

A Justice-Oriented Innovation System: A Grounded Theory Approach

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Abstract Researchers are becoming increasingly concerned about integrating the goals of a social justice system with innovation and technical change. Although most of the previous studies concerned the dynamics of the relationship between innovation and social justice, a consistent solution for reconciling these two seemingly conflicting objectives has not been discovered as yet. Prior findings suggest several partial, incoherent, and even conflicting solutions. This paper examines the possibility of the above-mentioned integration goals. Grounded theory is applied to propose a consistent framework of solutions (at the national level), including an innovative social justice system, the necessary ontological supports, and the relevant domestic and international context. This paper also discusses the applicability and implications of this new framework for future research.

Keywords Innovation · Social justice system · Inequality · Grounded theory

Introduction

Recent studies have shown concrete evidence that economic growth fueled by science, technology, and innovative development does not necessarily result in social equality and poverty alleviation (Papaioannou, 2011). As such, social justice and innovation should be treated as distinct objectives requiring independent

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improvement programs and strategies (Joseph, Singh, & Abraham, 2009; Zaicchenko). Currently, there is a heightened interest among researchers to explore how innovation development could be compatible with the objectives of social equality and poverty alleviation. There is also a heightened interest among researchers to explore the possibility of creating a compromise between development of innovation and the objectives of social equality and poverty alleviation in present day.

Most prior studies claimed that innovation and development inevitably increases social inequality: Skill-based technological change is identified as a factor that causes income inequality (Bound & Johnson, 1992; Brito & Intriligator, 1991; Juhn, Murphy, & Pierce, 1991). Cozzens presents a framework to analyze the relation between different types of innovation, namely competence building, process innovation, product and service innovation, and chain innovation and social inequality (Cozzens & Kaplinsky, 2010). Inequality is considered by some researchers as an unavoidable consequence of current policies, frameworks, and models of innovation. For example, by studying the relationship between science and technological policies, and social inequality, Cozzens, Bobb, and Bortagaray (2002) conclude that these policies increase social inequality by affecting the research agenda, employment, public flows of information, and public markets. Moreover, one can say that these frameworks rarely take social issues into account, and therefore it is natural to expect that they would give rise to social inequality (Cozzens et al., 2007).

On the other hand, several researchers have criticized the above-mentioned viewpoints. They believe that developments of innovation and social equality are not inherently controversial (Greenwood, 1999). They also emphasize that there are several other independent factors that can strongly affect this connection, and that there is objective evidence to prove the validity of this premise (Card, Lemieux, & Riddell, 2004; Heathcote, Perri, & Violante, 2010; Iacopetta, 2008; Neckerman & Torche, 2007). For example, while technological development in the US was accompanied by a great increase in social inequality in the 1990s, these phenomena did not occur in other technologically developed countries such as Japan, France, and Nordic countries (Card & DiNardo, 2002). This paper takes this school of thought a step further to study how both innovative development and justice goals can be successfully accommodated in a consistent framework.

In existing literature, one may find different and somehow conflicting dynamics for the relationship between justice and innovation, and the associated solutions for reducing inequality. This is because innovation and its processes can affect social inequality and poverty in many different ways, and is also due to the widespread nature of innovation, and their less studied social aspects. Different authors coming from different perspectives employ different effective, but non-comprehensive dynamics to address the innovation and injustice relationship. Furthermore, they apply a wide spectrum of definitions for “injustice,” such as increased poverty (Altenburg, 2008; Utz & Dahlman, 2007), wage inequality (Angelini, Farina, & Pianta, 2009), wealth inequality (Neckerman & Torche, 2007) or competencies, and opportunity inequality (Arocena & Sutz, 2009; Garicano & Rossi-Hansberg, 2006;

Lundvall, 2011). As a result of these discrepancies, the proposed solutions are not consistent and are frequently conflicted.

This paper is divided into five main sections. In “[Literature Review](#)” section, we examine the existing literature on social justice and innovation, review several previously proposed solutions to adapt innovation, and development with equality concerns and identify the gaps. In “[Research Methodology](#)” section, we discuss the grounded theory as the research method employed in this study. The comprehensive framework of solutions to integrate social concerns and innovation will be elaborated in the fourth section. Finally, the role of key actors in pursuing the solution and their motivations, as well as the limitations of this study, is presented in “[Discussion](#)” section.

Reviewing the Literature Solutions

The current literature on innovation and social inequality can be divided into two main categories. The first category characterizes social inequality as the difference in countries level of development. By focusing on technology as the core of development, they suggest several solutions to catch up. This category by itself comprises evolutionary (Albuquerque, 2005; Cassiolato & Lastres, 2008) and structuralist (Albuquerque, 2005; Ancochea, 2007; Cassiolato & Lastres, 2008) approaches as the main ones as well as some minor approaches (Johnson & Lundvall, 2000; Maciel & Albagli, 2009; Wamae, 2006).

The second category defines inequality in a more general manner, not merely studying inequality by focusing on the development gaps between countries. The approaches to equality offered by this category can be classified into the three general groups: (1) fundamental and non-comprehensive solutions, (2) superficial but comprehensive solutions, and (3) superficial and non-comprehensive solutions.

The first group recognizes the main origins of the discrepancies between equality and popular approaches to development of innovation, and introduces new concepts which result in deep changes in definitions, policy rationales, and innovation models. New concepts such as “below the radar innovation” (Kaplinsky et al., 2009; Prahalad & Hammond, 2002), “the social innovation” (Moulaert & Nussbaumer, 2005; Sharra & Nyssens, 2010), “mutual value creation” (London, Anupindi, & Sheth, 2010), and “proactive equality” (Arocena & Sutz, 2000, 2003) are introduced in this group. Although these approaches include deep changes in concepts, they still are deficient regarding the innovation system. As discussed previously, it is clear why they are called the non-comprehensive approaches.

The second group contains “superficial solutions” as they do not cause crucial changes to the popular concepts but suggests a comprehensive prescription for the modification of innovation system. They include “inclusive innovation systems” (Altenburg, 2008), “disruptive innovation” theory (Hart & Christensen, 2002), and “inclusive innovation” (Utz & Dahlman, 2007).

The second group, despite having a systematic and comprehensive view on social justice, considers equality in its limited sense, namely poverty reduction, and places emphasis on creating some institutions or incentives for pro-poor innovation. In

other words, these solutions try to allocate only some of the benefits of innovation to the poor and do not offer any suggestions for the equitable distribution of all the benefits and opportunities associated with innovation. Some of this group of solutions are “disruptive innovation” (Christensen, Baumann, Ruggles, & Sadtler, 2006), “inclusive innovation” (Utz & Dahlman, 2007), and “inclusive innovation systems” (Altenburg, 2008).

The third group comprises the remaining solutions, which despite proposing some minor modifications, it generally lacks a comprehensive and fundamental approach to the problem. Some instances of these superficial solutions are the government’s intervention (Arocena & Senker, 2003), changing the innovation agenda (Cozzens, Hagendijk, Healey, & Pereira, 2008), diffusing innovation (Papaioannou, 2011), creating learning capabilities (Arocena & Sutz, 2003), and utilizing of them (Soares & Podcameni, 2010), offering innovations adapted to the needs of the poor, and executing institutional reforms for poverty reduction.

From what has been mentioned above, one can deduce that the literature lacks both fundamental and comprehensive solutions that can successfully adapt both the objectives of innovation and social justice. This research is aimed at presenting a consistent framework of a comprehensive solution to bridge the gap between innovation development and social equality goals. This comprehensive framework is aimed to provide policy makers with a rich basis for reforming policies. It is worth mentioning here that contrary to usual belief, pursuing social equality goals based on the current proposed framework will have a constructive impact on the development of innovation.

In this article, social justice refers to a fair distribution of competencies, wealth, and incomes. Furthermore, an equitable distribution of services to provide opportunities to earn a productive income is considered as the most stable approach to eliminate inequality.

Research Methodology

This paper is mainly devoted to proposing a comprehensive framework of solutions, in order to reconcile the goals of innovation and social justice. Due to the lack of thorough prior studies on these issues, an exploratory approach utilizing the grounded theory method is employed.

To date, there has not yet been any realized innovation model developed with social equality considerations; therefore, there are no realized cases to be studied as a part of this paper’s research methodology. Hence, we had to refer to experts using their published works instead of conducting face-to-face interviews, as the very few available experts in this field are geographically dispersed and not easily accessible.

