottom-up collective learning process where EMRI has developed a new model of social innovation. It also highlights the complex context in which social innovation occurs. As a boundary-spanning activity across the public and private sectors, the interactive learning process and associated capability building for social innovation has provided a catalyst for wider social reform and for the development and redesigning of NSI for social innovation-led value creation in emerging economies. Through such an approach, the EMRI has overcome the institutional voids and developed legitimacy through social innovation tailored to the local context; it thereby represents an alternative approach to the often top-down NSI organisations of developed economies.

Keywords: Social Entrepreneurship; Social Innovation; NSI; Emerging Economy; India

1. Introduction

The aim of this paper is to examine how National Systems of Innovation (NSI) and social entrepreneurship interact to enact social innovation aimed at addressing societal challenges in emerging economies. For the last few decades, an increasing amount of research has focussed on social entrepreneurship as an enabler of social value creation, particularly in the emerging economies context (London & Hart, 2004,2010; Sinkovics, et al., 2014). The issues linked to social value creation are glaring in the emerging economies' context due to the poor state capacity of solving societal problems. In addition, these economies suffer due to challenges linked to the scale, coordination and sustainability of social value creation. In such a context, the role of social entrepreneurship in addressing these multiple and interdependent issues becomes vital in stimulating social change through social innovation (Peredo & McLean, 2006; Weerawardena & Mort, 2006; Zahra, et al., 2009; Sinkovics, et al., 2014). Due to this potential, social entrepreneurship has been termed as a new norm (Corbett, 2016), whereby all entrepreneurial activity is regarded to have a social dimension. Its disruptive and non-traditional approach to social innovation is an important aspect of social entrepreneurship (Nicholls & Cho, 2008); yet, there is an insufficient understanding of how social innovations—as an interactive bottom-up process—are enacted and supported in different environments (Mulgan, et al., 2007; Fayolle & Matlay, 2010).

Although social entrepreneurship and social innovation have become mainstream concepts, there meanings are often assumed as opposed to explicitly articulated. While there is no universally agreed definition, social entrepreneurship is best understood as entrepreneurial activity driven by a social mission. That said, Munshi (2010) highlights how the nature of social entrepreneurship has come to emphasise activities that challenge norms and drive social change. This resonates with Mulgan's (2006: 146) definition of social innovation as 'activities and services that are motivated by the goal of meeting a social need and that are predominantly diffused through organisations whose primary purposes are social'. As such social entrepreneurship and social innovation are not the same, where the emphasis of social innovation is about doing things differently on a variety of different levels while social entrepreneurship focuses more specifically on doing business.

It has been argued that the growing prominence of social entrepreneurship and social innovation in particular—is a result of the shortcomings of techno-capitalism in driving social change (Suarez-Villa, 2009,2012). Despite the growing recognition of the value and contribution of such activities, however, social innovation remains an under-researched field (Fayolle & Matlay, 2010; Sinkovics, et al., 2014; Zahra & Wright, 2016). Recently, scholars have called for an NSI approach aimed at better understanding and integrating social innovation, as opposed to viewing it as a marginal or distinct activity (e.g., Phillips et al., 2015). NSI (Lundvall, 1992; Nelson, 1992) are a well-established concept, albeit one often biased towards the high-technology commercially-oriented innovation found in advanced economies. Consequently, little research has examined the role played by social entrepreneurship and social innovation in relation to NSI (Cajaiba-Santana, 2014; Phillips, et al., 2015). In particular, we know little about how NSI interact with social entrepreneurship to stimulate social change in emerging economies (Phillips, et al., 2015; Groen & Walsh, 2010; Harms & Groen, 2016).

NSI involve a wide range of organisations, and are the product of how institutions—many of which are equally relevant to driving social innovation systems—interact and institutional arrangements evolve. However, in developing countries, the institutional environment has been weak—if not absent—in relation to social innovation (Urbano, et al., 2010). In exploring the relationship between social innovation, social entrepreneurship and NSI, this article focuses on those interactions between organisations and the institutional

context that shape social innovation, particularly in emerging economies. More specifically, the article addresses two inter-related questions:

(1) How do NSI and social entrepreneurship interact in creating social innovation in emerging economies?
(2) In what ways have social innovation and social entrepreneurship provided a new dimension to the Indian NSI?

We address these questions in the context of India which is one of the important emerging economy. Emerging economies are typically characterised by a weak resource base and no institutional capacity (Khanna & Palepu, 1997), which one might associate with an ineffective NSI thus resulting in low levels of technological innovation. In rethinking the relationship between social innovation and NSI, this paper focuses on the case of the Emergency Management and Research Institute (EMRI) to explore how social innovation, undertaken as an interactive collective process, has realised social change and also catalysed wider institutional reforms. The EMRI, which provides emergency medical services including transfer of patients to hospitals, is a successful example of social innovation, one that benefits both the public and private institutions involved. The EMRI, which was established as a public–private partnership (PPP), takes a bottom-up approach that has proved to be successful in mobilising resources and capabilities. Such an approach has also challenged the preconceived view that innovations are created by lone entrepreneurs and are isolated from institutional factors. This form of partnership, which is an innovative model of social entrepreneurship, can be an important tool for the enactment of social innovation aimed at addressing complex societal problems by pooling resources.

The complexity emerging from the EMRI case study shows that social innovation does span boundaries and does not neatly fit into a single category of institutions (Lettice & Parekh, 2010). Drawing arguments from the systems of innovation and institutions approach, we argue that, by building legitimacy and enabling implementation through social innovation, the EMRI has overcome what Khanna & Palepu (1997) referred to as 'institutional voids'. We assert that, through social innovation, the EMRI is driving a highly context-specific learning and capacity building process. Overall, the findings show that the EMRI, as a PPP, undertook a bottom-up approach in stimulating social change through social innovation and was successful in mobilising resources and capabilities by means of interactive processes.

