



Innovation quality in knowledge cities: Empirical evidence of innovation award competitions in Finland



Teemu Makkonen ^{a,1}, Tommi Inkinen ^{b,*}

^a Department of Border Region Studies, University of Southern Denmark, Alsion 2, 6400 Sønderborg, Denmark

^b Department of Geosciences and Geography, University of Helsinki, PO Box 64, Helsinki 00014, Finland

ARTICLE INFO

Keywords:

Finland
Innovation awards
Innovation policy
Innovation prizes
Knowledge city

ABSTRACT

Innovation awards have for long attracted policy makers as a method for innovation promotion. Still, academic research on innovation awards has thus far received little attention. In particular, empirical studies on the motives to enter award competitions and the realized impacts of winning an innovation award are scarce. This study addresses this research gap. Firm-level evidence, questionnaire data on innovation award winning companies of the Finnish national Innofinland and Quality Innovation of the Year award competitions, indicate that the motives for companies to participate in award competitions and the realized impacts of winning an award are largely the same: media coverage and a credibility boost. The importance of innovation awards in innovation policy was, however, considered only as mediocre or modest. As a conclusion it can be stated that innovation awards are an additional tool for innovation promotion, alongside innovation inducement policies including tax reductions and direct funding, as they produce significant positive effects for the award winning companies, and an additional indicator of innovation quality in the context of knowledge cities.

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1. Introduction

In various spatially oriented streams of economic thought and investigation, including local clusters (Porter, 2000), regional innovation systems (Cooke, 2004) and knowledge cities (Yigitcanlar, Velibeyoglu, & Martinez-Fernandez, 2008b), methods for boosting the innovativeness of cities and regions have gained significant academic interest. Innovation awards have been positioned as an example of such methods: innovation awards or prizes have for long been discussed as important incentives for private firms to invest in R&D and other innovation activities (Kay, 2012b; Urpelainen, 2012; Williams, 2012). Still, academic research on the subject has been relatively scarce (Adamczyk, Bullinger, & Möslin, 2012; Kay, 2011a, 2012a). This study aims to address this research gap by discussing the benefits of innovation awards for firms and the motives for their entry into an innovation competition with unique questionnaire data gathered from Finnish innovation award winning companies: the data focuses on two Finnish (ex-post) innovation award competitions, namely Innofinland and Quality

Innovation of the Year (QIY) awards. The aim of this study is first to explore the motives to enter such award competition and second to investigate if innovation awards bring significant benefits to award winning companies.

Innovation awards have already received professional attention from the city planners in regard to the concept of knowledge cities. In Guangzhou, China, the city officials are implementing methods, including the Guangzhou Technology Innovation Award, for innovation-oriented city construction. The award is also designated to aid the optimization of the local business environment for innovative talent (Guangzhou Municipality, 2013). Accordingly, the city of Rotterdam, the Netherlands, has plans for linking innovation awards in their policy to characterize themselves as a knowledge city (City of Rotterdam Regional Steering Committee, 2009). Thus, there is a potential but still underutilized connection between innovation awards and the (urban) knowledge-based development. This leads us to review innovation awards in relation to the concept of knowledge cities and to conclude with a policy discussion concerning the use of innovation awards as a government policy instrument as well as a tool for developing knowledge cities. The study, thus, replies to the call voiced by Kay (2011b) to use questionnaire data in order to gain a better understanding of the activities of innovation competition participants. Our specific research goals are:

* Corresponding author. Tel.: +358 400 882 818.

E-mail addresses: teemu@sam.sdu.dk (T. Makkonen), tommi.inkinen@helsinki.fi (T. Inkinen).

¹ Tel.: +358 504 154 895.

- (1) To provide a literature-based view on the significance of innovation awards and their implications for the knowledge cities.
- (2) To answer the following empirical research questions:
 - a. What were the initial motives to enter the competition?
 - b. What were the perceived benefits after the award was granted?
 - c. What implications for innovation policies do the results entail?

In relation to the terminology used, innovation prizes and innovation awards can be seen as close relatives. Still, one can make a distinction between these two. Although, awards are also referred to as grants, as is in the case of small business innovation research programs (Salles-Filho, Bonacelli, Carneiro, Castro, & Santos, 2011; Wessner, 2009a), they do not necessarily include a monetary reward, whereas prizes are most often monetary in nature. Thus, the motivation for entering the award competition had to be derived from sources other than instant monetary gain. This notion lays the foundation for the motivation behind our research questions.

2. Foundations: innovation policy as context for awards

Governments and international organizations are currently following the techno-scientific development paradigm in order to boost their economic and knowledge-based development. Therefore, the modes of innovation policy and innovation inducement (or incentives) have received a great deal of attention from policy makers and academics alike. In particular, research on government-led innovation inducement has been prolific in environmental economics, that is, when discussing eco-innovations (Veugelers, 2012). The link between innovation and economic growth has for long been almost unquestionably at the center of debate on development economics as well as business and management studies (de Bruijn & Lagendijk, 2005). Thus, promotional tools for enhancing the innovativeness of firms, regions and nations are perceived to be of utmost importance in the development of innovation policies of, for example, the European Union and individual governments (European Commission, 2010). The promotional aspect is highly important for cities in which the award winners locate. Award competitions are therefore additionally tools for firm-based cluster marketing for cities aiming to promote their knowledge image.