A large number of previous relevant studies are collected as the data source. To fulfill the theoretical saturation requirement, more than 100 articles and books have been studied. Thus, the validity of the proposed framework is fully dependent on the reliability of our data source. The broad categories, categories, and concepts, developed using Grounded Theory method, are illustrated in Tables 1, 2. Table 1 contains the categories reduced in the broad category of “Justice-oriented

innovation system” as the core phenomena, and the concepts grouped in the categories. Other broad categories, and their developed categories and concepts are depicted in Table 2. These tables also contain the main textual evidence confirming the developed concepts. Moreover, some of these pieces of evidence are elaborated in the current section. It should be noted that the evidence cited is not quoted directly.

In the next section, the research results will be explained.

The Framework of Solutions to Adapt Innovation and Social Equality

In this section, we use the grounded theory to propose a comprehensive framework of solutions to concurrently achieve both innovation and social justice goals. The framework of solutions consists of the characteristics of a “justice-oriented innovation system,” the Ontological support for this system, the required context, and the newly opened windows of opportunity to implement the justice-oriented innovation system as its broad categories. In addition, after describing solutions in each broad category, the compatibility of the proposed solutions with innovation considerations is justified.

The conceptual model of the solution is shown in Fig. 1. The solution main categories are explained in the following subsections.

Justice-Oriented Innovation System

As this is the core category of the framework, and crux of this paper’s existence, we start off by explaining what a justice-oriented innovation system is all about. In order to adapt innovation models with the objectives of social justice, some changes should be made in the components of the models such as the main functions and elements. The main characteristics of the justice-oriented innovation model are expressed below.

Broad Perspective Innovation System

The broad perspective in novation system is the most suitable framework for accommodating the innovation model with social justice. According to Soares, the broad perspective innovation system takes into account, besides the elements considered by the narrow perspective (including formal science and technology organizations), the set of governmental policies, financing organizations, and all other agents and elements that affect the acquisition, use, and dissemination of innovations. Thus, it encompasses different interrelated subsystems, which are affected as much by the geopolitical, economic, social, political, and cultural context, where they are inserted (Soares & Podcameni, 2010). Thus, in this model, by getting the actors of public, private, and the third sector close together, more actors would play a role in the process of innovation. Furthermore, this model by considering the socioeconomic profile of the demand (consumption structure, pattern of income distribution, social organization, and demand for social

Table 1 The broad category of “Justice-Oriented Innovation System” (The Core Solution to Converge Innovation with Justice), its developed categories and concepts

Categories reduced to “Justice-Oriented Innovation System”	Concepts	Contextual evidences
Broad Perspective Innovation System	Considering diversified actors in social and economic environments Filling the gap between public, private and third sector of economy	Couto Soares and Cassiolato (2008) Moulaert and Nussbaumer (2008)
New innovation and knowledge dynamics	The expansion of innovation and knowledge dynamics, centered around learning	Arocena and Sutz (2001), Arocena and Sutz (2010)
Diversifying innovation trajectories	Choosing the most inclusive path, among the different trajectories of innovation progress Creating mutual values: a trajectory to direct innovation toward social justice objectives Direction toward the innovation fields, consistent with the objectives of social justice Selecting innovation types that are more compatible with social justice	Arocena and Senker (2003), Kaplinsky (2011), Albuquerque (2005) Cozzens et al. (2002), Arocena and Senker (2003), Hubert (2010) Cozzens et al. (2002), Mackintosh et al. (2007), Altenburg (2008), London et al. (2010) Iacopetta (2008), Utz and Dahlman (2007), Altenburg (2008), Angelini et al. (2009)
Innovation diffusion	Removing the obstacles of diffusion: a key factor to increase the productivity and use of knowledge, and to eliminate inequality Speeding up the innovation diffusion among the regions and the countries Building the capacities and capabilities required for the penetration of the diffused knowledge and innovation Making uniform of the speed and intensity of knowledge and innovation penetration into different sections and regions Creating the informal economy sector’s access to knowledge and innovation to benefit all levels the society from produced knowledge	Utz and Dahlman (2007), Buchanan et al. (2011), Mackintosh et al. (2007), Pogue (2005) Buchanan et al. (2011) Arocena and Sutz (2009), Kaplinsky (2011) Albuquerque (2005) Buchanan et al. (2011), Mackintosh et al. (2007), Hart and Christensen (2002), Altenburg (2008)

Table 1 continued

Categories reduced to “Justice-Oriented Innovation System”	Concepts	Contextual evidences
Considering the ignored demands	<p>Paying attention to the base of pyramid markets: a main factor to achieve long-term waves of growth and social equality</p>	<p>Hart and Christensen (2002), Kaplinsky et al. (2009), Anderson and Billou (2007)</p>
Converging entrepreneur, worker and society interests	<p>Eliminating internal markets’ restrictions in south countries: a means of inclusive development</p> <p>To make a convergence between the interests of the worker and those of the employer; by providing homogeneous learning opportunities and participatory governance in workplace; base on stewardship theory and learning organization</p>	<p>Kaplinsky et al. (2009), Kaplinsky (2011), Albuquerque (2007), Lastrès and Cassiolato (2003)</p> <p>Cozzens et al. (2002), Lundvall (2011), Garicano and Rossi-Hansberg (2006), Angelini et al. (2009), Kaplinsky (2011)</p>
Long-term and prospective investment	<p>To make a convergence between the interests of the entrepreneur and those of the society; using a variety of approaches to entrepreneurship based on self-actualizing man model</p> <p>Investment for the reproduction and accumulation of all types of capital (especially human and social capital)</p> <p>Extending the time horizons of the firms for profit return financing long-term objectives, a way to achieve sustainable firm success and justice</p>	<p>Neckerman and Torche (2007), Prahalad and Hammond (2002), Utz and Dahlman (2007), Couto Soares and Cassiolato (2008)</p> <p>Cappelen (2006)</p> <p>Heathcote et al. (2010), Cappelen (2006), Cassiolato et al. (2009), Lastrès and Cassiolato (2003), Sharra and Nyssens (2010), Arocena and Sutz (2009)</p>

Table 2 Broad categories, their developed categories and concepts (except the central phenomenon: the Justice-Oriented Innovation System)

Solution framework components	Categories	Concepts derived from text interpretations (included textual evidences)
Justice-supporting ontology	Social-based ontology of innovation	<p>The redefinition of innovation as a broad incremental entity based on a collective will (Iacopetta, 2008; Arocena and Senker, 2003; Moulart and Nussbaume, 2008; Mackintosh et al., 2007; Bright and Godwin, 2010)</p> <p>Use of non-Schumpeterian approaches in innovation processes (Kapilinsky et al., 2009; Hart and Christensen, 2002)</p> <p>To change in the incentives of innovation (Arocena and Senker, 2003; Adams and Hess, 2011)</p> <p>To achieve a wide range of objectives, by the means of social innovation (Sharra and Nyssens, 2010; Moulart and Sekia, 2003)</p>
Social-based ontology of economy, the context for the realization of justice-supporting innovation		<p>To use the Norms of social interaction in economy (Hazelkorn 2009; Moulart and Nussbaume 2008; Gibson-Graham and Roelvink 2009; Valentinov 2010)</p>
Social-based ontology of development pattern		<p>A change in the investment norms (Gibson-Graham & Roelvink, 2009; Moulart & Ailenei, 2005)</p> <p>Independent plans for social objectives of innovation, convergent with economic programs (Albuquerque, 2005; Haugh & Kitson, 2007; Mackintosh et al., 2007; Moulart & Mehmood, 2010; Papaioannou, 2011)</p> <p>Considering justice as a necessary condition to achieve development (Cassiolato et al., 2009; Papaioannou, 2011)</p>
Pragmatic ontology		<p>The negative effects of inequality on the economic growth and development (Aghion, Caroli, & Garcia-Penalosa, 1999; Ehrhart, 2009; Zweimüller, 2000)</p> <p>The negative effects of inequality on innovation (direct or indirect effects by affecting human capital, social capital, etc.) (Foellmi & Zweimüller, 2006; Grossmann, 2008; Heathcote et al., 2010)</p> <p>The negative effects of inequality on social cohesion and socio-political stability (Albuquerque, 2007; Lundvall et al., 2009a, b)</p>

