



## Review

# Why Arctic policies matter: The role of exogenous actions in oil and gas industry development in the Norwegian High North<sup>☆</sup>



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## ARTICLE INFO

### Article history:

Received 28 October 2015

Received in revised form 11 March 2016

Accepted 16 March 2016

Available online 25 March 2016

### Keywords:

Path development

Extractive industries

Local content

Regional development

## ABSTRACT

Recent explanations of regional path development tend to neglect public policy interventions into the analysis of new path creation in non-core regions. I argue that the evolutionary approach in economic geography effort in highlighting endogenous theories to explain industrial renewal in the periphery, should be more aware of theories of exogenous inflows from outside in order to explain innovation and growth in regions. I suggest that the concept of local content policies in the global petroleum industry is pivotal in understanding regions ability to break out of trajectories seen as path dependent in theories of regional development. Drawing on a combination of studies of two petroleum projects in the region of Finnmark and one in Nordland in Northern Norway, this paper explores recent local content initiatives, and evaluate their potential benefit for companies and regions. I argue that the role of policy actions should be a pivotal issue in explaining growth and innovation in peripheral areas, and that a combination of endogenous and exogenous factors gives a more balanced picture of the situation rather than leaning on endogenous factors alone.

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## 1. Introduction

Recent explanations of regional path development tend to neglect policy interventions into the analysis of new path creation [21,23,33,24,5]. While recent contributions touches upon supportive policies in analysis of path dependence in the periphery, policies to promote economic growth in less favored regions remains to

be made explicit. Research on how new industries can emerge and grow is traditionally based on theory from evolutionary economic geography where regional path development is based on endogenous forces inside of core areas and in urban economies. The literature in this field develops assets for path development where “thick” innovation systems are prominent. In such, path dependent regional industrial development means that existing industries and institutional structures create the regional environment in which current activities continues and new one rises [25]. Regional industrial development is from such a perspective based on endogenous factors as past economic development “sets the possibilities”, while the present guide new possibilities [25]. Industries new to a region

<sup>☆</sup> The Norwegian Research Council supported this work through the project 233737/O50.

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grow out of existing ones through branching processes [3] and through new firm formation developed by researchers and engineers working in the region [9]. Dense regional structures and endogenous development processes such as a large number of innovative firms in related industries, scientific excellence, and combination of different knowledge bases will due to such a perspective bring birth and development of new industries [16]. These factors are held up as influential factors in developing of regional innovation systems, as outlined by Cooke et al. [4] and Asheim and Gertler [2].

In this paper, I concentrate on a peripheral region with different regional structures compared to the areas where the literature stems from. Northern Norway have specific peripheral characteristics, an outlying and disadvantaged part of Norway. This region is thinly populated and have traditionally been economically disadvantaged compared to regions south in Norway. Peripheral regions lack preconditions like those highlighted in the literature of vital characteristics for innovation. These regions are often specialized in traditionally primary and subordinate economic activities, have low or no levels of R&D, knowledge variety and innovation, thin structures of knowledge- and support institutions [37]. In such, the literature suggests that key assets for the development of new industrial paths are lacking [16]. As locked into paths dominated by traditional and often resource-based industries, peripheral regions seem to be locked-in dependent on low-tech industries. Reviewing the literature seems to indicate little evidence that peripheral regions have the possibilities to open up new routes inspired by new industries. Some exceptions exists and the work on rural manufacturing [41], electro industry [17] and ICT and software industries [16] documents how new trajectories are opened up by introducing new industries. Still, current model of path dependent regional industrial development, fails in providing a theoretical framework for approaching new paths in the rural and non-core areas. Using examples and explanations developed in urban metropolitans and university campus cities; the peripheral regions are outside major and ongoing theoretical debates and empirical generalizations of regional path development activities [29].

