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## Editorial Innovation and entrepreneurial dynamics in the Base of the Pyramid

#### 1. Introduction

Over the past decade, there has been widespread interest in how innovation and entrepreneurship can stimulate economic growth within impoverished, often illiterate communities from developing and emerging economies. A recent and influential stream of management research that has addressed this issue is the so-called 'Base of the Pyramid' (BoP) discourse (sometimes referred to as 'Bottom of the Pyramid'). Prahalad and Hammond (2002), Prahalad (2007), London and Hart (2004) and Hart (2007) argue that opportunities in the 'Top of the Pyramid' (ToP), mature markets in industrialized nations, are becoming increasingly saturated, whereas BoP markets may provide considerable opportunities for multinationals (MNCs) while simultaneously providing much needed goods and services. Central to their arguments is that innovation is the means by which companies can resolve poverty, which in turn builds on a well-established argument that innovation is central to economic change (c.f. Bradley et al., 2012; George et al., 2012).

Since these early studies, many papers have been published on the topic, including those in a number of dedicated special issues in for example in the *Journal of Product Innovation Management* (Nakata, 2012), two in *Greener Management International* (Gardetti, 2010; Kandachar and Halme, 2007), *Journal of Business Research* (Nakata and Viswanathan, 2012), *Review of Policy Research* (Bortagaray and Ordóñez-Matamoros, 2012) and *Journal of Management Studies* (George et al., 2012). Given that much of the research is at an early phase, all studies call for a further research, especially regarding the role of technology, innovation and entrepreneurship, the focus of the following papers included in this special issue.

Silvestre and Silva Neto (2014) apply the industry clusters and capability accumulation perspectives to shed light on the dynamics of BoP innovation. Drawing on a mining cluster in Brazil, they argue that BoP clusters present different dynamics when compared to other clusters, due in part to additional barriers to technology diffusion, a lack of coordination and misaligned policies. They further note that technology development without wider diffusion within BoP clusters may exacerbate social exclusion and wealth concentration, and that, contrary to much of the clusters and capability accumulation literature, in large emerging economies global pipelines are not necessarily the only path for successful BoP clusters. Hall et al. (2014) take a similar perspective by applying the global value chain and latecomer literature to the BoP, proposing innovation pathways for social and environmental improvement within poor communities. Drawing on an initiative to replace candles and kerosene lanterns with semiconductor white light-emitting-diodes (WLEDs) in various BoP locations and the development of naturally colored cotton in poor regions of Brazil, they argue that social uncertainties may act as 'levers', compensating for initial technological and commercial deficiencies, thus providing technology developers a value proposition and the time needed to improve the technology.

Ramani and Mukherjee (2014) discuss radical and complex reengineered product innovations in the context of both Corporate Social Responsibility (CSR) and BoP perspectives. Drawing on two innovations launched in India - genetically modified cotton seeds and a HIV/AIDS treatment - they explore whether an innovation that serves the poor can also generate CSR gains. They found that although firms do not invest in innovation to earn CSR credit, some – but not all – can trigger CSR returns. They conclude that a robust business strategy rather than philanthropy is needed for BoP innovation. Zamani-Miandashti et al. (2014) explore how information and communication technologies (ICTs) are becoming an inevitable and necessary part of rural development projects in Iran. Drawing on archival records and face-to-face interviews with users, operators and officials, they found that telecenters - a relatively new concept in rural development that provides access to communication facilities (e.g. phone, the Internet, e-mail, fax, mobile phones, printers, photocopiers, etc.), and ITC training, were useful for some aspects such as reduced travel but did not live up to the promise of creating jobs. They further found that, along with infrastructure improvements, there is an 'absolute necessity' for rural capacity building. They conclude that special attention needs to be paid to rural youth, an issue that one hears frequently from policy-makers in underdeveloped regions but not adequately explored in the literature.

A fifth paper, Lim et al. (2013) originally intended to be included in this special issue, but published in a previous volume, explores how a firm from a developing country can build capability through innovation for unserved lower end 'mega markets.' Drawing on Indian-based Tata Motors' Nanoautomobile, they show how the building of innovation capability could be achieved through creating a process that overcomes 'the deficiency problem' in generating radically cheap priced original products, an area that advanced country firms have limited experience. Consistent with the above papers, they emphasize the importance of capability building and taking a broader perspective that includes how local entrepreneurs, policy makers and other support organizations can bring about positive social change within the BoP.

The next section provides a brief discussion of some of the underlying roots of the BoP discourse, followed by a literature review of recent papers focused on innovation and entrepreneurship within the BoP, and how they relate to the papers in this







special issue. One objective of this introductory article is to connect the most recent BoP discourse with those published in this special issue and other innovation journal articles that have dealt with innovation for poverty alleviation. Another objective is the identification of key themes that have emerged from this brief literature review. Although the terms 'base' or 'bottom of the pyramid' are new, scholars have long recognized the importance of inclusive growth and that innovation and entrepreneurship can help alleviate poverty. As a result, there are numerous theoretical approaches that provide useful lenses for the BoP. There has also been a shift from focusing on how firms can create markets within the BoP towards working within the BoP that includes not only the development of new markets, but how foreign and local firms. local entrepreneurs, policy makers, NGOs and other support organizations can bring about positive social change. Indeed, a common and important finding from the papers in this special issue is the need to look at BoP innovation as a complex, interactive and idiosyncratic phenomenon. Related to this last point, we discuss calls for further research, specifically the need to better understand the complex, interactive dynamics in a greater variety of countries and settings. Currently, it appears as if the bulk of the BoP research has been concentrated in a handful of countries, yet there remain considerable challenges elsewhere.