Table 2 continued

Solution framework components	Categories	Concepts derived from text interpretations (included textual evidences)
New windows of opportunity	Theoretical new windows of opportunity, as a basis to realize justice-oriented innovation system	<p>Recently proposed types of innovation, which are consistent with the objectives of justice (Christensen et al., 2006; Hart & Christensen, 2002; Hubert, 2010; Immelt et al., 2009)</p> <p>Reforms in innovation models (Albuquerque, 2005; Altenburg, 2008; Arocena & Sutz, 2000; Buchanan et al., 2011; Kaplinsky et al., 2009)</p> <p>New economic foundations, consistent with justice (Gibson-Graham & Roelvink, 2009; Graefe, 2001, 2006; Monzon & Chaves, 2008)</p> <p>Development theories concerning about the social issues (MacCallum & Moulaert, 2009; Moulaert, 2000; Moulaert & Nussbaumer, 2005)</p>
International context	Practical new opportunity windows as initiator to justice-oriented innovation system	<p>Realized cases (in the subnational level) succeed to achieve both justice and innovation goals (Abramo, 2009; André et al., 2010; Rodriguez, 2009; Utz & Dahlman, 2007)</p>
International context	To eliminate the hierarchy established between the countries, by capitalism: a context for the participation of all economies in innovation	<p>Breaking the order of margin/center, and assigning central roles to the so-called marginal countries (Freeman & Perez, 1988)</p> <p>Providing opportunities for public interest of the potential benefits of globalization (Lastres et al., 2003)</p> <p>Opportunities for public interest of the benefits of internationalization of innovation process (global innovation chain) (Arocena & Senker, 2003; Kaplinsky et al., 2009)</p> <p>The southern countries' use of the potential benefits of MNCs' activities (Arocena & Senker, 2003)</p> <p>Institutional reforms at the global level (Buchanan et al., 2011; Johnson & Lundvall, 2000; Pogge, 2005)</p>

Table 2 continued

Solution framework components	Categories	Concepts derived from text interpretations (included textual evidences)
Domestic context	A strong responsible government for a simultaneous advancement in the objectives of justice and innovation	<p>The government's role as guiding and complementing the private (Altenburg, 2008; Cassiolato & Lastres, 2008; Cozzens et al., 2002; Stern, 2002)</p> <p>Government's in-depth attitude toward the needs of the disadvantaged groups and methods that best meet them (Couto Soares & Cassiolato, 2008; Utz & Dahlman, 2007)</p> <p>The Government's role in reforming state institutions (Altenburg, 2008)</p> <p>The Government's role in reforming the markets (Altenburg, 2008; Utz & Dahlman, 2007)</p>
	Economic growth: a necessary condition for achieving justice	<p>Appropriate atmosphere for economic growth (Altenburg, 2008; Lastres & Cassiolato, 2003; Utz & Dahlman, 2007)</p>
	Organizing the institutions affecting inequality	<p>Redirecting economic growths toward elimination of poverty (Kaplinsky et al., 2009)</p> <p>The equality of the institutions related to labor force (Cappelen, 2006; Card et al., 2004; Card & DiNardo, 2002; Cozzens et al., 2002)</p> <p>The quality of the rules and policies (Freeman, 2002; Heathcote et al., 2010; Neckerman & Torche, 2007; Papaioannou, 2011)</p> <p>The condition of local institutions (Arocena & Senker, 2003; Mackintosh et al., 2007)</p>

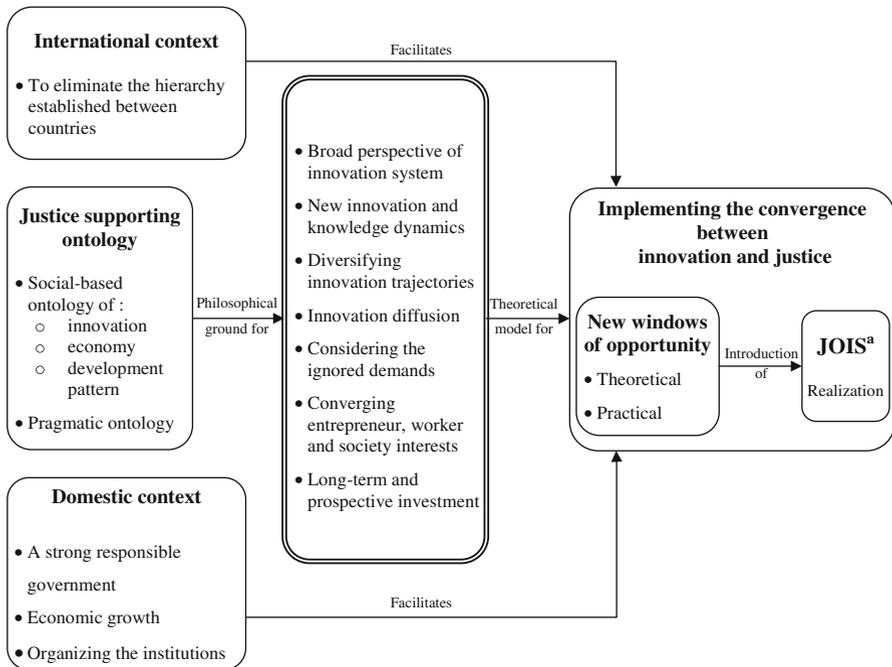


Fig. 1 Comprehensive framework of solutions and its components. *JOIS* Justice-Oriented Innovation System

infrastructure) (Soares & Podcameni, 2010) provides a context for considering new stakeholders who will receive the benefits of innovation.

In addition, some authors’ discussions about the broad perspective to innovation system assert the greater relevance of this perspective for understanding the inequality problems. For example, Cassiolato and Soares note the possibility of regarding the co-evolution between innovation and inequality (Cassiolato, Lastres, & Maciel, 2003). Some other researchers believe that, by considering the different social, cultural, economic, and political aspects of innovation, this model is more compatible with the necessities of developing countries, and therefore, bring forth the concerns of reducing inequality and development gaps in these countries (Soares & Podcameni, 2010).

The broad understanding of innovation system has a greater analytical and normative capacity (Freeman, 1987; Lundvall, 1985). Specifically, taking into account a wider range of actors and agents, the potentials of the third sector and social motives could be involved in innovation behavior, which results in changes in favor of innovation. Consequently, the broad perspective of the justice-oriented innovation system also can be considered compatible with innovation goals.

New Innovation Dynamics

The extension of innovation and knowledge dynamics beyond the R&D efforts, which includes DUI learning and the non-Schumpeterian approaches, is another

path to a justice-based innovation system. The DUI mode of innovation, including “Learning by doing,” “learning by using,” and “learning by interacting,” gives its focus on implicit knowledge and interactive learning, and is distinct from R&D activities, and creating and utilizing explicit codified knowledge (STI mode of innovation) (Arocena, Sutz, & Syd, 2000; Jensen, Johnson, Lorenz, & Lundvall, 2007).

By prioritizing the tacit mode of knowledge and emphasizing the learning on the job, the DUI innovative activities involve many excluded actors, specifically with lower education levels and in low-tech industries, even in agriculture sector. Also, by defining the interaction with external customers as an innovation dynamic, this mode of innovation gives users the opportunity to express their real needs directly to the producers.

Introducing creative creation by Hart and Christensen (2002), as a new dynamic of innovation that is more compatible with the social justice goals, also confirms the importance of new dynamics of innovation as a path to social justice.

However, since the STI mode constitutes only one of the pillars of the learning and innovation process, and much learning, especially of tacit and localized knowledge is through the DUI mode (Lundvall, Joseph, Chaminade, & Vang, 2009a, b), innovation process can better be explained by taking into account these modes of innovation and a guiding framework when it comes to inform innovation policies.

Diversifying the Orientation of Innovation

This solution is based on the assumption that innovation does not necessarily have a single route; therefore, changing the orientation of innovation could be another approach to the justice-based innovation system. This approach is due to the fact that there are other factors, other than economical and technical ones, which could affect the distribution of innovation resources.

Introducing areas of innovation, which have both productive and redistributive impacts by some authors, confirms the suggested solution to equality. Health, housing, and nutrition are some of these areas that are introduced by Porter and Kramer (2011). Altenborg (2008) recommends areas more profitable for disadvantaged groups e.g., agriculture. Also, Porter proposes areas that are able to create mutual value which could reduce poverty and inequality (Porter & Kramer, 2011).

Meanwhile, presentation of some types of innovation by researchers, which is in favor of the objectives of social justice, is another support for the proposed approach to justice-oriented innovation system: “inclusive innovations” (Altenburg, 2008; Utz & Dahlman, 2007), price-reducing innovations (Kaplinsky, 2011; Kaplinsky et al., 2009), and innovations which can be easily imitated are examples of these innovation types.