The aim of this paper is thus to develop further our knowledge about the development of emerging industries in peripheral regions and the interplay with policy actions by addressing the following research question. *What is the role of policy actions in the emergence of oil and gas industry development in a peripheral region in the Arctic?*

The remaining of the paper is organized as follows. I start with a theoretical discussion of concepts from economic geography and the notion of path dependence and I discuss whether the concept of local content has the ability to highlight regional economies renewal and disentangle from path dependent lock-in situations. The empirical section highlights the role of policy intervention as an exogenous factor in the emergence and growth of new industries. Finally, the concluding remarks discuss what the empirical findings implicate for the theories on regional development in focusing on new path creation.

## 2. Endogenous path development and path creation in peripheries

### 2.1. Path dependent development as endogenous growth

Over the last years, the attention from researchers in the field of economic geography has moved in an evolutionary turn [11]. This turn believes experienced competencies developed over time by entities in certain localities regulate present formations as well as paths in the future [18]. This suggests that history matters in shaping places and its economic and social scenery. Involved in

such thinking, the notion of path dependent regional industrial development are of great interest to researchers within the field. Path dependent regional development focuses on the “negative and positive lock-in effects that pushes a technology, an industry, or a regional economy along one path rather than another” [27]. In such, path dependence means that regional industries may enter into path extension through mainly incremental innovations in present industries and technical paths. Reflected to a situation of growth in the regional economy, this implies that local and regional firms increase their market position, conduct more jobs and contribute to development through continuity. In such situations, regional industries may eventually, experience stagnation and drop because lack of renewal [13]. Firms in the region might enter a situation where the innovation potential of local and regional firms are reduced, or innovations occurs along a constrained technology pathway. This reflects more or less connectivity between regional firms and actors, still few links to extra-regional firms or the outside world is established. The lock-in situation will result in exhaustion. Typical, external events or developments are ignored or recognized to late, and firms become uncompetitive and might decline. This will lead to a stagnation in the regional industry.

The evolutionary approach in economic geography have added theoretical contributions that supplement these notions of path dependent developments that focus on continuity and lock-in, by alternative paths where dynamics occurs. Changes may follow from different elements of re-organization of industries in a region [21]. Path renewal occurs when local businesses shift into different activities. The content of regional firms like knowledge bases shape to some extent the degree of renewal that is observed. Typical, path renewal is often developed within the industry as a regional industry transform and broadens the industrial structure into new or related areas of activities [3]. Finally, path creation represents a wide-ranging transformation in a regional economy. For the region, it includes formation of new firms and new sectors. Alternatively, businesses have different products, apply new techniques or organize dissimilar than was previously subject in the region [25]. Considered as a localized phenomenon, innovation seems to be dependent on factors specific to places. The history becomes the main-shaper of the development in the region when it comes to development of new paths within the regional economy.

### 2.2. Exogenous sources of path creation in the periphery

While peripheral regions have other characteristics and differ from core areas when it comes to development of knowledge bases, one should be aware of approaching the same explanatory models in order to understand innovation and growth processes in such different regions [16]. While core areas draw on a great amount of analytical knowledge and combine with synthetic knowledge bases, studies of new industrial paths in less-favored regions point to the role of exogenous development impulses such as arrival of innovative firms from outside and other forms of inflow of external knowledge [19,30,16]. Key sources of new path creation, it is argued, is extra-regional arrangements like new technologies, industries, firms or institutions [25]. This paper deals with the role of policies in the region of Northern Norway, a peripheral region that recently encountered the global oil industry. The region of Finnmark, Troms and Nordland have specific peripheral characteristics, traditionally a peripheral and disadvantaged part of Norway. These areas are thinly populated and have traditionally been economically disadvantages regions. Finnmark is the largest and least populous of the northern counties in Norway, containing 74,000 inhabitants spread out across 46,000 km<sup>2</sup>. The long and narrow shape of the region of Northern Norway makes for great internal distances and related climatic, economic and cultural differences [10]. When it comes to economic development, the region of North-

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