We contribute to the extant literature on social entrepreneurship and social innovation in three important ways: (1) We integrate national systems of innovation and institutions literatures to understand how social innovation led social change is enacted as a bottom-up collective learning process. A collective learning approach towards social innovations is vital in overcoming institutional voids and NSI related constraints in the context of emerging economies; (2) We highlight the unique public-private partnerships social entrepreneurship models as important conduits stimulating social innovation. These partnerships are shaped by the local institutional environment of emerging economies. Such partnerships are essential in the context of emerging economies, and may present a systemic approach for overcoming institutional voids in these economies; and (3) We provide important insights on this topic from one of the important emerging economy of India, as most of the existing research taking the national systems of innovation approach is in the context of commercial innovation in developed economies.

The remainder of this article is structured in four sections. The second presents the conceptual background of NSI and institutions, before considering the importance of social innovation and social entrepreneurship as drivers. The third presents the Indian context before presenting the methodological approach. The fourth presents the findings and analysis in terms of the research questions set out above. The article concludes by reflecting on social

innovation as a part of India's NSI and highlights the contributions of this study, as well as making the case for further research in this field.

2. Conceptual Background

In this section, we draw insights from social entrepreneurship, social innovation, institutions, and NSI to understand how social innovation is enacted in emerging economies.

2.1. Social Entrepreneurship and Social Innovation

Social entrepreneurship has garnered an increased interest in both the business management and popular press (Peredo & McLean, 2006; Short, et al., 2009). It is noted that ''social entrepreneurship is emerging as an innovative approach for dealing with complex social needs'' (Johnson, 2000: 1), being driven by social goals in order to benefit society (Dees, 2007; Peredo & McLean, 2006). It has been broadly defined as the creation of social value through the utilization of innovative and entrepreneurial means (Certo & Miller, 2008; Dees, 2007; Peredo & McLean, 2006; Sinkovics, et al., 2014). Similar to social entrepreneurship, social innovation is also conceptualized in different ways. For the purpose of this study, we follow the definition put forward by Mulgan (2007:8): "innovative activities and services that are motivated by the goal of meeting a social need and that are predominantly developed and diffused through organizations whose primary purposes are social". However, we also acknowledge that organizations the primary purpose of which is not social are also engaged in addressing societal problems through social innovation.

Despite the scholarly interest on this topic, there is hardly any universal and consistent definition of social entrepreneurship (Peredo & McLean, 2006; Short, et al., 2009; Choi & Majumdar, 2014). Choi & Majumdar (2014), for instance, noted that social value creation, social entrepreneurs, social entrepreneurship organizations, market orientation and social innovation are the five key elements of social entrepreneurship. In this article, social entrepreneurship is understood as the process of utilizing and pooling resources across institutional boundaries to create social innovation aimed at addressing societal problems and enacting social change. This is closely related to the definition put forward by Mair & Marti (2006) and, more recently, by (Bacq & Janssen, 2011: 388), as "the process of identifying, evaluating and exploiting opportunities aiming at social value creation by means of commercial, market-based activities and of the use of a wide range of resources".

Within the social entrepreneurship literature in particular, it has been noted that there is a need for further research into the impact of the institutional environment on social innovation. For example, Mair and Marti (2006: 40) suggested that "social entrepreneurship has different facets and varies according to the socioeconomic and cultural environment", just as commercially oriented business activities do, although the implications may differ. In a similar vein, Bacq and Janssen (2011: 387) echoed these views by noting that "the influence of the external environment on the individual, the process and the organisation has only received little, if not to say no, attention in the social entrepreneurship literature".

The extant studies on social entrepreneurship do not provide a detailed analysis of the role played by different organisations in the collective learning journey of developing social innovation (Phillips, et al., 2015). For example, Phillips et al. (2015) suggested the need to take a national systems approach to understand the process of social innovation. Social innovation is not developed by lone individuals, but is shaped by a wide array of actors and institutions, many of which are part of the more conventional NSI. Against this background, understanding the role of NSI is important in the development of innovation as an interactive process, and has implications for how social entrepreneurs enact and frame innovation around societal problems, particularly in countries that lack the institutional capacity and support to do so.

As such, taking an institutional and NSI approach provides a much needed theoretical lens to understand how social innovation is enacted as an interactive process, which is especially important in the institutional environments of emerging economies, such as India, which are in a constant state of flux. Such approach is also in line with the extant research on entrepreneurial innovation, indicating a need to integrate the contextual factors in the understanding of innovation (Autio, et al., 2014; Zahra & Wright, 2011; Fink, et al., 2013).

In rethinking the relationship between social entrepreneurship and NSI, it is useful to highlight the distinction made by Mulgan (2006), who stated that the focus of entrepreneur is concerned with meeting a social need. To reduce social innovation to the domain of social entrepreneurs and social enterprise is to oversimplify the mechanisms by which social development and change occur. As Dees and Anderson (2006) noted, social innovation can be pursued through a variety of different organisational forms: from voluntary organisations to the corporate social responsibility programmes of private enterprises, to hybrid public-private models. Collectively, such activities broadly fit within Zahra, et al. (2009: 509) definition of social entrepreneurship, which emphasises how "the activities and processes undertaken to discover, define, and exploit opportunities in order to enhance social wealth by creating new ventures or managing existing organisations in an innovative manner". Here, the main difference from the for-profit equivalent is the emphasis on generating outcomes that create social value, as opposed to private returns. What distinguishes social innovators is their often 'novel' approach to problems or challenges that are driven by need rather than by market forces, as exemplified by the case of emergency care services in India, which satisfy a clearly identifiable yet unaddressed human need (Lettice & Parekh, 2010). Therefore, in this article, we adopt an NSI approach to understand how social innovation is enacted as an interactive process in emerging economies. We elaborate on this in the next section.