This approach reveals that the development of knowledge and innovation does not have a “singular route.” Therefore, this solution can be adjusted to fulfill the requirements of both innovations, as well as social justice goals. On the other hand, these new orientations and routes will open new horizons for the development of

innovation which has been neglected and as a result, more opportunities would be provided.

Innovation Diffusion

The diffusion of innovation is one of the most important approaches toward the justice-oriented innovation system. Promoting the diffusion of innovation could help reduce poverty and inequality, while hindering its diffusion results in domination of some special groups and exclusion of some others. Therefore, the removal of obstacles hindering the diffusion of innovation is a possible solution to reduce inequality. Some researchers' emphasis on the avoidance of monopolization and commoditization of knowledge (Hollis & Pogge, 2008; Lastres & Cassiolato, 2003) and recommendation to reform the IPR system (Buchanan, Cole, & Keohane, 2011; Hollis & Pogge, 2008; Pogge, 2005) as solutions to reduce inequality are some evidence corroborating the proposed approach.

Increasing the pace of diffusion, its uniformity (among regions and people), and the capacity to absorb diffused innovation are other important solutions. According to Buchanan, the use of incentive policies promoting the diffusion of innovation (Buchanan et al., 2011), along with removing the structural obstacles and social factors blocking innovation diffusion could help in reducing inequality. Furthermore, Utz and Dahlman (2007) suggest promoting the cooperation between different economic sectors (public, private, and the third sector) and making research results public, whereas some authors note the use of inclusive and large-scale innovations (Pralhad & Hammond, 2002) even for the informal economic sector (Utz & Dahlman, 2007). On the other hand, Wamae (2006) has discussed that it is crucial for developing countries to build the required capacity to absorb the diffused innovation. These are some evidences supporting the solution.

Diffusion of innovation is one of the functions of national innovation systems (NIS), and even one of innovation types in the broad view of NIS (Lundvall, 2007), so the proposed solution spontaneously boosts innovation.

Considering the Ignored and New Demands

Paying attention to the neglected markets at the base of the economic pyramid, by seeing unmet needs of the disadvantaged groups, would be another solution to achieve a justice-orientated innovation system. In addition, expanding markets of developing countries is essential for inclusive development, and reducing inequality.

Kaplinsky's emphasis on eliminating the dominance of multinational corporations (MNCs) on local markets (Kaplinsky, 2011), Lastres et al's discussion in searching for new niche markets (Lastres, Cassiolato, & Maciel, 2003), Altenborg's recommendation to make access to export markets (Altenborg, 2008), and changing the poor's consumption patterns are some authors' viewpoints in achieving greater equality, confirming market expanding as a solution. On the other hand, meeting the needs accumulated in the markets at the base of the pyramid and market expansion provide new innovation opportunities (Hart & Christensen, 2002; Kaplinsky et al.,

2009). This justifies our previous claim that justice-based approaches to innovation could also promote development of innovation.

Entrepreneur, Worker, and Society's "Interest Convergence"

Finding a convergence among workers, entrepreneurs and society's interests can reconcile justice and innovation goals in innovation models. "Learning organization" and "stewardship theory" presented by Davis can provide the theoretical basis of this approach to justice-oriented innovation system. According to Davis's theoretical approach,

"Managers and organizations are seen as agents who "will not act to maximize the returns to shareholders unless appropriate governance structures are implemented in the large corporations to safeguard the interests of shareholders." (Davis, Schoorman, & Donaldson, 1997)

Some authors' propositions can also confirm this approach: for example, Lundvall (2011) emphasizes on providing opportunities of interactive and "discretionary learning" in the workplace, and increasing the degree of freedom allowing the worker to organize his work activities, and Garicano and Rossi-Hansberg (2006) discuss the impact of flattening the knowledge-based hierarchy of the workers on reducing inequality.

It is also important to converge the interests of the entrepreneur with the interests of society. The "self-actualizing man" model presented by Argyris (which embodies serving oneself through service to others), as well as a shift from shareholder's rights to a stakeholder value regime, would be considered as the theoretical bases for these interests to come together.

The model of man in stewardship theory which Argyris (1973) calls the "self-actualizing model" is rooted in a broader view of human behavior and suggests that these stewards prefer collectivistic behaviors that have higher utility than individualistic, self-servicing behaviors by serving others, showing altruism and generosity (Davis et al., 1997).

One of the other solutions to converge entrepreneurs and societies' interests is induced from a variety of approaches to entrepreneurship presented by several authors: Umamohan's explanation on grass-root entrepreneurship (Umamohan & Rao, 1992), Sharra's idea about social entrepreneurship (Sharra & Nyssens, 2010), and Hart's large-scale entrepreneurship approach (Hart & Prahalad, 2002) are some of these approaches.

Also, the concept of "Shared value"—discussed by Porter—would be the key element in creating social and economic value simultaneously. This includes all practices to increase competitiveness of a company and economic wealth, concurrent with creating social value (Porter & Kramer, 2006, 2011). Porter discusses that companies are focused on short-term revenues and look at value narrowly instead of approaching their customers' needs, with a view for long-term success. Thus, they remain trapped in an outdated approach to value creation (Porter & Kramer, 2006, 2011).

The aforementioned solutions are in complete agreement with promoting innovation. Companies that provide insight-generating and interactive learning opportunities for all levels of their workers actually reinforce innovation dynamics. Furthermore, neither new types of entrepreneurship, nor shared value idea do not hinder the mainstream innovative activities, but rather expands the conceptual and operational capacity of the existing concepts.

Long-Term and Prospective Investment

The removal of the financial objective's domination in decision-making is a good solution for a justice-oriented innovation system. Reproducing all types of capitals, such as the human and social capital, and adopting a long time horizon for investment are another paths to reduce inequality and fulfill unmet needs.

Porter's discussion about the corporation's view of value supports the proposed solution. According to the Porter's discussion, if the firms change their views on "the value," they would meet their customers' needs and undertake social responsibilities, as factors which can enhance their profit and long-term success (Porter & Kramer, 2006, 2011). Cozzens' explanation about impacts of reproducing human capital on increasing capabilities and alleviating inequality supports this solution, too (Cozzens et. al., 2008). Furthermore, since inequality prevents building social capital and trust (Lundvall, 2011), reducing the gaps in an unequal society is a prerequisite for social capital increase.

The proposed approach to a justice-oriented innovation system has no negative impact on the development of innovation: the reproduction of all types of capital addresses the innovation issues while simultaneously enhancing equality. In the learning economy, intellectual and social capital are important elements in the development process (Lundvall, Johnson, Andersen, & Dalum, 2002). Furthermore, because the uninhibited rule of finance capital gets into serious conflict with some of the fundamental prerequisites for the sustainability of the learning economy (Lundvall et al., 2002), countering the short-term view of financial capital also provides a fertile atmosphere for radical and high-risk innovations.

The Ontology Support of Justice-Oriented Innovation

Ontological approaches are the main sources of innovation models,¹ any slight change in them leads to vast changes in innovation models. There are two possible ontological approaches to support justice issues in the innovation models, namely "pragmatic ontology" and "social-based ontology." Although both of these approaches can cause changes in innovation models to make them more consistent with social justice concerns, there is a difference between these two approaches: social-based ontology results in profound changes in innovation models and greater compatibility with justice goals, whereas the pragmatic approach is confined to only the minimum necessary changes with a little compatibility with justice goals.

¹ The models (or frameworks) that explain the innovation process; whereby the most popular ones are linear, interactive, and systemic models.

Justice-oriented Innovation models, which stem from the pragmatic approach, do not consider social justice concerns to be of intrinsic importance, but these concerns are inevitably taken into account due to the negative impact of inequality, which give rise to social ills, social exclusion, and instability. Furthermore, the negative influence of inequality and poverty on innovation is another factor, forcing these models to take it into account. That is while, social-based ontology radically redefines the innovation, economy and development concept.

Ontological Viewpoint of Innovation

In this ontology, innovation is considered as a multidimensional process, based on interactive deliberate efforts, in which individualistic and limited approach to innovation is refused. The recognition of innovation as a socially embedded and interactive process, as opposed to recognizing it as invention, makes the neglected actors involved in the innovative activities, their roles and their share considered in the benefits of innovation, and consequently, getting closer to equality.

