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Foresighting for inclusive development

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ABSTRACT

We propose that foresight can contribute to inclusive development by making innovation systems more inclusive. Processes of developing future oriented innovation policies are often unsuccessful and rarely inclusive. We conceptualize such processes as foresighting. We focus on how the ex-ante design of policymaking processes affects the actual process with a focus on inclusion, and we discuss how it affects policy effectiveness and innovation system transformation. Our argument is that processes of policymaking must be inclusive to affect and transform innovation systems because a set of distributed actors, rather than ministries and innovation agencies, is the gatekeepers of change. From this perspective, inclusion is a precondition rather than an obstacle for transformation. Based on the notion of innovation system foresight, we develop an analytical framework that we use to study design and processes in foresight cases in two emerging economies: Brazil and South Korea. We conclude that better systemic and innovation oriented foresight is needed to enhance inclusive development.

1. Introduction

From the perspective of evolutionary economics, learning and innovation are the most important processes in development (Nelson, 2008). Including people in learning and innovation activities is thus a central part of inclusive development. The extent and direction of innovation activities are strongly influenced by a set of social structures that we often refer to as innovation systems. Making such systems more inclusive will thus promote inclusive development. We propose here that foresight may help us bring about more inclusive innovation systems.

Ministries of finance, industry or science and technology in developing countries often produce ambitious plans and related innovation policies for strengthening and connecting science and technology (S&T) and industry activities to support innovation systems. Too often, such strategic initiatives fail. We suggest that one important explanatory factor behind failed policies can be found in the design of the very process of generating them. We argue that the extent to which the process of developing future oriented innovation policy[1] is inclusive has important consequences for its likelihood of having an effect ex post. We conceptualize the process developing strategic innovation policy as foresight. Foresight is an important and widely used instrument for future oriented policymaking and for "wiring up" innovation systems (Martin and Johnston, 1999).

Foresight has over the recent decade or more implemented a more systemic and evolutionary understanding of innovation. In earlier work, we have suggested 'innovation system foresight' (ISF) as a tentative framework that can bring forward this development (Andersen and Andersen, 2014). ISF is a tool for strategically guiding innovation system (IS) transformations in desirable directions, e.g. towards more inclusivity. Nonetheless, such transformations are, we argue, feasible only if foresight design adheres to the basic ideas of ISF. These include a systemic understanding of innovation, which demands a focus on the particularities of the context wherein innovation takes place and relatively broad inclusion. Hence, our main proposition is that ISF can not only possibly ensure more inclusivity in innovation policymaking but also enhance the 'effectiveness' of it. From this perspective, inclusion is a precondition rather than an obstacle for transformation. To achieve transformations, governments must build and institutionalize competences for inclusive public-private dialogue around innovation policy.

The effect of inclusion in innovation activities on development outcomes is an emergent research area (Heeks et al., 2014; Johnson and Andersen, 2012). The theme has hitherto largely been ignored in both innovation and development studies (Cozzens and Sutz, 2014). Most empirical research on inclusion and innovation focuses on micro-level processes (for example, grassroots or frugal innovations), but the importance of broader system structures (i.e., institutions) wherein the latter processes are embedded is widely acknowledged (Andersen and Johnson, 2015; Cozzens and Sutz, 2014). In this paper, we focus on structural features of innovation policymaking. We thus contribute to the former knowledge gap by outlining how foresight can make innovation policy, and in turn innovation systems, more inclusive. More precisely, our argument is that the conceptual understanding

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[1] We refer to innovation policy in the "broad" sense (Lundvall and Borrás, 2005). Furthermore, we use the terms "strategic" and "future-oriented" innovation policy interchangeably.

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of innovation and foresight that, embedded in foresight design, guides the process of innovation policymaking to a large extent determine whether its output (e.g. growth plan) can be implemented. The idea to combine foresight and innovation systems to study inclusive development is novel, and it emerges from the authors' respective experience with innovation studies, technology foresight and development studies.

Although most research concerns the inclusion of poor and vulnerable communities, a recent initiative from the OECD broadens the notion of inclusion to encompass social, industrial, and territorial inclusion into innovation systems (OECD, 2013). A central point is that although aiding the poor remains at the core of inclusive development, we must acknowledge important interdependencies between the different forms of inclusion. For example, including poor people in labour markets depends on the growth of heterogeneous firms, and the workplace is often a key arena for learning. The inclusion of poor people into learning activities (as education) can help firms succeed via better equipped workers. Additionally, firms remain the key drivers of inclusive development and the main actors for up-scaling and diffusing inclusive innovations (specific products and services). We focus on industrial inclusion and thereby also contribute to research on inclusive development by exploring this novel concept empirically.

The paper is both conceptually and empirically explorative. We propose that a certain type of foresight thinking—innovation system foresight—is particularly conducive to inclusive development. Using interviews and secondary data sources, we present indicative evidence from case studies in Brazil and South Korea.