2.2. National Systems of Innovation, Social Innovation and Social Entrepreneurship

Lundvall, et al. (2009) defined NSI in terms of "an open, evolving and complex system that encompasses relationships within and between organizations, institutions and socio-economic structures". The NSI approach has been mainly applied in the context of the transfer of technology and specifically highlights the important role played by interaction and collective learning as enablers of technological innovations (Patel & Pavitt, 1994; Lundvall, 1985; Nelson, 1992; Martin, 2012). A number of scholars have defined the concept of NSI in terms of a national public and private institution network that funds and carries out R&D, commercialises the resulting innovations, and helps to disseminate technology (Freeman, 1987; Nelson, 1992,1990). However, as Acs, et al. (2014) highlight, entrepreneurs are conspicuous by their absence from the NSI literature.

Cross-country differences in the performance of economic and technological development and innovation are shaped by institutions and institutional arrangements. This has implications for technical change and innovation outcomes (Freeman, 1995; Lundvall, 1992; Nelson, 1992; Martin, 2012), but also entrepreneurial outcomes (Acs, et al., 2014). It has been suggested that, within NSI, institutions perform a central role in the development of the local absorptive capacity for the generation of innovations (Cohen & Levinthal, 1990; Lorentzen, 2005; Khan, et al., 2016). In extending this, entrepreneurship can also be understood to perform an important role in driving innovation (Acs, et al., 2009; Audretsch, et al., 2006; Mueller, 2006).. Whereas Lundvall (1992) indicated that the interactions and relationships among firms in NSI are the main drivers for innovation, this can be extended to include a wider range of institutions (i.e. universities, R&D units, training centres, and companies) as well as entrepreneurs (Nelson, 1992; Acs, et al., 2016; Audretsch, et al., 2015).

Despite the insights offered by the NSI framework, and subsequently National Systems of Entrepreneurship, innovation and entrepreneurship are complex non-linear processes. NSI include a wide range of facets, including formal and informal networks as well as sharing and learning activities (Lundvall, et al., 2002; Jensen, et al., 2007; Metcalfe & Ramlogan, 2008). The NSI approach suggests the existence of complex relationships of communication, cooperation, and feedback among different actors (Carlsson, et al., 2002). One of the key strengths of this framework is that it enables the identification and highlighting of the non-linear and contextually embedded nature of innovation processes (Samara, et al., 2012); such non-linear and contextual factors are highly relevant for understanding the process of social innovation.

There is little known about social innovation in the context of NSIs in developing new forms of innovation geared towards social needs (Phillips, et al., 2015); in fact, most existing research taking the NSI approach has neglected the role played by entrepreneurs (Metcalfe & Ramlogan, 2008; Acs, et al., 2016). In particular, the understanding of the role played by NSI in supporting bottom-up approaches towards social innovation is neither well developed nor understood (Phillips, et al., 2015; Metcalfe & Ramlogan, 2008). Scholars have indicated the important role played by institutions in the emerging economies context (Lall, 2000; Dutrénit, 2007; Choung, et al., 2014; Dodgson, 2009). For instance, Dutrénit (2007) noted that national governments need to develop and promote their institutional infrastructure for the development of innovation capacity at the local level. In other studies, researchers have argued that government policies within the national innovation system can promote effective social entrepreneurial action and enhance economic growth (Wu, et al., 2016). Similarly, Ramani, et al. (2016) argue NSI support is essential to create "demand" for pro-poor innovations and their arguments were supported in the context of Indian sanitation sector where social enterprises emerged as the new NSI actors who focused on social impact of innovations.

Scholars have also pointed at problems with the existing NSI studies, classifying them as being rather descriptive and general in nature (Lorentzen, 2009), and mostly focussing on developed economies with well-established institutional infrastructures in place (Fagerberg & Srholec, 2008). Such ideal institutional arrangements and infrastructures are rarely found in emerging economies, and merely importing business model solutions mostly developed in advanced markets might not work well for them. For instance, emerging economies face chronic budget shortages, poverty, and high unemployment rates, which force local governments to work with private entrepreneurs in order to develop viable social delivery systems for value creation. Furthermore, their public institutions are responsible for providing services to poor and marginalised communities, but lack the capacity of delivering social ones. Therefore, linking with private entrepreneurs enables the pooling of the resources needed to develop and redesign their unique social innovation delivery systems for value creation (e.g., Prahalad & Hart, 2002).

Current research on social innovation has highlighted the important role played by both collective social learning and interactions between individuals in developing social innovation (Dawson & Daniel, 2010; McElroy, 2002). Yet, to date, such studies have not drawn any insights from NSI. There is still the need to unpack and understand the interactive process and bottom-up initiatives that drive social innovation as a part of NSI, especially in settings in which resources are constrained (Phillips et al., 2015). Although social innovators and social entrepreneurs may lack both capabilities and resources, working from the bottom-up and establishing PPPs can help overcome institutional voids (Khanna & Palepu, 1997,2000) and build the capacity for social innovation. Therefore, this paper differs from the existing NSI studies by placing its empirical focus on seeking to integrate institutional perspectives within the literature (North, 1990; Scott, 1995). It does this to provide a detailed

account of social innovation as the outcome of a bottom-up and interactive cumulative learning process. Such an approach to innovation is uniquely positioned to address social needs at the community level.

As organisations rationally pursue their interests and make strategic choices within an environment that is defined by formal and informal institutions, the latter play a key role (Peng, 2003; Peng, et al., 2009). As such, variations in national institutional environments either enable or constrain strategic corporate options, including those linked to innovation potential (Zhu, et al., 2012; Galang, 2012). Consequently, country-level institutional environments have been shown to significantly influence innovation and entrepreneurial activity (Busenitz, et al., 2000; Zhu, et al., 2012). Dutrénit (2007) found that this highlights the national importance of institutions in the development of innovation capabilities and, with it, that of NSI.