#### 2. The roots of BoP innovation

Although a relatively new term, the underlying roots of the BoP literature can be traced back to a rich economic discourse concerned with poverty alleviation. For example, as discussed in Hall and Matos (2010), Adam Smith asserted 'No society can surely be flourishing and happy, of which the far greater part of the members are poor and miserable'. More recently Sen (1997) recognizes that unemployment, lower skills, family crises, lack of political motivation intensifies racial and gender inequalities, and that these costs may not be adequately reflected in market prices. Stiglitz (2002) argues that countries with high levels of social instability and weak public-sector institutions are unlikely to benefit from economic integration into the global economy, whereas North (1990) suggests that inefficient institutions lead to high transaction costs and inefficient markets. These problems have been encapsulated in the term 'social exclusion', the denial of equal access to certain segments of society (Buvinic et al., 2004). George et al. (2012, p. 661) suggest that the inverse is inclusive growth, 'improvements in the social and economic wellbeing of communities that have structurally been denied access to resources, capabilities, and opportunities'. As a solution, they define inclusive innovation as 'the development and implementation of new ideas which aspire to create opportunities that enhance social and economic wellbeing for disenfranchised members of society' (p. 663).

Most BoP research is conceptual or based on exploratory cases, and focused on the MNC perspective. Many of the findings from these studies have been inconclusive (c.f. Prasad and Ganvir, 2005; London and Hart, 2004; Sesan et al., 2013). Others such as Landrum (2007) and Karnani (2007) question whether the global BoP market is large enough to offer substantial growth opportunities for MNCs or if such 'win–win' scenarios are feasible, given that power asymmetries between MNCs and local communities make mutually beneficial outcomes unlikely (Calvano, 2007). All studies call for further research, which have been generalized by Kandachar and Halme (2007) as falling into three areas: (1) balancing economic growth with ecological pressures; (2) the role of technology and innovation and (3) the role of entrepreneurs. This special issue is primarily focused on the latter two issues, although their academic foundations have been heavily influence by studies concerned with corporate social responsibility and calls for a more systemic approach to understanding innovation and entrepreneurial dynamics within the BoP, discussed next.

## 2.1. BoP innovation and corporate social responsibility – win–win opportunities?

The original MNC-BoP perspective is based on the assumption that MNCs benefit by turning impoverished people into consumers while simultaneously improving their standard of living (Calvano, 2007), and as a result is closely aligned with the corporate social responsibility (CSR) literature. For example, Arnold and Williams (2012, p. 55) argue that companies targeting BoP customers must incorporate environmental sustainability criteria into their broader business policies to achieve the desired outcome from their efforts. Ramani and Mukherjee (2014) suggest that the BoP is an attractive topic for firms under pressure from governments, international bodies and NGOs. BoP can coerce firms into improving their CSR by meeting developmental and environmental goals (a 'stick') while also providing them with reputational gains, and thus additional profits (a 'carrot'). They argue that while marketdriven technological innovation may lead to outcomes inconsistent with sustainable development and the welfare of future generations, firms are likely to allocate resources to CSR to ensure that they meet public expectations beyond State norms and regulations, hence, a justification for BoP initiatives exists.

As discussed above, Landrum (2007) and Karnani (2007) question whether such 'win-win' scenarios are feasible. Indeed, more recent research have noted that such initiatives can cause more harm than good, for the company and those they are trying to help. From the company's perspective, Gupta and Pirsch (2014) suggest that marketing discretionary products to poor, vulnerable populations may be scrutinized by their non-BoP consumers for perceived ethical concerns and punish the company for this perceived abuse. Arnold and Valentin (2013, p. 1913) similarly argue that transnational corporations targeting BoP consumers should focus on enhancing capabilities or functioning: 'Ventures that do not have a clear potential to empower the poor, but instead undermine the ability of the poor to achieve basic human rights, may be legitimately characterized as wrongfully exploitative based on the foregoing analysis.' Indeed, Hall et al. (2014a) found that whether for-profit or philanthropic, initiatives targeting poor populations do not always result in successful technology diffusion. For example the development of transgenic Golden Rice (a rice variety genetically modified to provide vitamin A) by a public institution with a social mandate to improve nutrition in poor regions encountered considerable resistance, and as of 2014 had failed to diffuse. Monsanto's transgenic technologies for agriculture generated considerable opposition in Brazil (soybeans) and India (cotton), resulting in costly delays and legal expenses. Ramani and Mukherjee (2014) put an interesting and somewhat inverted twist on this latter case, arguing that, despite opposition, Indian BoP farmers received considerable benefits from the technology, an involuntary form of CSR.

For the perspective of those within the BoP, Hall et al. (2012) found that tourism within the BoP can lead to destructive entrepreneurship (Baumol, 1990), especially when policies are mindlessly focused on tourism indicators (e.g. flights, hotel vacancies, etc.) rather than wider economic and social impacts. BoP initiatives such as microlending can give impoverished borrowers false hope, where for example they are unlikely to succeed in unfavorable contexts, i.e. 'where good intentions can be thwarted by harsh realities' (Chakrabarty and Bass, 2013). Hall et al. (2014) caution that BoP initiatives, even those with philanthropic purposes, may encourage destructive outcomes, for example illicit

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