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The effect of public support on senior manager attitudes to innovation

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ABSTRACT

Senior manager innovation-orientated attitudes are key drivers of innovation within micro and smaller firms. Despite this, little guidance exists on the initiatives organisations can utilise to induce and strengthen such desirable attitudes. In this paper, we investigate whether innovation vouchers, an increasingly prevalent form of public innovation support that funds short-term collaborative projects to solve innovation problems for micro and smaller firms, influence senior manager innovation-orientated attitudes. We use a treatment effects approach to examine our question, specifically, propensity score nearest neighbour matching on a U.K. dataset of firms that received an innovation voucher between 2012 and 2015, and a control group of those that did not. Overall, we find that innovation vouchers induce small positive changes in senior manager innovation-orientated attitudes, with the largest change observed for senior manager openness to external knowledge, followed by risk tolerance. Overall, we show innovation vouchers strengthen senior manager innovation-orientated attitudes, thus advancing insights into the determinants of innovation-orientated attitudes and the additionality effects of public support programmes. We discuss implications for innovation policy and practice.

1. Introduction

This paper examines how public support for innovation influences senior manager innovation-orientated attitudes. Within the context of innovation, attitudes, of employees and senior managers, have received much attention (e.g., Ahn et al., 2017; Antons and Piller, 2015; Kraiczky et al., 2015a, 2015b), given their influence on the intentions, decisions and behaviours of individuals (Bohner and Dickel, 2011), and subsequently on the strategies and activity of organisations. Specifically, senior manager support for innovation and risk tolerance have been found to be important in creating an innovation-orientated climate within firms where innovation is adequately resourced and employees are encouraged to engage in innovation (Kraiczky et al., 2015a, 2015b; Ling et al., 2008). Moreover, given the increasingly important role of external knowledge in the innovation process (Nieto and Santamaria, 2007; Rodriguez et al., 2017), extant work suggests that attitudes to external knowledge are important through their shaping influence on external knowledge activities (Ahn et al., 2017; Antons and Piller, 2015). Collectively, these three individual innovation attitudes – support for innovation, risk tolerance and attitude towards sourcing of external knowledge – comprise senior manager innovation-orientated attitudes.

While existing work has focused on demonstrating the important consequences of innovation-orientated attitudes for organisation's

innovation activities, little guidance exists on the initiatives organisations can utilise to induce and strengthen such attitudes, particularly, we know little about the role of public support for innovation. Psychology literature shows that attitudes are *learned* and consist of the array of evaluative information individuals possess about an object, which is integrated and summarised to generate an evaluative judgement stored in their memory (Bohner and Dickel, 2011; Visser and Mirabile, 2004). As attitudes are learned, they can be influenced through learning initiatives that provide individuals with new and persuasive evaluative information about an object (Burcharth et al., 2014; Crano and Prislin, 2006). As demonstrated elsewhere, direct public support for innovation induces learning within organisations, namely, experiential learning through the experience of performing the innovation project and inter-organisational learning through interactions with funded collaborative partners (Autio et al., 2008; Clarysse et al., 2009). Focusing on innovation vouchers, an increasingly prevalent form of public innovation support that funds short-term collaborative projects to solve innovation problems for micro and smaller firms (Bakhshi et al., 2015; Sala et al., 2016), we argue that the learning processes induced by innovation vouchers provide new and persuasive evaluative information to senior managers that positively influence their support for innovation, risk tolerance and openness to external knowledge.

We believe advancing this understanding is important for several

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reasons. First, the extremely resource-constrained nature of micro and smaller firms, could limit their ability to themselves fund learning initiatives (Kotey and Folker, 2007), such as employee training, to induce and strengthen innovation-orientated attitudes (Burcharth et al., 2014). As such, innovation vouchers could be a particularly effective initiative as the voucher (helps to) funds the learning initiative and firms can advance their own innovation efforts through innovation vouchers alongside obtaining attitudinal benefits. Thus, innovation vouchers could represent a resource attractive option for micro and smaller firms. Second, from an innovation policy perspective, scholars have argued that a key objective of public support interventions should be to positively change attitudes to innovation, yet little guidance exists concerning how this can be achieved (Afcha, 2011; Buisseret et al., 1995; DITRA, 2006). Redressing this is important as innovation-orientated attitudes significantly influence firm innovation activities, thus, positively changing such attitudes could amplify policymaker efforts to stimulate greater innovation behaviour (Wong and He, 2003) and result in longer-term impacts on firm innovation activities much sought by policymakers (Roper and Hewitt-Dundas, 2016). Thirdly, despite growing attention to individuals within the innovation process (Enkel et al., 2017; Kraiczy et al., 2015a), research has focused on the firm level impacts of public support (Kang and Park, 2012; Radas et al., 2015), thus limiting insight into the impacts on individual organisational members. Finally, despite constituting an increasingly prevalent component of the policy mix targeted to micro and smaller firms throughout Europe, empirical evidence on the effectiveness of innovation vouchers remains limited (Bakhshi et al., 2015; Sala et al., 2016).