In the particular context of emerging economies, formal institutions are typically in a state of flux, thus indicating the strong role that informal ones play in delivering social innovation aimed at the marginalised communities that have limited access to and hope in the formal institutions. PPPs may overcome such weakness and provide viable solutions to the socio-economic problems of such communities. Some studies have noted that, in such settings, limited and weak government support in and activism towards addressing social welfare issues enhance the degree of social entrepreneurship required (Dacin, et al., 2010; Mair & Marti, 2009; Zahra, et al., 2009). Symmetrically, active government support in addressing social problems leads to fewer social entrepreneurial start-ups (Mair, et al., 2012; Estrin, et al., 2013).

In those instances in which institutions are taken into consideration in the innovation systems literature, the emphasis is typically placed on regulatory aspects. Regulatory institutions are important in both enabling and constraining the behaviour of organisations, given their role in determining the 'technological trajectory' (Lundvall, 1992) or what Nelson (1993) referred to as the 'spirit of techno-nationalism'. However, in the innovation systems literature and beyond regulative issues, new-institutionalist discourses have come to emphasise the normative ones that also promote social stability and address societal priorities (Edquist & Johnson, 1997; Gronning, 2008). Providing a more comprehensive interpretation of institutions can produce more in-depth insights about the dynamics of innovation systems, thus moving beyond the descriptive nature ascribed by Lorentzen (2009) to many NSI studies.

In contrast to the technology-focussed business innovation that characterises much of the NSI literature, Pol and Ville (2009) observed that social innovation is typically not a market construct. This reflects the often 'novel' approach of social innovators towards a problem or challenge that is driven by a clearly identifiable yet unaddressed human need, rather than by market forces (Lettice & Parekh, 2010). The emphasis of social innovators on social value—as opposed to generating private returns—highlights the limitations of the NSI literature, which is technology-centric. However, as noted by Phillips (2011), social innovation has replaced technological driven innovation as the driving force of social change; thus, there is a need to rethink how social innovation and social entrepreneurship relate to NSI.

Against this background, understanding the role played by NSI is important in the development and pursuit of social innovation. If social innovation involves meeting an unfulfilled need with a view to create system change (Chalmers, 2013), then social entrepreneurship is its actualisation: it creates change and makes a difference. This led Weerawardena and Mort (2012) to state that there is an explicit link between social innovation and social entrepreneurship, albeit one characterised by blurred boundaries. Based on the preceding discussion, we expect that, with respect to social entrepreneurship, NSI both

provide and limit opportunities for the creation of social innovation in emerging economies. However, given the limited research conducted on this topic, we know little about how NSI shape social innovation in emerging economies, with their weak resource base. Next, we discuss the context and methods of this study.

3. Context and Methods

3.1 The Indian context

Emerging economies are assuming an increasingly prominent position in the global market; thus, they represent both an important and interesting focus for research in innovation systems, social innovation, and social entrepreneurship. With much NSI and social entrepreneurship research centred on advanced economies (Lorentzen, 2009), emerging ones provide a new context within which to understand how these two domains relate. Khanna and Palepu (1997) asserted that emerging economies are typically characterised by weak institutional arrangements in relation to the degree of technological innovation one might associate with ineffective NSI. Indeed, in emerging economies, there is often less—if any—institutional support for social innovation (Urbano, et al., 2010). However, with social innovation overtaking technological innovation as the driving force for social change (Phillips, 2011), our findings show that this is beginning to change.

Compared to those found in other emerging economies, Indian NSI are arguably more advanced. Since gaining independence, in 1947, the strategy of the Indian government has continued to emphasise the value of science and technology, albeit from a fairly insular nation-based approach. Historically, there has been a tendency to privilege the development of indigenous science and technology over international learning and collaboration (Herstatt, et al., 2008). As a result, the Indian innovation system has been characterised by a sectoral approach (e.g., space, energy, etc.) that has often provided greater focus than a territorial one (Malerba, 2004). That said, Kristinsson and Rao (2008) described how, during the late 20th century, India sought to learn from—rather than to imitate—foreign policies and institutions in developing national NSI.

The Indian Government continues to play a vital role in NSI through its science and technology policies, which, since 2003, have placed greater emphasis on promoting innovations to solve national problems on a sustainable basis (Herstatt, et al., 2008). The development of regulatory and legal frameworks (including those pertaining to intellectual property) aligned with those of Western economies has helped strengthen Indian NSI (Parthasarathy & Aoyama, 2006); however, certain areas are still regarded as unnecessarily bureaucratic, overly-regulated, and not sufficiently enforced. The government has supported the development of India's innovation system in terms of education and infrastructure, and in attracting inward investment and incentivising innovation. The National Innovation Council—set up in 2010—and the 12th Five Year Plan (2012–17) have continued to emphasise governmental support for innovation aimed at meeting national challenges.

As a testament to this, Bound and Thornton (2012), described India as being characterised by a price–sensitive market; a culture of creative improvisation, and a vibrant civil society that, with governmental support, have laid the foundations for social innovators and social entrepreneurs. The Indian government has been the cornerstone of the country's emerging innovation systems, and has been instrumental in fostering a more socially inclusive culture of innovation. In India, social innovation has undoubtedly benefitted from the rise of social entrepreneurship, which Rukhsana (2015) attributed in part to the government's limitations in delivering social change; the case of the Emergency Management and Research Institute (EMRI) being an example of this. The empirical focus of this paper explores how the EMRI, as a PPP, has come to represent a new dimension of Indian NSI and,

by engaging a range of partners, has delivered a new socially innovative model of emergency care.

3.2 Methodological Approach

The empirical focus of this paper is a case study of the EMRI. India has one of the lowest levels of investment in emergency care services among the G20 nations, with the prospect of economic development prioritised over social development. The Indian emergency care services sector is significantly underdeveloped and characterised by insufficient public provision; thus, it has seen a rise in the number of non-governmental organisations (NGOs) and charities. The EMRI represents a distinct socially innovative model of emergency care established through a PPP involving organisations across Indian NSI and international ones. This paper explores how the socially innovative enterprises developed by the EMRI are not market constructs, but have the capacity to change the institutional environment through new and collaborative ways of working.