Besides relying on the multidimensional and complex viewpoint to innovation, new incentives for innovative activities (in addition to profit-based motivation) are introduced that facilitate taking social justice concerns more seriously. The expansion of innovation dimensions—from marketing and business, to social change, change dimension, and value dimension—presented by Kahle (Kahle), supplemented with new incentives confirms this viewpoint to innovation. Lundvall's explanation about innovation also confirms the proposed ontological viewpoint to innovation. Lundvall believes that

Learning and innovation is best understood as the outcome of interaction. Perhaps the most basic characteristic of the innovation system approach is that it is 'interactionist,' ... interactive learning is a socially embedded process and that therefore a purely economic analysis is insufficient (Lundvall, 2007)

Besides what has been discussed above, this viewpoint also treats knowledge as an abundant resource that is socially constructed. Lastres's discussion about the nature of knowledge corroborates this viewpoint. Referring back to the nature of knowledge, and in contradiction to the attitude that defines it as a rare and privatized commodity; he defines knowledge as something abundant and non-personalized identity (Lastres et al., 2003). Also, considering the importance of tacit knowledge embodied in the minds of agents, depicted by Lundvall (2007), and traditional knowledge, presented by Arocena and Senker (2003), are of the characteristics of this ontological view point. Therefore, the social-based ontology of innovation partake many deprived people in the advantages of learning process, prevents the monopolization of knowledge and the using of it as a power tool, facilitates knowledge diffusion and leads to innovation models that are more compatible to equality.

Ontological Viewpoint of the Economy

Another solution reconciling innovation and justice is social-based ontology to economy. The resulting economy would be a context for the realization of a

social-based innovation. In this ontology, some new dynamics (apart from the structural dynamics) and new norms of economic behavior (e.g., the exchange, sharing, and investment norms) are introduced. Capital is redefined, and new actors are participating in innovative activities.

Considering close, cooperative, and long-term interactions, as economic norms that are in favor of equality, by Cappelen (2006) corroborates the aforementioned viewpoint to economy. Furthermore, a new theory of capital fitting the community development logic by Moulaert and Nussbaumer (2005) is further evidence confirming this solution. They extend the concept of capital and stress the necessity of reproducing all social, human, financial, and natural capitals. Cozzens's suggestion on involving the marginalized people in various economic activities and decision-making as an approach to more equality (Cozzens et al., 2008) is another confirmation to the characteristics of the proposed social-based economy.

Ontological Viewpoint of Development

Social-based development can be reached by changing to new ontology. In this new ontology, development is regarded as a multidimensional and complex process, which considers social justice issues concurrent with economic development. Challenging the popular reductionist approach to development (e.g., neoclassical regional-growth models) by Moulaert and Nussbaumer, and conceiving development on the basis of a broader ontology (Moulaert & Nussbaumer, 2005), confirms the above viewpoint toward development.

Making profound changes in the ontological foundations of innovation models (social-based ontology), not only is a solution to achieve social justice, but also improves innovation process. Defining innovation as an interactive and socially embedded process is consistent with national system of innovation model (Lundvall, 2007). Also, introducing new dimensions of innovation proposes new opportunities and potentials (i.e., incentives and actors), which open up new horizons for innovative activities. For example, innovation for fulfilling the unmet needs and some new approaches of innovation, such as the creative creation, will bring a firm's attention to new and neglected opportunities (Hart & Christensen, 2002).

Additionally, diversifying the norms of social interaction in the economy is in favor of one of the key dynamics of innovation. That is because, exchange of know-how would not be possible in a purely competitive economy (Lundvall & Johnson, 2003), and therefore new norms of cooperation in social economy would enhance the development of innovation. New investment norms will also help the reproduction of all types of capital (in addition to financial capital) as the important elements in the development process (Moulaert & Nussbaumer, 2005).

New Windows of Opportunity

In this subsection, some approaches to realize the proposed solutions will be presented. These approaches include theoretical and practical types. Theoretical types are based on modifications in the traditional definition of innovation, economy, or development, which are more compatible with justice, and the practical

types are real cases which bring about more but limited equality, along with advancing innovation. Although a few number of solutions proposed in this study have been realized in practical approaches, these cases provide promising opportunities and guidelines for a thorough realization of presented framework of solutions.

Inspiring Theoretical Advances Nourishing Our Framework

New types of innovation or modified innovations that are more compatible with justice, social-based economy, and development models are newly developed theoretical basis for the realization of a justice-oriented innovation system.

There are a plausible number of proposed innovation types, corroborating the reality of new windows of opportunity to achieve both social justice and innovation goals: “social innovation” (Moulaert, Martinelli, Swyngedouw, & Gonzalez, 2005), “reverse innovation” (Immelt, Govindarajan, & Trimble, 2009), “grass roots innovation” (Seyfang & Smith, 2007), and “disruptive innovation” (Christensen et al., 2006) are some of these new innovations, each of them opens a new window in the theory, mentoring our proposed framework.

Also, “inclusive innovation system” (Altenburg, 2008), “sustainable system of competence building and innovation” (Lundvall, 2007), “proactive equity” (Arocena & Sutz, 2003), “creative alliance” (Hazelkorn 2009), and the “below radar innovation” (Kaplinsky et al., 2009) are some of the relevant models proposed by authors, which could be regarded as theoretical windows of opportunity. Some of the new economic and development theories could also be considered strong evidence. Some examples of these inspiring theories are “social economy” (Moulaert & Ailenei, 2005) and “community economics” (Shaffer, 1989) in economics, and “integrated area development” (Moulaert, 2000) and “community development” (Ife, 1995) in development theories.

Inspiring Realizations

As mentioned above, some cases’ experiences are such as windows to introduce the justice-orientated innovation system, and applying the proposed solutions by providing practical guidelines. Several authors have studied cases, which could be considered as the realization of some of the solutions presented to reconcile innovation and equality goals.

Rodrigo has studied the actualized case of the radical social innovation in Trinidad Nova in Spain (Rodriguez, 2009). He argues that in the past decade, the approaches to social innovation have extended and strengthened the integrated spatial development approaches. Utz and Dahlman and Abramo present other examples of successful social innovations in some cities in Latin America (Abramo, 2009; Utz & Dahlman, 2007). Furthermore, Utz and Dahlman explain that coherent programs to foster the “pro-poor,” “grass root,” and “inclusive innovations” have been executed successfully in countries such as India (Utz & Dahlman, 2007).

Some other case studies by André are successful realizations of social economy. These cases include Mondragon (Spain), Ethnic Entrepreneurship (Germany),

CovaDeMoura, Portugal), and Credal (Belgium) (André, Abreu, Hamdouch, & Harrisson, 2010). Also, “Cooperatives” and “social enterprises” can be regarded as new types of economy based on new economic norms.

Domestic Context

At national level, a strong responsible government is needed to motivate, facilitate, provide incentive, and complement the private sector to achieve justice and innovation goals. Also, the government’s comprehensive attitude to the needs of disadvantaged groups is essential to make the proper decisions to meet their needs. Utz confirms the necessity of providing such

While handing out basic goods can address the problem to some extent, a comprehensive solution should encompass capacity building and offering opportunities for a stable income. (Utz & Dahlman, 2007)

According to Altenborg, Utz and Dahlman’s emphasis on the economic growth, as a prerequisite of social equality (Altenborg, 2008; Utz & Dahlman, 2007). Some other researchers stress on the requirement to economic growth too, but discuss on the composition of this growth—the weight given to different social and environmental parameters (Kaplinsky et al., 2009); therefore, new national development strategies with coordination across different policy areas (social policy, economic policy, education policy, environmental policy, etc.) are another solution to reconcile innovation with justice.

Institutional context and regulations are of the most important domestic conditions for justice-oriented innovation system. Several authors’ discussions confirm this, by recommending to reform the public sector institutions and market (Altenborg, 2008), and to regulate organizations associated with the labor force (e.g., unions and wage-setting institutions) (Neckerman & Torche, 2007). Besides, some authors note the importance of quality of laws and policies (e.g., private property laws (Cappelen, 2006), redistributive policies, and antitrust laws) (Neckerman & Torche, 2007), and the status of local institutions (e.g., the third sector institutions and local institutions) (Hart & Christensen, 2002). Policies regulating the interaction with multinational companies (MNC’s) are other institutional context, vital for equality. Although interacting with multinational companies may provide some opportunities for developing countries (via the connection of markets in developing countries with developed economies, providing new job opportunities, resources to create an advance complex commercial infrastructure, distribution channels and communication networks (Hart & Christensen, 2002)). Unless there is substantial indigenous competence base, MNCs have not substantial spillovers.