Our analysis is based on a dataset of firms that received an innovation voucher between 2012 and 2015, and a control group of those that did not. Following others (Radas et al., 2015) we employ propensity score nearest neighbour matching to estimate our results. The matching estimator controls for the non-random self-selection process involved in obtaining an innovation voucher (Caliendo and Kopeinig, 2008). We also estimate several checks to assess robustness of our results to the influence of unobserved characteristics, different matching estimators, and different attitudinal measurement scales. Overall, the analysis contributes to the literature on innovation orientation by providing new insights into the external determinants of innovation-orientated attitudes and to the innovation policy literature by providing novel insights into the impacts of public support on attitudes to innovation and knowledge, the micro-level impacts of public support, and the efficacy of innovation vouchers.

This paper proceeds as follows. First, we discuss the conceptual background to our study and develop our hypotheses. Next, the dataset used and methodology employed is outlined. Following this, our results and robustness checks are presented, before discussing the findings, outlining our contributions and highlighting managerial and policy implications.

2. Attitudes to innovation and knowledge

2.1. What are attitudes and how are they changed?

Attitudes are one of the main determinants of human behaviour (Bohner and Dickel, 2011; Chen et al., 2013). Attitudes refer to individuals learned evaluative judgements that predispose them to consistently respond to an object with some degree of (un)favourableness (Antons and Piller, 2015; Ajzen, 2001). They consist of the array of evaluative information individuals possess about an object, which is integrated and summarised to generate an evaluative judgement stored in their memory (Visser and Mirabile, 2004). More important and relevant information, and information gained through direct experience of the object is often more salient in constructing an attitude (Bohner and Dickel, 2011; Crano and Prislin, 2006). Alongside beliefs and emotions, attitudes shape “what people see, hear, think and do” (Burcharth et al., 2014; 151). Attitudes guide information processing

and search by limiting the field of vision (i.e. where individuals search), selectively filtering the information to which attention is paid and influencing interpretations of information encountered (e.g. perceived information quality) (Bohner and Dickel, 2011; Bohner and Wänke, 2002). Specifically, attitudes bias search and processing toward attitude congruent information (i.e. confirms or aligns with the existing attitude), with more attention, higher importance and positive understandings attached to congruent than incongruent information (Bohner and Dickel, 2011). Through biasing information search and processing, attitudes also guide intentions, decisions and behaviours toward an attitude object (Ajzen, 2001; Glasman and Albarracín, 2006). The guiding influence of attitudes on individual intentions, decisions and behaviours illustrates the importance of attitudes for organisations (Antons and Piller, 2015; Damanpour and Schneider, 2006). As noted by Burcharth et al. (2014; 151), if organisations seek to perform innovation projects, attitudes could “play a dominant role either legitimizing or hindering such new initiatives in being adopted and implemented”.

The importance of attitudes has drawn attention to how they can be changed (Bohner and Dickel, 2011). For example, if negative attitudes to innovation, risk and external knowledge existed, how could firms change attitudes to facilitate innovation? As noted above, attitudes refer to *learned* predispositions and consist of an array of evaluative information possessed about an object (Visser and Mirabile, 2004). As attitudes are learned, attitudes can be “influenced or re-shaped as an effect of learning effects” (Burcharth et al., 2014; 151). Prior research cites learning initiatives as providing new and persuasive evaluative information about an attitude object to an individual, induces change in the array of evaluative information the individual possesses about the object, and through this, attitudinal change (Bohner and Dickel, 2011; Crano and Prislin, 2006). Persuasiveness is critical for attitude change and is largely determined by the content and source (Petty and Wegener, 1998). Content perceived to be relevant, important, favourable and convincing (e.g., causally linking an object with a favourable and likely consequence) is more likely to receive the attention and cognitive effort required to comprehend and evaluate the new information relative to the existing array of attitude information, to induce attitudinal change (Bohner and Dickel, 2011; Petty and Brinol, 2010). Moreover, information from sources perceived to be credible can further increase the persuasiveness of evaluative information and its potential for attitudinal change (Petty and Brinol, 2010). For organisations and policymakers this highlights that attitudes can be influenced and strengthened by initiating learning efforts that expose individuals to new evaluative information, with change more likely if the information is relevant, important, favourable, convincing and from a credible source.

2.2. Senior manager innovation-orientated attitudes

Senior managers (e.g., founders, CEO and COO) are key drivers of innovation within organisations (Huang et al., 2012; Kraiczy et al., 2015a), particularly within micro and smaller firms where they possess significant power and discretion over strategic choices (Ahn et al., 2017; Marcati et al., 2008). Operating under bounded rationality, attitudes shape senior manager interpretation of the available strategic choices by guiding information search, processing and retention (Bohner and Dickel, 2011; Hambrick and Mason, 1984). By shaping interpretation, attitudes significantly influence firm innovation strategy, behaviour and performance (Hambrick and Mason, 1984; Kraiczy et al., 2015a, 2015b).

In the context of innovation, three individual attitudes that collectively comprise senior manager innovation-orientated attitudes, have been found to be important determinants of innovation. First, senior manager *support for innovation*, reflected in encouragement for innovative behaviour, assistance in developing new ideas, and the provision of adequate resources to innovation activities (Felekoglu and

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