We adopted a case study approach for this study as we were interested in understanding the process of social innovation, unpacking what Eisenhardt (1989: 534) described as the ‘‘dynamics present within single settings’’. Case study research also enables the adoption of multiple methods of data collection—including interviews, observational visits and documentary analysis. To achieve interviewee representativeness, purposive sampling was used in this study to identify relevant stakeholders engaged in emergency care. (Maxwell, 1997: 87) defined purposive sampling as involving the deliberate selection of particular settings, persons, or events to solicit important information that cannot be gained from other sources. Following the sampling process, interviews with 20 participants were conducted between 2008 and 2012. The interviewees included EMRI employees and key stakeholders. Table 1 shows the key participants interviewed for this project.

Table 1. Interviewee details

Participant Descriptors	Number of respondents
Internal Stakeholders	
CEOs	1
Operations Managers	3
Marketing Managers	2
Call centre employees	3
External Stakeholders	
Local government officials	3
Local Hospital Managers	3
EMRI users/consumers	5

Semi-structured face-to-face interviews, each lasting between 60 and 90 minutes, were conducted with the participants detailed in Table 1. A range of topics was covered, including the details of the organisation, its process of social innovation, the nature of its activities, and the impact of the Indian context on its activities, its social delivery business model, its external linkages, and other issues pertinent to it. The interviewees were also encouraged to share any other issues or personal reflections—not covered by our questions—on the social innovations carried out by the organisation. These open-ended questions provided detailed insights, which provide the foundations of this paper. We also conducted an extensive search of the academic literature and internet sources for information on the EMRI, and we located several news articles focussing on the work it has undertaken. These documents were downloaded with further literature from medical journals that examined the impact of the EMRI on Indian emergency services. For example, a few journal articles

examined the EMRI's impact on maternal mortality in India (Raj, 2009; Shah, et al., 2014; Saddichha, et al., 2009).

To analyse the qualitative data collected, we followed Yin's (2009) suggestions. The following five principles were followed: understanding the large and disparate amounts of qualitative data; integrating similar and related data from various transcripts and notes; identifying key themes or patterns for further study; developing and/or testing theories according to the apparent relationships and patterns; and summarising and validating conclusions. The interview recordings were transcribed and the handwritten notes converted into Microsoft Word files. We used NVivo, a computer assisted qualitative data analysis software, to categorize and code our data (Sinkovics & Alfoldi, 2012). The data from secondary sources (web materials, journal articles) were also inputted into the NVivo software to be coded and processed. Using both the secondary and primary data, we triangulated information to identify key issues for the EMRI in the Indian context. We identified the EMRI's processes and the social innovations adopted by it to pursue socially beneficial outcomes.

The remainder of this paper presents and discusses the findings, highlighting the importance of collaboration in developing the capacity of a socially innovative emergency care model and how the PPP has come to provide a new dimension to the Indian NSI.

4. Findings & Analysis

The EMRI was established in 2005 to provide emergency care and first response services in the Indian state of Andhra Pradesh (George, et al., 2015). It was based on the philanthropic actions of a leading Indian software company and developed on the seed funding of $5 million provided by Mr. Ramalinga Raju. This lone entrepreneur provided the initial spark for this valuable endeavour. The then head of the EMRI, Venkat Changavalli, had professional management experience that included heading the Indian subsidiary of a successful multinational enterprise. Both these individuals worked on providing the preliminary direction and strategy for EMRI to achieve its goal of providing emergency healthcare to unprivileged Indians. Works like that of DiMaggio (1988), Holm (1995), Scott (1995), Greenwood, et al. (2002), Greenwood and Suddaby (2006) and Chavez, et al. (2016) have explored the importance of embedded agency to promote the institutional change. Yet, as the work of EMRI grew, the impact of individual entrepreneur was replaced by that of the organization-level and system-level agency. Hence, later on despite its acquisition by another organization, EMRI could continue its work of providing emergency health services to wider Indian population. In 2009, the EMRI was acquired by the Indian infrastructure company GVK. From its modest beginnings, operating in just one Indian state in 2005, the EMRI today operates in 14 states across India and is the leading provider of emergency care, credited with saving over one million lives each year.

4.1. A Socially Innovative Model of Emergency Care

With the typically inefficient, under-resourced, and over-subscribed government funded and subsidised hospitals, and the expensive private emergency care—unaffordable to most Indian citizens—there was a clear need for an emergency care provision that was socially innovative and enterprising. A key issue faced by the EMRI in providing access to emergency care services—one that required a collaborative solution—was the availability of resources and infrastructure. This section presents the key partnerships—and their associated inputs and activities—that have been instrumental to the EMRI's success and the innovations in terms of the innovative healthcare model.

At its core, the EMRI had three teams working in the medical, systems and operations areas; those teams were critical in sustaining and developing the capabilities of the PPP and

in managing the volunteer network. The EMRI's socially innovative model was developed as follows: the medical team researched, designed and developed its capabilities in medical emergency care; the systems team focussed on globally researching innovative best practices in support of the provision of emergency care; and the operations team concerned itself with researching ways in which to better manage resources and with developing new processes and protocols aimed at improving emergency care efficiency and effectiveness.

To cover the high initial setup and scaling-up costs associated with the provision of emergency care services—primarily, the organizational infrastructure and ambulances—the EMRI required government funding. However, beyond that, the government's backing provided the EMRI with legitimacy. Besides the key financial support of the national and state governments, the design and delivery of the models involved a wide number of NSI and international partners.