Indeed, the aforementioned proposed solution does not inherently disagree with the development of innovation. As emphasized above, the proposed solutions are mostly concentrated on the composition of development, while indicating economic growth as a prerequisite for justice.

International Context

Reforms in the international context to create a more egalitarian innovation system require homogenization in economic and political relations between the countries, and removing the imposed hierarchy by capitalism. These reforms provide opportunities for effective participation of all countries in innovation process and benefitting from its revenue.

The International context's requirements explained above are confirmed by some authors' discussions: Cassiolato has discussed that it is vital periphery countries that make an effort to eliminate the effects of the monopoly of resources and markets, and try to become technologically independent (Cassiolato, Pagola, & Lastres, 2009). Likewise, Lastres believes that the removal of some of the monopolies created by law, or by MNCs (monopolization of knowledge, commerce, technology, learning, and research), and regulating the international markets will prepare a proper context for most countries to enjoy the potential benefits of globalization (Lastres & Cassiolato, 2003).

Lastres and Altenborg discuss that the redefinition of international value chains, the distribution of strategic activities among the countries in the north and south (Lastres & Cassiolato, 2003), along with the elimination of the MNCs' domination on the research agenda (Altenborg, 2008) will also provide a context for countries to receive the benefits of globalizing innovative processes.

Furthermore, the reformation of some of the international institutions can also reduce inequalities. Buchanan and Pogge's suggestions about the establishment of international institutions reinforce social justice and facilitate innovation diffusion; the reformation of IPR and TRIPS, and "agenda setting" at finance institutions confirms this solution (Buchanan et al., 2011; Pogge, 2005). The proposed solutions above are mainly focused on filling the technological gaps (differences in accesses) and innovation gaps (differences in capabilities) at different levels (i.e., company, regional, and national). As a result, these solutions create new opportunities for productive and sustainable incomes, and promote fair distribution of competencies, wealth, and income. Finally, a justice-oriented innovation system is realized.

Discussion: Motivations to Follow the Solutions

The incentives for the actors to pursue the presented framework of solutions can be divided into two main categories; which stem from two different supporting ontologies of justice-oriented innovation system. The intrinsic importance of achieving justice in the social-based ontology provides enough motivation to adopt these solutions. However, achieving this objective in the pragmatic approach is not of paramount importance, and thus, it is necessary to draw key actors' attention to some neglected opportunities, provided by the proposed solutions.

It is a blessing for supporters of a pragmatic approach that the proposed solutions do not contradict with innovative development concerns. Moreover, as described, the proposed framework includes solutions that not only pose no negative effects on innovation, but also most of them could even boost innovation. Rising social

movements against poverty and inequality will also force these supporters to pursue these solutions.

The expected successes of firms and business interests, resulting from the some of solutions, are the other forms of motivation. Creating mutual value (London et al., 2010) is one of these types of incentives. Mutual value includes all actions that follow an increase in the firms' competitiveness and economic wealth, along with social benefits

Most of the firms have a traditional viewpoint to value creation where they merely focus on short-term revenues. However, they need to realize that by approaching the unmet needs of customers, they can guarantee long-term success, which is another form of motivation. (Porter & Kramer, 2006)

The great economic opportunities available at the base of the economic pyramid are another incentive. Creating new opportunities helps business growth. According to some studies, conventional markets are saturated that have few significant growth opportunities, while the base of the pyramid is completely unsaturated. It is interesting to note that at the base of the pyramid, the innovators just compete against non-consumption—that is, they offer a product or service to people who would otherwise be left out entirely or poorly served by existing products and who are, therefore, quite happy to have a simpler, more modest version of what is available in high-end markets—therefore, that is the second reason why these markets are often better for new growth businesses (Hart & Christensen, 2002).

Thus, there are promising motivations for all actors with different ontological approaches, and at different levels, to pursue the proposed solutions, and actively participate in realizing the justice-oriented innovation system.

Conclusion

Along with an increasingly positive attitude toward the social impacts of innovation progress, researchers are increasingly concerned about the convergence between the objectives of social justice and innovation. Although, most of the previous studies considered the dynamics of the relationship between innovation progress and social justice, a consistent solution to reconcile these two somewhat conflicting objectives has not been addressed yet. The researchers are motivated to consider inequality issues due to the intrinsic importance of social justice, as well as the negative impacts of inequality and poverty on crucial social factors, such as social stability and inclusions.

This research showed that social equality and innovation are not inherently controversial. Furthermore, a framework of consistent solutions to accommodate the two is presented, and the compatibility of social justice concerns with innovation goals is justified. This framework propose a comprehensive prescription to justice-oriented innovation system, as well as the Ontological support for this system, the required context, and the newly opened windows of opportunity to implement the justice-oriented innovation system.

The presented solutions could be followed by different actors—in different sectors of economy—and through different motivations. Obviously, the government has the greatest responsibility for the promotion of social justice. The government has the duty to pursue the solutions that have the least stimuli for other economic actors, and also to provide the necessary incentives to stimulate other sectors. Additionally, the government needs to create opportunities to build and utilize innovation capacities and capabilities at all levels of society, and remove the obstacles of participation in innovation efforts.

The private sector can participate in the realization of some the solutions, too. Besides, in this study, the incentives for private sector to pursue these solutions were introduced. The economic benefits of mutual values and the large economic potential at the base of the pyramid are some of these motivations. Furthermore, the third sector's participation in innovation processes promotes implementing many of the solutions, that are less attractive to the private sector.

In short, it can be concluded that it is possible to achieve both the objectives of innovation and social justice, if some crucial conditions are met: (a) the government needs to bear the responsibility of establishing justice and balancing the temporary/sustained and individual/social interests. (b) Private firms pursuing a long and sustainable success should be led into making innovative efforts consistent with social justice. Therefore, avoiding temporary (and often early return) interests and planning for a sustainable and greater (and often later return) interest is the essence of all the proposed solutions.

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References

- Abramo, P. (2009). Social innovation, reciprocity and the monetarization of territory in informal settlements in Latin American cities. In D. MacCallum, F. Moulaert, J. Hiller & S. Vicari Haddock (Eds.), *Social innovation and territorial development*. (pp. 115–130). Ashgate Publishing Company.
- Adams, D., & Hess, M. (2011). Social Innovation and Why it has Policy Significance. *Economic and Labour Relations Review*, 21(2), 139.
- Aghion, P., Caroli, E., & Garcia-Penalosa, C. (1999). Inequality and economic growth: The perspective of the new growth theories. *Journal of Economic Literature*, 37(4), 1615–1660.
- Albuquerque, E. M. (2005). *Inadequacy of technology and innovation systems at the periphery: Notes on Celso Furtado's contributions for a dialogue between evolutionists and structuralists*. Cedeplar: Universidade Federal de Minas Gerais.
- Albuquerque, E. M. (2007). Inadequacy of technology and innovation systems at the periphery. *Cambridge Journal of Economics*, 31(5), 669–690.
- Altenburg, T. (2008). Building inclusive innovation systems in developing countries-why it is necessary to rethink the policy agenda. In *GLOBELICS 6th international conference, Mexico City, Mexico, 2008*. Georgia Institute of Technology.
- Ancochea, D. S. (2007). Anglo-Saxon structuralism versus Latin American structuralism: Latin American development thought in comparative perspective. In E. P. Caldentey & M. Vernengo (Eds.), *Ideas, policies and economic development in the Americas* (pp. 208–227). New York: Routledge.
- Anderson, J., & Billou, N. (2007). Serving the world's poor: Innovation at the base of the economic pyramid. *Journal of Business Strategy*, 28, 14–21.
- André, I., Abreu, A., Hamdouch, A., & Harrisson, D. (2010). *Labour market, employment strategies and social economy*. Lisbon: CRISES, Centre de recherche sur les innovations sociales.