Section 2 presents the conceptual linkages between foresight, inclusion and innovation system transformation. Section 3 presents our analytical framework and methods. Section 4 presents cases from Brazil and South Korea. Section 5 contains an analysis of the cases. Section 6 discusses the findings and concludes the paper.

2. Foresight, innovation systems and inclusion

2.1. Inclusive and systemic policymaking

It is widely recognized that neither a universal recipe for nor a general theory of policymaking for innovation exists (Ahlqvist et al., 2012). Nonetheless, policy and strategy development are increasingly being interpreted as a continuous, reflexive, distributed, and interactive learning process (Ahlqvist et al., 2012; Georghiou et al., 2008). Rodrik (2006, 2010) argues that in the global learning economy, there are no simple and universal paths to economic development. Therefore, any path is necessarily unclear ex ante, which makes systematic experimentation with policy and institutions the only sensible strategy.

The systemic and distributed character of innovation has implications for inclusion in the policymaking processes. It has been recognized that the effectiveness—here understood as the implementation of policies, which is indicated by behavioural changes in actors—of policy depends to a large extent on the involvement of a broad range of actors in addition to those formally in charge. Due to the complexity of the learning economy, policy formulation relies on the knowledge, experience and competence of different stakeholders. Because policymakers cannot be understood as perfectly informed social planners, distributed policymaking via the inclusion of key stakeholders emerges as a necessary and integral part of innovation policy. Experience shows that involving key stakeholders and the public in dialogue and decision-making processes is essential to making socially robust solutions for new technology (Gibbons, 1999; Mallett, 2013).

In this respect, policymaking is to a large extent about aligning expectations and building shared visions of the future that can enable the coordination of interdependent actors. Public policy thus plays a catalysing role in this perspective, which implies that the process of formulating innovation policy and the benefits related to it (process benefits) might be more important than actual tangible outputs, such as reports, list of priorities and regulation (product outputs) (Ahlqvist et al., 2012). Hence, broad inclusion has a strong instrumental value for innovation policy, and policymaking needs to be both systemic and participatory.

The direction of innovation policy development activities should not be understood as 'blind'. It is directed by the dominant vision of the future—of what a desirable future would be—and resolving what are identified as problems in that optic. The influence of the perception of the future on the direction of learning and innovation is strong, whether it is explicit or implicit. It is not possible to rationally invest in a business, study for a career, save money or even send our children to school without making some assumptions about the shape of the future—it is thus inherent to decision making (Wehrmeyer et al., 2003). The process of policy experimentation should be guided by a deep understanding of current problems and by a systematic understanding of what the future might be.

2.2. Foresight

Foresight is often understood as a dynamic and systemic planning tool with participatory and inclusive elements. It is an activity that aims to build medium to long term visions, aimed at influencing present day decisions and mobilizing joint actions (Miles, 2008). The purpose of foresight is thus to imagine different futures and their consequences and, on that basis, to engage in informed decision making. It is perceived as a process where new insights emerge and capabilities are built rather than a tool for prediction. Foresight thus rests on two key assumptions: (i) that the future is not laid out (ii) and that decisions made and actions taken today can affect the future. Foresight often functions as a knowledge input to formal innovation policymaking (e.g., legislation) that goes on in ministries and parliament. However, the effect of foresight on actual policymaking is debated (Costa et al., 2008; Havas et al., 2010). One of the key aspects for successful impact of foresight on policymaking is actually to create strong public–private partnerships during the foresight process as well as the integration of stakeholders into foresight programmes (Calof and Smith, 2010). In foresighting for inclusive development we put further emphasis on such inclusion of stakeholders.

2.3. Innovation system foresight

Since the term was first suggested in the mid-1980s, foresight has been accepted as a field of practice in public policymaking (Irvine and Martin, 1984; Martin, 2010). Foresight has been characterized by increasing conceptual broadening and diversity that reflects experimentation with and application of diverse rationales as foundation for foresight. It has become more participatory and complex and is applied at multiple levels across numerous sectors (Miles, 2008).

Amidst this growing diversity, the notion of innovation system foresight (ISF) was formulated. ISF serves to re-accentuate and further explore the conceptual commonalities of foresight and innovation systems thinking in a context where explicitly innovation oriented foresight approaches are few. Moreover, ISF is formulated partly in response to a lack of theoretical underpinnings and analytical coherency in the area of foresight research, and partly to accommodate the changing perception of innovation and innovation policy from a linear to an evolutionary systems perspective (Andersen and Andersen, 2014). ISF is defined as a systemic, systematic, participatory, future-intelligence-gathering and medium to long term vision-building process aimed at present-day decisions and mobilizing joint actions with the purpose of transforming innovation systems in desirable directions, e.g. inclusivity or growth (Andersen and Andersen, 2014). In contrast to previous foresight approaches, ISF explicitly focuses on the nexus between foresight and innovation system research. We argue that the tenets of ISF make it a useful tool for making innovation systems more inclusive.

A foresight can be described as consisting of three main phases: pre-foresight (design of foresight), foresighting (process of foresight) and