In establishing its organizational and operational infrastructure, the EMRI undertook a number of key activities. These included working with the state government district administration to establish a single emergency number like those found in the US and the UK for police, fire, and ambulance. Thus, in conjunction with the Police and Fire Services, the 108 toll-free number was created. Working with the Tata Institute of Social Sciences (TISS) to develop technical support for operational protocols, the EMRI has also developed a new service purely focussed on women.

One of the pivotal relationships into which the EMRI entered in developing its emergency care model was with the Stanford School of Medicine. It involved the transfer of knowledge, technical know-how, and best practices to adapt its relevant processes and protocols to suit the local Indian environment. Besides, the partnership with Stanford University involved the training of 150 paramedics and 30 paramedic instructors to help the EMRI scale up its operations. Chell, et al. (2010) noted that cooperating with leading international partners is an increasingly common characteristic of social innovation; the EMRI has been comparatively successful in this aspect.

Collaborating with one Indian and one international private partner, the EMRI has developed and procured bespoke GPS equipment for its ambulances and a digital communication control system capable of handling up to 200,000 calls daily. The technologies employed in Andhra Pradesh proved their effectiveness and were subsequently used as the EMRI model was scaled up. In the absence of developed urban infrastructures and in addition to GPS tracking, the ambulance crews collaborated with local communities to harness local knowledge in identifying locations (e.g., by making reference to readily identifiable landmarks, such as temples or mosques) in unmapped areas

Another area in which the EMRI collaborated with the private sector and Indian universities was the design and manufacture of its ambulances. According to an EMRI manager, each ambulance produced costs around £15,000, more than 75% cheaper than producing an equivalent vehicle in the UK. Another important difference is represented by the running costs, with a single EMRI emergency call out costing £5 as opposed to the average of £165 per trip in the UK. The ambulances were innovatively designed and built, using Indian suppliers, in fibre reinforced plastic to limit noise and provide thermoregulation. In contrast to earlier ambulances, which were primarily for transport rather than for the provision of care, the EMRI ones are fitted with advanced life support (ALS) systems. Beyond the mission to provide emergency care, the EMRI's research informed model aimed at reducing the fatalities associated with pregnancy related emergencies, road accidents, suicides attempts (by poison), and snake bites, which are the biggest causes of death in India. Overall, the Indian-built ambulances were designed and developed to manage 48 types of emergencies, to reduce mortality rates during transfer, and to enable more on-site treatments.

As the EMRI model has evolved in various Indian states, it has continued to adapt to the local context to meet local needs. For example, in the tea-growing state of Assam, in India's northeast region, the EMRI introduced boat ambulances. These are equipped with the typical life-saving equipment found in their road counterparts. Again, this is an example of the EMRI developing tailored solutions that work in different localities as opposed to implementing already established models of emergency care.

Besides first response and emergency care, the EMRI has worked to apply an approach coordinated with hospitals. By partnering with a network of hospitals, the EMRI has established a new service model that provides free emergency care to patients for the first 24 hours. Securing hospital access for emergency patients, many of whom are from low-income households, is critical in many medical emergencies and is transforming the nature of emergency care in India. Moreover, the innovative way in which the EMRI has worked to engage with the public has been an important mechanism for building capacity and capabilities. The "volunteers in case of emergency" network sees community based EMRI volunteers with basic medical supplies acting as first responders at local emergencies that might not require an ambulance, or providing immediate support until an ambulance arrives. The volunteer network is critical for the acceptance of the EMRI's services within the community.

In contrast to other local emergency care providers in India, which are primarily delivery organizations or service providers, the EMRI's bottom-up approach to social innovation sought to develop and implement solutions specific to the Indian context. To ensure that its model was accessible, the EMRI has substantially reduced the cost of delivering emergency care services by developing a socially innovative model that engages in a wide range of partnerships. These findings resonate with the views expressed by Seelos and Mair (2005: 48), who indicated that "social entrepreneurship creates new models for the provision of products and services". Crucially, the solution to providing accessible and affordable emergency care was delivered bottom-up and not as the product of a top-down mandate or strategy.

As a socially innovative model of emergency care, the EMRI has taken a collaborative and interactive approach, which has come to represent an important form of social development and catalyst to wider institutional reforms. The remit of the EMRI's activities broadly fits within Zahra, et al. (2009: 509) definition of social entrepreneurship, which emphasises "the activities and processes undertaken to discover, define, and exploit opportunities in order to enhance social wealth by creating new ventures or managing existing organisations in an innovative manner". As the next section elaborates, this has primarily been possible through the creation of the EMRI as a PPP, which has enabled it to leverage and mobilise resources and to develop capabilities in collaboration with other stakeholders in the NSI.

4.2 A New Dimension of India's NSI

As the previous section demonstrates, the EMRI model of socially innovative emergency care has been established and delivered as a result of partnerships and alliances established across the NSI. In this section, we move beyond such model itself and focus on the PPP, as providing a new dimension to the NSI in India. To highlight this, Figure 1 presents a simplified schematic of the NSI in India, and the position that the EMRI has sought to assume within them.