- Angelini, E. C., Farina, F., & Pianta, M. (2009). Innovation and wage polarisation in Europe. *International Review of Applied Economics*, 23(3), 309–325.
- Argyris, C. (1973). Organization man: Rational and self-actualizing. *Public Administration Review*, 33(4), 354–357.
- Arocena, R., & Senker, P. (2003). Technology, inequality, and underdevelopment: The case of Latin America. *Science, Technology and Human Values*, 28(1), 15–33.
- Arocena, R., & Sutz, J. (2000). Looking at national systems of innovation from the South. *Industry and Innovation*, 7(1), 55–75.
- Arocena, R., & Sutz, J. (2001). *Revisiting Nelson and Winter from the South: "Learning by Solving" in Underdeveloped Countries*. Paper presented at the DRUID Nelson and Winter Conference, Aalborg.
- Arocena, R., & Sutz, J. (2003). Inequality and innovation as seen from the South. *Technology in Society*, 25(2), 171–182.
- Arocena, R., & Sutz, J. (2009). Sistemas de innovación e inclusión social. *Pensamiento Iberoamericano*, 5, 99–120.
- Arocena, R., & Sutz, J. (2010). Weak knowledge demand in the South: learning divides and innovation policies. *Science and Public Policy*, 37(8), 571–582.
- Arocena, R., Sutz, J., & Syd, H. (2000). Interactive learning spaces and development policies in Latin America. *DRUID Working Papers No. 00-13*. Aalborg University: Copenhagen Business School, Department of Industrial Economics and Strategy, Department of Business Studies.
- Bound, J., & Johnson, G. E. (1992). Changes in the structure of wages during the 1980's: An evaluation of alternative explanations. *American Economic Review*, 83, 371–392.
- Bright, D. S., & Godwin, L. N. (2010). Encouraging social innovation in global organizations: Integrating planned and emergent approaches. *Journal of Asia-Pacific Business*, 11(3), 179–196.
- Brito, D. L., & Intriligator, M. D. (1991). The impact of technological change on the distribution of labor income. *UCLA Economics Working Papers No. 644*. Los Angeles: University of California.
- Buchanan, A., Cole, T., & Keohane, R. O. (2011). Justice in the diffusion of innovation. *Journal of Political Philosophy*, 19(3), 306–332.
- Cappelen, A. (2006). Differences in learning and inequality. In E. H. Lorenz & B. A. Lundvall (Eds.), *How Europe's economies learn: Coordinating competing models* (pp. 80–105). UK: Oxford University Press.
- Card, D., & DiNardo, J. E. (2002). Skill biased technological change and rising wage inequality: Some problems and puzzles. *Journal of Labor Economics*, 20, 733–783.
- Card, D., Lemieux, T., & Riddell, W. C. (2004). Unions and wage inequality. *Journal of Labor Research*, 25(4), 519–559.
- Cassiolato, J. E., & Lastres, H. M. M. (2008). Discussing innovation and development: Converging points between the Latin American school and the Innovation Systems perspective. *GLOBELICS Working Paper Series. No. 08-02*: The Global Network for Economics of Learning, Innovation, and Competence Building System.
- Cassiolato, J. E., Lastres, H. M. M., & Maciel, M. L. (2003). *Systems of innovation and development: Evidence from Brazil*. Cheltenham: Edward Elgar Publishing.
- Cassiolato, J. E., Pagola, C. B., & Lastres, H. M. M. (2009). Technical change and structural inequalities: Converging approaches to problems of underdevelopment. In E. R. Wolfgang Drechsler & R. Kattel (Eds.), *Techno-economic paradigms: Essays in honor of Carlota Perez* (pp. 51–67). UK: Anthem Press.
- Christensen, C. M., Baumann, H., Ruggles, R., & Sadtler, T. M. (2006). Disruptive innovation for social change. *Harvard Business Review*, 84(12), 96–101.
- Couto Soares, M. C., & Cassiolato, J. E. (2008). Innovation systems and inequality: The experience of Brazil. Federal University of Rio de Janeiro, Brazil: RedeSist - Economics Institute.
- Cozzens, S. E., Bobb, K., & Bortagaray, I. (2002). Evaluating the distributional consequences of science and technology policies and programs. *Research Evaluation*, 11(2), 101–107.
- Cozzens, S., Hagendijk, R., Healey, P., & Pereira, T. S. (2008). The CARE cycle: A framework for analyzing science, technology and inequalities. *ResIST project deliverables*. Oxford: FMG: Amsterdam Institute for Social Science Research (AISSR).
- Cozzens, S. E., Kallerud, E., Ackers, L., Gill, B., Harper, J., Pereira, T. S., et al. (2007). *Problems of inequality in science, technology, and innovation policy*. Atlanta: Resist.
- Cozzens, S. E., & Kaplinsky, R. (2010). Innovation, poverty and inequality: Cause, coincidence, or co-evolution? In B. A. e. a. Lundvall (Ed.), *Handbook of innovation systems and developing countries: Building domestic capabilities in a global setting* (pp. 57–82): Northampton, MA: Edward Elgar.

- Davis, J. H., Schoorman, F. D., & Donaldson, L. (1997). Toward a stewardship theory of management. *Academy of Management Review*, 22(1), 20–47.
- Ehrhart, C. (2009). The effects of inequality on growth: a survey of the theoretical and empirical literature ECINEQ WP (Vol. 107, pp. 1–50): society for the study of economics inequality.
- Foellmi, R., & Zweimüller, J. (2006). Income distribution and demand-induced innovations. *Review of Economic Studies*, 73(4), 941–960.
- Freeman, C. (1987). *Technology policy and economic performance: Lessons from Japan*. London: Pinter Publishers.
- Freeman, C. (2002). The learning economy and international inequality. *The Globalizing Learning Economy*, 1(9), 147–163.
- Freeman, C., & Perez, C. (1988). Structural crisis of adjustment, business cycles and investment behaviour. In G. Dosi, C. Freeman, R. Nelson, G. Silverberg, & L. Soete (Eds.), *Technical change and economic theory*. London: Pinter.
- Garicano, L., & Rossi-Hansberg, E. (2006). Organization and inequality in a knowledge economy. *Quarterly Journal of Economics*, 121, 1383–1435.
- Gibson-Graham, J., & Roelvink, G. (2009). Social innovation for community economies. In D. MacCallum, F. Moulart, J. Hillier, & S. V. Haddock (Eds.), *Social innovation and territorial development* (pp. 25–37). Burlington: Ashgate Publishing Company.
- Graefe, P. (2001). Whose social economy? Debating new state practices in Quebec. *Critical Social Policy*, 21(1), 35–58.
- Graefe, P. (2006). The social economy and the American model relating new social policy directions to the old. *Global Social Policy*, 6(2), 197–219.
- Greenwood, J. (1999). The third industrial revolution: Technology, productivity, and income inequality. *Economic Review*, 35, 2–18.
- Grossmann, V. (2008). Risky human capital investment, income distribution, and macroeconomic dynamics. *Journal of Macroeconomics*, 30(1), 19–42.
- Hart, S. L., & Christensen, C. M. (2002). The great leap. *Sloan Management Review*, 44(1), 51–56.
- Hart, S., & Prahalad, C. (2002). The fortune at the bottom of the pyramid. *Strategy + Business*, 26, 54–67.
- Haugh, H., & Kitson, M. (2007). The Third Way and the third sector: New Labour's economic policy and the social economy. *Cambridge Journal of Economics*, 31(6), 973–994.
- Hazelkorn, E. (2009). *Community engagement as social innovation*. Dublin: Dublin Institute of Technology, Centre for Social and Educational Research.
- Heathcote, J., Perri, F., & Violante, G. L. (2010). Unequal we stand: An empirical analysis of economic inequality in the United States, 1967–2006. *Review of Economic Dynamics*, 13(1), 15–51.
- Hollis, A., & Pogge, T. (2008). The health impact fund: Making new medicines accessible for all (pp. 152). Incentives for Global Health.
- Hubert, A. (2010). Empowering people, driving change: Social innovation in the European Union. *Bureau of European Policy Advisors (BEPA)*. http://ec.europa.eu/bepa/pdf/publications_pdf/social_innovation.pdf.
- Iacopetta, M. (2008). Technological progress and inequality: An ambiguous relationship. *Journal of Evolutionary Economics*, 18(3), 455–475.
- Ife, J. W. (1995). *Community development: Creating community alternatives-vision, analysis and practice*. Melbourne: Longman.
- Immelt, J. R., Govindarajan, V., & Trimble, C. (2009). How GE is disrupting itself. *Harvard Business Review*, 87(10), 56–65.
- Jensen, M. B., Johnson, B., Lorenz, E., & Lundvall, B. Å. (2007). Forms of knowledge and modes of innovation. *Research Policy*, 36(5), 680–693.
- Johnson, B., & Lundvall, B. A. (2000). *Promoting innovation systems as a response to the globalising learning economy*. Paper presented at the Project Local Productive Clusters and Innovations Systems in Brazil: New Industrial and technological policies, 1 June.
- Joseph, K. J., Singh, L., & Abraham, V. (2009). Innovation system and inequality: Experience of India. *BRICS project*. Brazil: RedeSist-Economics Institute, Federal University of Rio de Janeiro.
- Juhn, C., Murphy, K. M., & Pierce, B. (1991). Accounting for the slowdown in black-white wage convergence. In M. H. Koster (Ed.), *Workers and their wages: Changing patterns in the United States* (pp. 107–143). Washington, D.C.: AEI press.
- Kaplinsky, R. (2011). Schumacher meets Schumpeter: Appropriate technology below the radar. *Research Policy*, 40(2), 193–203.

