Institutional patterns in the Austrian space sector

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ARTICLE INFO

Keywords:
Austria
Entrepreneurship
Innovation
Institutional logics
Space

ABSTRACT

This paper employs the institutional logics perspective to understand how space policies and regulations influence entrepreneurship and innovation. We conducted interviews with entrepreneurs, ESA policy makers and governmental representatives in Austria and identified six prevailing institutional practices: geographical return, the SME-initiatives, the national support pattern, the size pattern, the consortium pattern and the experience pattern. Together, these patterns make up the semi-governmental logic of the space sector. We find that space actors adhere to these patterns to earn legitimacy, which is a condition for support and access to resources. This study adds to our understanding in the consequences of policies and contributes to the design of new space policies and programmes.

1. Introduction

Space technologies play an important role in our daily lives. They cover many domains ranging from agriculture and climate change to national security and health care. A study conducted by the European Commission reveals that the majority of Europeans consider the space sector highly meaningful, since the industry fosters job creation and contributes to scientific progress in a variety of ways, including medical advancements, more efficient agriculture, environmental protection, and environmental and climate management [1]. Yet, the impression is that the innovation potential of the space sector is not fully exploited [2]. To foster innovation and growth in the space sector, it is necessary to understand the industry. In this study, we draw on institutional logics theory to understand how governments and firms interact in the European space sector.

The institutional perspective has been widely employed by scholars to enhance our knowledge about organizational activities and how internal and external forces influence organizational patterns. Institutional theory states that organizations operate within social structures that are continuously altered over time [3]. They are bound by social, political, economic and legal contexts that ascertain the basis for production, exchange and distribution of goods and services [4]. Conforming to socially constructed rules and requirements is needed to receive acceptance by others [5,6]. Therefore, organizations adapt to their environment by changing their structure in order to align with the institutional pattern [7]. This process is also known as coercive isomorphism [3] and is more likely to occur when there is financial reliance, centralized resourced with few alternatives and when the dependent organization has ambiguous goals [3]. The space sector displays many of the aforementioned elements. It is characterized by a large number of actors, complex technologies, budget shortfalls, time constraints and uncertain outcomes. Organizations are highly dependent on external funding, as space activities require high up-front investments and long development times.

The European Space Agency (ESA) is an important player in the space sector as its purpose is to draw up and implement the long-term European space policy. ESA coordinates the European space programme and integrates national space programmes, such as satellite developments, while others operate mainly via their national space programme as much as possible [8]. As of 2017, ESA has twenty-two member states [9], each having their own strategic agenda and governance structures. Some conduct space activities primarily through ESA programmes, while others operate mainly via their national space programme [10]. The main idea of these programmes is to provide resources and foster entrepreneurial activities and innovation in space. Since companies have a high degree of financial reliance and resources are centralized, it is expected that actors in the space industry are isomorphic to their environment. As a result, they might miss out on opportunities for true innovative entrepreneurship. Due to the dynamic and complex structure of the industry, organizations might also be subject to conflicting institutional logics, meaning that complying to one logic might violate another.

The goal of this study is to show how an institutional theory lens can serve to understand innovation and entrepreneurship in the space sector.

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https://doi.org/10.1016/j.actaastro.2017.10.030
Received 8 November 2016; Received in revised form 19 September 2017; Accepted 23 October 2017
Available online 27 October 2017
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We specifically focus on Austria. This research examines how ESA’s policies and Austria’s national space programme influences entrepreneurial and innovation in Austria. The research question is as follows: ‘How do institutional patterns and logics enable or constrain entrepreneurial action of existing companies and new entrepreneurs in the Austrian space sector?’ This study provides insights in the consequences of policies in the space sector on entrepreneurship and innovation and aims to make a contribution towards the design of new policies and programmes.

2. Institutional logics

Alford and Friedland [11] introduced the concept of institutional logics to portray the beliefs and conventions inherent in the institutions of modern western societies. They believed that capitalism, state bureaucracy and political democracy are the three contending institutional orders that shape how actors react. Even though definitions of institutional logics vary among scholars, the main idea is that behaviour occurs within socially constructed, taken-for-granted prescriptions of appropriate conduct [12], which are useful for understanding individual and organizational behaviour located in a social and institutional context, which frames behaviour and brings opportunities of agency and change [13].

Complying with institutional logics is crucial for gaining legitimacy. Legitimacy is the process where an organization justifies to the general public or elite organizations its right to exist [14]. It refers to the general perception that the actions of an organization are desirable within the socially constructed norms, values and beliefs [15]. Legitimate organizations are perceived as more trustworthy, more meaningful and predictable [15]. This contributes to their survival and growth [16,17] and access to resources [17,18]. Legitimacy is not a resource that can be possessed, but a fundamental state that restructures organizations align with normative values and cultural-cognitive frameworks. Therefore, the importance of legitimacy is often not apparent but only becomes visible when the legitimacy of a firm is threatened or challenged [19]. Established organizations have fewer problems than new firms in accessing resources because past performance provides legitimacy [20]. New firms on the other hand must act proactively to win confidence and support of the environment [21].

Since the late 1980s the issue of institutional change received increased interest. If actors are conditioned by institutional prescriptions, how is it possible for actors to change the institutions in which they are embedded? Seo and Creed [22] named this contradiction “the paradox of embedded agency”. This paradox can be solved when we do not regard institutional logics solely as constraints but also as a platform to unfold activities and actors as skilled individuals who can theorize action. Individuals do not necessarily behave in line with prescribed rules and have an ability to deviate from the normal course of action [23]. Through habit, imagination and judgment, actors can both reproduce and transform structures in an interactive response to the problems posed by changing historical situations [24].

The act of altering institutional structures is also known as institutional entrepreneurship. This notion was first mentioned by Eisenstadt [25], referring to actors who initiate action, lead and give direction to structural change. Institutional entrepreneurs have the necessary resources to implement new institutions in which they see an opportunity to pursue their interests [26]. However, institutional entrepreneurship is not merely the act of one single individual or organization. This image has often been portrayed in the entrepreneurship literature, where it has been related to individual agency. Change can come from multiple individuals or organizations. Evidence shows that firms mimic each other, especially those with whom they have systematic ties [27]. Therefore, change can be a result of multiple actors exhibiting different components of new practices. Passive actors tend to transform in institutional entrepreneurs when there is social upheaval, technological disruption, competitive discontinuities or regulatory changes [28], or when problems arise that might cause crisis (e.g. scarcity of resources) [29] and when institutional arrangements cause internal contradiction [30].

There are four strategies to change institutional logics, namely open advocacy, private persuasion, making a case of exceptions and ex ante investments with ex post justification [31]. Open advocacy is the process of openly advocating for changes to existing regulations or laws, for example through the media. When an actor chooses to approach a relevant decision maker privately for changes, this is referred to as private persuasion. When an actor argues that he is in an exception to the existing rules, this is known as making a case of exceptions. The prevailing rules remain unchanged in this situation. Ex ante investments with ex post justification refers to the process where the actor evades existing regulations. If the operation proves to be successful, the entrepreneur tries to use the success of its operations to persuade the authority to make changes in existing rules.

Drawing from the literature review, this paper uses the theoretical framework displayed in Fig. 1.

![Theoretical framework](image-url)
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