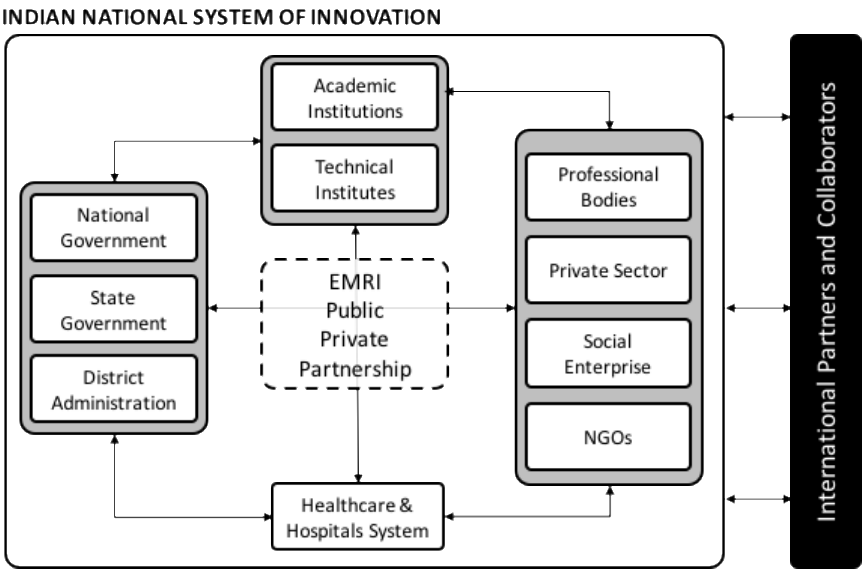

Figure 1. The position of the EMRI in the Indian NSI

As is typical of many NSI, the defining institutions are the Government, the Industry, and Universities/Research Organizations; however, in recent years, NGOs, charities, and social enterprises have more prominently become a part of the NSI. In many respects the position of the EMRI as a PPP can be seen as central to the NSI, making connections with a wide variety of institutions. In relation to the social challenge presented by delivering emergency care, the EMRI has played an important role in galvanizing its provision through the PPP model. Our findings demonstrate that the success of the EMRI is in part due to the fact that it does not neatly fit into a single category, but spans institutional boundaries in its design and delivery of emergency care.

The social need addressed by the EMRI is more complex than simply overcoming 'institutional voids' as described by Khanna & Palepu (1997). NSI are relatively weak in India and characterized by underfunded institutions; this can in part be explained by the role played by the state in determining national innovation priorities (Joseph et al, 2013). By contrast, the PPP model of the EMRI resonates with the wider societal shift towards a more inclusive model of social innovation. As described above, this has seen partners learning, adapting, and innovating to better meet local requirements. We assert that the boundary spanning characteristics of the EMRI are critical in reducing what Williams & Vorley (2015) referred to as 'institutional asymmetries'. In this way, the EMRI works as a broker, effectively leveraging resources and developing capabilities across the NSI to deliver an accessible and sustainable emergency care model.

This kind of approach is recognized as important in resource constrained environments such as India (Lundvall, 1992), but it is about more than "making do" with the available resources. Given that the healthcare landscape is fragmented and differs across states, the EMRI has had to navigate and work across the complex Indian system of multi-level governance. By challenging the often-hierarchical nature of decision making within the administrative system, the EMRI has overcome some of the main barriers that had previously stymied the development of an integrated model of emergency care. The political buy-in by all levels of government has become self-reinforcing, engendering greater commitment from all involved and compelling other stakeholders to work with the EMRI, as a part of a PPP, in delivering emergency care.

At the same time, another defining feature of the EMRI is that the nature of its social innovation is bottom-up, resulting in a model of emergency care that meets the needs of the

Indian people. The research informed approach of the EMRI to understanding the challenges of delivering emergency care has been important in shaping the model it has established. Indeed, the EMRI's model is testament to Mulgan's (2006) observation that, given the chance, people (and institutions) can solve their own problems. The EMRI has achieved this through a PPP by liaising with institutions but also grounding and embedding itself in the wider community. This has been central to the way in which the EMRI has learnt and developed capabilities, which, in turn, has enabled it to successfully scale up its activities in different states across India. In keeping with previous work by Le Ber and Branzei (2010), the EMRI's teams have been critical in sustaining the momentum and impact of the PPP on emergency care. This was in part achieved by ensuring benefits to all the institutions involved.

The NSI is complex, however the EMRI has built capacity through connections, and by creating what Martinelli (2013) referred to as an 'institutionalized space' for social innovation. The impact of the EMRI therefore serves to enhance the absorptive capacity of the NSI, which, in turn, fosters a culture of innovation (Cohen & Levinthal, 1990; Lorentzen, 2005). As opposed to considering social innovation as part of a distinct system, the EMRI demonstrates how it is, in fact, part of the NSI. As a PPP, the EMRI's socially innovative emergency care model includes a range of activities and innovations, some of which are technological in nature, although driven by social goals. To consider social innovation as a separate system would fail to acknowledge the critical importance of the links with institutions across the NSI and internationally. Fundamentally, as a PPP, the EMRI's success as a socially innovative emergency care provider has been achieved by how it has worked to create partnerships aimed at developing resources and capabilities, and to align institutional interests in delivering a social goal.

The continued delivery of the EMRI model is testament to the importance of social entrepreneurship and alternative organisational forms in driving social development in emerging economies. Ultimately, the EMRI, as a social innovation, was not a market construct and needed an alternative model of delivery. The way the EMRI was established involved building a business model around the strengths of partnerships with other institutions and on multiple scales. The findings indicate that the EMRI has overcome institutional voids through pooling resources and taking collective learning aimed at social innovation. Through such a process, the EMRI was able to address the need for emergency care in India. Our findings contribute to the work of those scholars who indicated the important role played by institutions in the emerging economies' context (Lall, 2000; Dutrénit, 2007; Choung, et al., 2014; Dodgson, 2009); however, our focus is specifically on how social innovation relates to the NSI.

5. Discussion & Conclusions

The aim of this article was to understand the role played by National Systems of Innovation and how they interact with social entrepreneurship in enacting social innovation in emerging economies. To this effect, the paper examined the links between NSI and social entrepreneurship which can help develop social innovations which are relevant to social context. We further examined how these social innovations and entrepreneurships helped EMRI to provide new dimensions to Indian NSI. Most of the existing research focussed either on conceptualization related issues or on understanding the role played by individual entrepreneurs in social innovation (Bacq & Janssen, 2011; Cajaiba-Santana, 2014). We observe some evidence of this embedded agency in our study with the initial entrepreneur providing foundation for institutional change. Scholars have called for more research in understanding not only how social innovations are created and supported (Mulgan, et al.,

2007), but also the role played by environmental factors—such as the NSI—and how these shape social entrepreneurship and social innovation aimed at addressing societal problems (Bacq & Janssen, 2011; Cajaiba-Santana, 2014; Phillips, et al., 2015).