- Kaplinsky, R., Chataway, J., Clark, N., Hanlin, R., Kale, D., Muraguri, L., et al. (2009). Below the radar: What does innovation in emerging economies have to offer other low-income economies? *International Journal of Technology Management & Sustainable Development*, 8(3), 177–197.
- Lastres, H. M. M., & Cassiolato, J. E. (2003). Systems of innovation and development from a South American perspective: A contribution to Globelics. *Research Network for Local Productive and Innovative Systems—RedeSist*. Brazil: Institute of Economics, Federal University of Rio de Janeiro.
- Lastres, H. M. M., Cassiolato, J. E., & Maciel, M. L. (2003). Systems of innovation for development in the knowledge era: An introduction. In J. E. Cassiolato, H. M. M. Lastres, & M. L. Maciel (Eds.), *Systems of innovation and development—Evidence from Brazil* (pp. 1–34). Cheltenham: Edward Elgar.
- London, T., Anupindi, R., & Sheth, S. (2010). Creating mutual value: Lessons learned from ventures serving base of the pyramid producers. *Journal of Business Research*, 63(6), 582–594.
- Lundvall, B.-Å. (1985). *Product innovation and user–producer interaction*. Aalborg: Universitetsforlag.
- Lundvall, B. Å. (2007). National innovation systems—Analytical concept and development tool. *Industry and Innovation*, 14(1), 95–119.
- Lundvall, B. A. (2011). Notes on innovation systems and economic development. *Innovation and Development*, 1(1), 25–38.
- Lundvall, B. A., & JOHNSON, B. (2003). Promoting innovation systems as a response to the globalising learning economy. In J. E. Cassiolato, H. M. M. Lastres, & M. L. Maciel (Eds.), *Systems of innovation and development: Evidence from Brazil* (pp. 141–183). Cheltenham: Edward Elgar Publishing.
- Lundvall, B.-Å., Johnson, B., Andersen, E. S., & Dalum, B. (2002). National systems of production, innovation and competence building. *Research Policy*, 31(2), 213–231.
- Lundvall, B.-Å., Joseph, K., Chaminade, C., & Vang, J. (2009a). Innovation systems and developing countries. In B.-Å. Lundvall, K. Joseph, C. Chaminade, & J. Vang (Eds.), *Innovation systems and developing countries building domestic capabilities*. Cheltenham: Edward Elgar Publishing.
- Lundvall, B. Å., Vang, J., Joseph, K., & Chaminade, C. (2009b). Bridging innovation system research and development studies: Challenges and research opportunities. Paper presented at the GLOBELICS 2009, 7th International Conference, Dakar, Senegal.
- MacCallum, D., & Moulaert, F. (2009). *Social innovation and territorial development*. Farnham: Ashgate Pub Co.
- Maciel, M. L., & Albagli, S. (2009). Knowledge societies, seen from the South: Local learning and innovation challenges. *International Social Science Journal*, 60(195), 97–107.
- Mackintosh, M., Chataway, J., & Wuyts, M. (2007). Promoting innovation, productivity and industrial growth and reducing poverty: Bridging the policy gap. *The European Journal of Development Research*, 19(1), 1–12.
- Monzon, J. L., & Chaves, R. (2008). The European social economy: Concept and dimensions of the third sector. *Annals of Public and Cooperative Economics*, 79(3–4), 549–577.
- Moulaert, F. (2000). *Globalization and integrated area development in European cities*. Oxford: Oxford University Press.
- Moulaert, F., & Ailenei, O. (2005). Social economy, third sector and solidarity relations: A conceptual synthesis from history to present. *Urban Studies*, 42(11), 2037–2053.
- Moulaert, F., Martinelli, F., Swyngedouw, E., & Gonzalez, S. (2005). Towards alternative model (s) of local innovation. *Urban Studies*, 42(11), 1969–1990.
- Moulaert, F., & Mehmood, A. (2010). Analysing regional development and policy: A structural-realist approach. *Regional Studies*, 44(1), 103–118.
- Moulaert, F., & Nussbaumer, J. (2005). The social region beyond the territorial dynamics of the learning economy. *European Urban and Regional Studies*, 12(1), 45–64.
- Moulaert, F., & Nussbaumer, J. (2008). Social innovation between local and global. In H. H. Wolfram Elsner & G. Hanappi (Eds.), *Varieties of capitalism and new institutional deals: Regulation, welfare and the new economy* (Vol. 69, pp. 259–276). UK: Edward Elgar Publishing.
- Moulaert, F., & Sekia, F. (2003). Territorial innovation models: a critical survey. *Regional Studies*, 37(3), 289–302.
- Neckerman, K. M., & Torche, F. (2007). Inequality: Causes and consequences. *Annual Review of Sociology*, 33, 335–357.
- Papaioannou, T. (2011). Technological innovation, global justice and politics of development. *Progress in Development Studies*, 11(4), 321–338.

- Pogge, T. W. (2005). Human rights and global health: A research program. *Metaphilosophy*, 36(1–2), 182–209.
- Porter, M. E., & Kramer, M. R. (2006). The link between competitive advantage and corporate social responsibility. *Harvard Business Review*, 84(12), 78–92.
- Porter, M. E., & Kramer, M. R. (2011). The big idea: Creating shared value. *Harvard Business Review*, 89(1), 2.
- Prahalad, C. K., & Hammond, A. (2002). Serving the world's poor, profitably. *Harvard Business Review*, 80(9), 48–59.
- Rodriguez, A. (2009). Social innovation for neighbourhood revitalization: A case of empowered participation and integrative dynamics in Spain. In D. MacCallum, F. Moulaert, J. Hiller & S. Vicari Haddock (Eds.), *Social innovation and territorial development* (pp. 81–100). USA: Ashgate Publishing Company.
- Seyfang, G., & Smith, A. (2007). Grassroots innovations for sustainable development: Towards a new research and policy agenda. *Environmental Politics*, 16(4), 584–603.
- Shaffer, R. (1989). *Community economics: Economic structure and change in smaller communities* (Vol. 1). Ames, IA: Iowa State University Press.
- Sharra, R., & Nyssens, M. (2010). Social innovation: An interdisciplinary and critical review of the concept. *Université Catholique de Louvain Belgium*.
- Soares, M. C. C., & Podcameni, G. (2010). Inequality and national innovation system in Brazil. *BRICS project*. Brazil: RedeSist-Economics Institute, Federal University of Rio de Janeiro.
- Stern, N. (2002). Dynamic development: Innovation and inclusion. *Munich lectures in economics* (Vol. 19). Munich: Center for Economic Studies, Ludwig Maximilian University.
- Umamohan, C., & Rao, C. H. N. (1992). Success in grassroot entrepreneurship. *Entrepreneurship and Entrepreneurial Development*, 203–238.
- Utz, A., & Dahlman, C. (2007). promoting inclusive innovation. In M. A. Dutz (Ed.), *Unleashing India's innovation: Toward sustainable and inclusive growth* (pp. 105–128). Washington, D.C.: World Bank Institute.
- Valentinov, V. (2010). Reconceptualising the third sector: Toward a heterodox perspective. *Euricse Working Papers, N 008/10*: European Research Institute on cooperative and social interprise.
- Wamae, W. (2006). *Why technological spillovers elude developing countries: A dynamic non-linear model*. DRUID, Copenhagen Business School, Department of Industrial Economics and Strategy/Aalborg University, Department of Business Studies.
- Zaichenko, Stanislav. (2008). *National Innovation System and Inequality: Russia*. Moskow: Higher School of Economics.
- Zweimüller, J. (2000). Schumpeterian entrepreneurs meet Engel's law: The impact of inequality on innovation-driven growth. *Journal of Economic Growth*, 5(2), 185–206.