

Title

National Innovation Systems and Aspects of Innovation Policy:
A comparative study of theory and praxis in three Nordic countries

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Keywords

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Introduction

The aim of this project is to contribute in understanding differences in innovation policy (IP) between countries. The empirical scene is set to Denmark, Norway and Sweden as these three countries are often thought of as rather similar. However, they differ with respects to industrial structure, political government and innovation policy strategies (Edquist & Lundvall 1993; Fagerberg et. al 2009). The national innovation system (NIS) approaches are widely used in describing determinants and performance of innovation activity in and between nations. As of today the NIS approaches are still more conceptual frameworks than they are theories, and no canonical definitions and applications of components and concepts exist, but are adapted to the specific empirical contexts. This holds also for the definition of innovation policy, its rationale and content. As the IS literature developed away from the 'market failure' rationale two strands of rationale have evolved: 'system failure' (e.g. Edquist (2011) focusing on structural components (organisations and institutions) of the IS, and 'functional analysis' (e.g. Bergek et al. (2008)) focusing on processes in functional components in the IS. In both approaches policy rationales, and thus innovation policies, are analytically and contextually defined, and a theoretical definition embedded in the assumptions and conditions of evolutionary theory is still missing in the IS literature. The ambition of this project is to conceptualise a rationale for innovation policy in evolutionary theory for analytical purposes. Arguably, the system failure rationale is not widespread and wholesale adopted by policy-makers in Denmark, Norway, and Sweden, and offer little assistance in comparing various IP strategies between countries. Therefore, in order to compare and explain differences in IP a new rationale is developed by utilising the selection environments proposed by Freeman (1992). Further, with the changing climate and the demographic challenges facing these three countries, I will assess how the reframing of innovation policy happens; from innovation for economic growth to innovation as a solution to societal challenges. The majority of the relevant policy documents are published within the last 10-15 years, but to give a comprehensive assessment of the policies and priorities of each country the historical development of each individual NIS would be required. Arguably, system level path-dependency must be taken into account in understanding the present state (Fagerberg et. al 2009).

Main Research Question

How and why does innovation policy differ at a national level between three Nordic countries; with regards to aim, implementation tools, rationale and efficiency?

To answer the above research question I employ the analytical framework of National Innovation Systems to categorise and compare the three NISs. Further, the DUI and STI modes of innovation proposed by Jensen et. al (2007) will also serve as a categorising tool. Comparing the three countries at the national level provides insights into how the role of IP has shifted from aiming (almost) exclusively toward economic growth to concern also other societal challenges such as the transition to renewable energy (climate crisis and resource depletion) and a growing demographic challenge (pensions for the 'baby-boom' generation). Arguably, these additional focal points of IP generate changes in the NIS, and comparing national strategies can provide insights in how new aims and strategies for IP are formulated and implemented. Finally, I will try and make some inference about the efficiency of the NISs in implementing policies and bringing out innovations. Niosi (2002) proposes a process for evaluating efficiency of the NIS, but policies are seldom compared at a national level. I argue that the national level is important as ground for comparison to assess the overall efficiency of the NIS, and not only compare specific policy instruments, e.g. the Centre of Excellence scheme.

Method and data

- National Innovation System framework analysis
- Textual analysis (policy documents, whitepapers, evaluation reports, etc.)
- Innovation indicators (publicly available statistics)
- Historical analyses

Expected Findings

Based on various characteristics of the three countries' NIS and earlier empirical research some expected differences are derived:

Denmark: A form of distributed capitalism (majority of SMEs), DUI-innovation, and orthodox government structure and implementation apparatus. Informal relation to innovation policy, publishing their first ever national innovation strategy in December 2012. Strong shift from 'growth' to 'societal challenge'.

Norway: Resource-based economy, centralised state-capitalism (large corps. owned or controlled by the government). Large sector bias towards resource-based sectors, especially the petroleum-sector. This sector dominates in innovation policy in terms of financing. Innovation policy is largely sector policy and regional policy (through the strong regional ambition). Strong shift from 'growth' to 'societal challenge'.

Sweden: Centralised capitalism (large Swedish-based TNCs), high-tech STI innovation. Little sector-bias. Innovation System thinking in focus, cf. the establishment of VINNOVA. Small shift from 'growth' to 'societal challenge'.

Thesis Outline

The thesis will take the form of a monograph and comprise 7 chapters:

Ch1. Introduction

Ch2. Conceptual framework

Ch3. Towards a new rationale for innovation policy

Ch4. The NIS of Denmark, Norway, and Sweden

Ch5. An innovation policy typology; aims, tools, and rationale

Ch.6 Innovation policy efficiency

Ch.7 A synthesis

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