Two key findings emerge from the analysis of the EMRI case. The first highlights that the strength of the EMRI is in its bottom-up collective learning approach towards social innovation; the EMRI, through the PPP, was able to develop both legitimacy and a new model of social innovation. The findings indicate that such partnerships are crucial in the context of emerging economies; this is due to the complex nature of social problems, which require multiple stakeholders pooling resources to address social problems. This is in contrast to the existing studies, which focussed on the role played by individual entrepreneurs in social innovation (Bacq & Janssen, 2011). Through PPP arrangements and by interacting with other organizations in the NSI, the EMRI has developed a unique social model for the design and delivery of emergency care. The EMRI has shown how social innovation is driving social change, and acting as an important catalyst to institutional reform of the NSI.

The second finding highlights that, in the case of emerging economies, social innovation has the capacity to act as a catalyst to reduce institutional asymmetries (Williams & Vorley, 2015) and overcome institutional voids (Khanna & Palepu, 1997). As such, social innovation presents an opportunity to challenge the norms associated with NSI and develop new capabilities, especially in economies in which institutions are weak and/or resources are scarce. Arguably, social innovators have the potential to develop and reform NSI as much as these shape social innovations in emerging economies. The case of the EMRI also highlights the complex context in which social innovation occurs. As a boundary-spanning activity across the public and private sectors, the interactive learning process and associated capability building for social innovation provides a catalyst for wider social reform and for the development and redesigning of NSI for social innovation-led value creation in emerging economies.

The findings also suggest that both local and international connections are important in mobilising resources and fostering social innovation; in the case of India, this involved developing capacity and learning from international innovation systems, then reengineering these processes to fit with the local environment. However, the success of the EMRI has been in tailoring social innovation to the Indian context, an important factor in developing its socially innovative model for emergency care services. However, the EMRI has been most effective in translating these lessons to the local context, enabling the weak and underdeveloped NSI in developing economies to overcome the challenges associated with the institutional environment through innovation. These findings provide important insights in regards to how social innovation is created and enacted in different contexts (Mulgan, et al., 2007; Bacq & Janssen, 2011). The findings indicate that, in emerging economy contexts, social innovation offers a means to develop and strengthen institutional arrangements by overcoming the voids and, in so doing, strengthening NSI. As such, they further support the limited studies that suggested that social innovation spans boundaries and is not created by lone entrepreneurs isolated from the local environmental forces (Lettice & Parekh, 2010; Phillips, et al., 2015).

5.1. Contributions and Implications

This article makes three key contributions to the literature on social entrepreneurship and social innovation. First, it draws its arguments from NSI and institutions, and documents that successful social innovations are developed by means of an interactive and embedded bottom-up learning processes in weak institutional environments. By doing so, it responds to the call to integrate insights from NSI in understanding social innovations (Phillips, et al., 2015). This is an important contribution as the current view suggests that social entrepreneurs

innovate in isolation. Second, it provides important insights into the working mechanisms of public-private partnerships in the context of emerging economies as key means to develop social innovation thus it shows how such partnerships are shaped and transformed for successful social innovation by the local institutional environment of emerging economies (e.g., Bacq & Janssen, 2011; Mair & Marti, 2006). Third, it provides important insights into this topic drawn from the important emerging economy of India, as most of the existing research taking the national systems of innovation approach was carried out in the context of developed economies and was of a descriptive nature (e.g., Lorentzen, 2009). Altogether, this article contributes to opening up a new line of research by bringing in insights from NSI in order to understand how social innovations are created (Cajaiba-Santana, 2014; Phillips, et al., 2015).

In demonstrating the value of integrating insights from the perspective of NSI and institutions, the empirical focus of this paper has outlined the way in which social innovations provide a mechanism to strengthen institutional arrangements in emerging economies by aligning public and private interests. Overall, the findings have wider implications for research on subsistence markets and social value creation in base-of-the-pyramid business models (Kolk, 2014; Parmigiani & Rivera-Santos, 2015; Sinkovics, et al., 2014). Moreover, the paper has a number of implications for practitioners. First, they suggest that managers can apply the concept of NSI to overcome the challenges to enacting social innovation in emerging economies. Second, social innovation, as an interactive learning process, was evident throughout the data; therefore, the development of local capabilities and working with local volunteers and other organizations would be useful for the creation of social innovation eco-systems in emerging economies. Third, the study's findings further indicate that international connections were important for fine tuning social innovation to the local emerging economies context. This suggests that managers should strive to develop transnational connections, especially with the NSI of developed economies, in order to benefit from these experiences and interactions. Such transnational interactions and learning are key in overcoming local market related 'institutional voids', where effectively translated, and in further facilitating the development of local capacity and social innovation eco-systems for value creation in emerging economies.

5.2. Limitations and Future Research Directions

This study has some limitations that could point at important avenues for further research. First, it is limited by its research design and setting, and its findings may not be generalisable to other contexts. The exploratory nature of the case in the context of a single country offers important insights in terms of understanding how social innovations attained through a bottom-up interacting process are enacted in the emerging economies' context. Therefore, it would be useful for future studies to examine the role played by NSI in social innovation in different research settings. Second, the findings demonstrate the important role played by learning from developed economies' NSI. Therefore, a comparative study exploring the mechanisms that facilitate transnational learning would be important to understand the actual nature of such interactions and how these improve the success rate of social innovation. Third, the paper briefly discusses the important role of embedded agency in the development of social innovation thus future studies might benefit by exploring the role of individual agency and local conditions and how such factors affect the development of successful social innovations. context which might be a fruitful avenue for future research. Lastly, the concept of NSI could be used to examine base-of-the-pyramid business models and social value creation in emerging economies (Sinkovics, et al., 2014).

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