Innovation policies aimed at inducing innovation can be labeled as: (i) technology-push (ex-ante) and; (ii) demand-pull (ex-post) policies. Technology-push policies are measures targeted at reducing costs to firms' for producing innovations. These public policies include for example direct government funding for R&D, tax credits or reductions for companies to invest in R&D, support for training and funding demonstration projects. Demand-pull policies are those actions that are targeted at raising the payoff for successful innovations. These include policies such as intellectual property protection, tax credits and rebates for consumers of new technologies, government procurement, technology mandates, regulatory standards and taxes on competing technologies (Nemet, 2009). According to this dichotomy, innovation awards can be considered as a demand-pull policy option, as they are, as their name suggests, awarded to already existing inventions rather than R&D activities (Jeffrey, Jay, & Winskel, 2013). Innovation awards are, thus, designed to increase the payoff of successful innovations.

Current innovation literature has recognized the importance of awards and prizes as an external impetus for motivating firms to gain prestige for their innovations. In a recent account, Adamczyk et al. (2012) summarized an extensive literature review of

innovation contests. They provided a detailed classification on the terminology of innovation contests including several related terms. However, 'award' was missing from their account and this contributed to our decision to concentrate on innovation awards. Award winning companies provide an interesting study platform as they may be approached as a particular category of company (i.e. considered successful because they have been given an award). Thus, there are relations to 'best practices' or 'best performers' and innovative examples of successful business. Caird (1994) produced one of the early studies focusing on awarded SMEs from the United Kingdom's Government sponsored Small Firms Merit Award for Research and Technology (SMART). The study however focused on innovation processes, that is, on finding where ideas for a new product, service or process come from, not on the significance of the awards themselves. Accordingly, Larsen and Lewis (2007) studied relevant questions from the problem solving point of view, namely on how award winning SMEs manage their innovation barriers. Their data involved eight innovative firms from different fields and the study results indicate that understanding SME behavior and innovation creation involves a mixture of coping with commonly recognized elements on funding problems (consistency of finance), research management, human resources (staff turnover and production skills), logistics and marketing.

Accordingly, economists (Nalebuff & Stiglitz, 1983; Rogerson, 1989; Wright, 1983) have long claimed that under certain conditions innovation prizes can induce innovation, that is, provide private entrepreneurs with strong incentives to invest in R&D. In particular, the interest has been in innovation prizes as an alternative to patent systems in invention appropriation (Chari, Golosov, & Tsyvinski, 2012; Clancy & Moschini, 2013; de Laat, 1996; Hopenhayn, Llobet, & Mitchell, 2006; Masters, 2005; Scotchmer, 2004). What literature there is on innovation awards has, however, been mainly confined to studies concerning the innovativeness of (public) management (Altshuler & Behn, 1997; Bernier & Hafsi, 2007; Borins, 2008) instead of the realm of technological innovation, where the majority of innovation studies are found (Kalil, 2006). Additionally, innovation awards and prizes have been used in choosing case studies and in delineating samples (Gemünden, Salomo, & Hölze, 2007; Simmie, 2004) and as a measure of the support received and the successfulness of innovative activities at firm-level (Laforet, 2009; Romjin & Albaladejo, 2002). The assessment processes aimed at evaluating and prioritizing inventions according to their innovation potentials have been broadly defined in the expert systems literature as 'innovation intelligence' (Dereli & Altum, 2013). Still, as Kay (2011b: p. 360) has noted, 'academic research, however, has barely investigated these prizes in spite of their long history, recent popularity, and notable potential'. Similarly, Wei (2007) reports a lack of empirical research on the effectiveness of prize systems.

Moreover, the scant empirical evidence on innovation awards and prizes is inconsistent. Already in the nineteenth century the French Academy of Sciences saw limitations in rewarding a few successful examples of research (Crosland & Gálvez, 1989). Accordingly, Wei (2007) has stated that innovation prizes are not trouble-free incentives as the grounds for their presentation are more or less subjective, which raises the question of how to determine which innovations deserve a prize (see also Heinze, Shapira, Senker, and Kuhlmann (2007) for scientific prizes and Yang and Hsieh (2009) for quality awards). Moreover, in giving a prize to a selected few there is a risk of discouraging other high-quality innovators. Thus, criticism has been voiced regarding the feasibility of prize systems (Wei, 2007) and questions raised as to whether a prize can sustain the commercial development of a prize-winning innovation (Davis & Davis, 2004; Larsen & Lewis, 2007). Expert systems are recognized here as useful tools in the evaluation processes of award competitions (Chen & Chen, 2009).

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