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Determinants of effective knowledge transfer from academic researchers to industry practitioners

Mohammad Mehdi Rajaeian*, Aileen Cater-Steel, Michael Lane

School of Management and Enterprise, University of Southern Queensland (USQ), Australia



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ABSTRACT

Engagement of academic researchers in dissemination of research-generated knowledge to industry is expected to increase the impact of research. We employed a mixed-methods research approach to identify and investigate the factors that may determine the *effectiveness* of such engagement at the individual level by investigating knowledge-transfer activities of researchers in the IT outsourcing field. The findings indicate researchers' motivation, knowledge transfer mechanisms, and communication/interaction channels with industry may explain effective knowledge transfer. *Impact-minded* researchers were significantly more effective than *publication-minded* researchers in knowledge transfer. Recommendations to research managers and policy makers are provided.

1. Introduction

Academic research can offer implications for practice and policy in different direct and indirect ways (Easterby-Smith et al., 2008; Weiss, 1979). One of the intended outcomes of academic research is for industry to use the research outcomes. Increasing the impact of academic research on industry has been an enduring concern of researchers and policy makers. Governments consider strong university-industry collaboration as a key factor contributing to economic development (Kochenkova et al., 2016). In response, strategies to exploit the academic-generated knowledge in industry, such as collaborative research and academic entrepreneurship are becoming prevalent (Etzkowitz, 2003; Etzkowitz and Leydesdorff, 2000). Programs that aim to facilitate and foster the dissemination of academic-generated knowledge to industry have become widespread in many countries (Chai and Shih, 2016). These programs emphasize the role and responsibility of the *knowledge producer* in the dissemination of created knowledge. Knowledge transfer (KT) can occur through various knowledge-related collaboration activities undertaken by academic researchers with non-academic organizations, called “academic engagement” by Perkmann et al. (2013, p.424).

Prior studies (e.g. Kalar and Antoncic, 2015; Labory et al., 2015; Landry et al., 2010) have shown several knowledge transfer activities undertaken by academic researchers and various factors that affect the extent of researchers' engagement in knowledge transfer (e.g. demographics, career trajectory, attitudes, and motivation). Also, the extant academic literature on university-industry collaboration and academic knowledge transfer at the *macro* (i.e. *policy*) level (Kochenkova et al., 2016) and *organizational* level (Ankrah and Al-Tabbaa, 2015) is extensive. However, the literature is largely silent on the factors that determine the *effectiveness* of these knowledge transfer activities at the individual level (Iorio et al., 2017). Our study is motivated also by recent research (Franco

* Corresponding author at: Department of Industrial Engineering and Management, Sadjad University of Technology, Iran, and School of Management and Enterprise, University of Southern Queensland (USQ), Australia.

E-mail addresses: MohammadMehdi.Rajaeian@usq.edu.au (M.M. Rajaeian), Aileen.Cater-Steel@usq.edu.au (A. Cater-Steel), Michael.Lane@usq.edu.au (M. Lane).

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and Haase, 2015; Neves and Franco, 2016) that raised the problem of underappreciated career effects of academic engagement and its possible discouraging effect on the engagement of academic researchers with industry.

Investigation of effective academic knowledge transfer is a challenge because knowledge is multifaceted, transferring knowledge is a complex task, and the paths of knowledge transfer from academia to practice can be indirect (Easterby-Smith et al., 2008; Szulanski, 1996; Weiss, 1979). The need for such enquiry has been highlighted by persistent concerns in many academic disciplines about the research-practice gap (Backer, 1991), e.g. in management (Bansal et al., 2012; Brennan, 2008; Daft and Lewin, 1990; Kieser et al., 2015; O'Brien et al., 2010; Pfeffer, 2007; Starkey and Madan, 2001) and Information Systems (IS) (Becker et al., 2015; Klein and Rowe, 2008; Rosemann and Vessey, 2008).

To overcome these challenges we delimited the scope of the study to an applied research domain. In this study we focused on the knowledge transfer activities of researchers who have developed decision support models/frameworks for IT outsourcing (ITO) decisions. IT outsourcing is an area within the Business/Management and Information Systems disciplines that has been recognized as a field of research for about three decades (Lacity et al., 2010). Despite extensive research in this field, some studies reported limited impact of IT outsourcing research on decision making in IT outsourcing practice (Brannemo, 2006; De Looft, 1995; Dibbern et al., 2012; Westphal and Sohal, 2016). Business/Management and Information Systems are applied and profession-based disciplines. In these fields, it is essential that research is relevant to practice and research-generated knowledge is presented in such a way that its practical value is clear and understandable (Kanellis and Papadopoulos, 2009). Without research outcomes relevant to practice, the very existence of such applied research disciplines could be questioned (Rosemann and Vessey, 2008). The ITO field, similar to many other disciplines, suffers from the problem that a great amount of knowledge created by means of academic research is not applied in practice (Gill, 2010; Siegel et al., 2003b), or at best it is unclear what is the extent of uptake of ITO academic research by practice, and often industry practitioners (IT decision makers) are oblivious to research-generated knowledge (Westphal and Sohal, 2016). This problem motivated us to study the transfer of decision-making knowledge for IT outsourcing, generated by academic researchers, to the practice world. We focused on research that proposed decision support artefacts (model, framework, software) for IT outsourcing decisions. This body of research is *prescriptive* in nature and targets organizational decision makers involved in different IT outsourcing decisions. Examples of these important decisions include: *to outsource or not?*; *what is the optimum level of ITO for the organization?*; *what IT functions/services should be outsourced?*; *which IT supplier is better to select?* (Blaskovich and Mintchik, 2011; Lacity et al., 2010). In recent years, IT outsourcing decisions also include cloud sourcing options such as *decision to adopt cloud services and cloud service/provider selection* (Lacity and Reynolds, 2014). Cloud sourcing is an evolution of ITO that enables organizations to purchase IT resources and capabilities from another organization as a service (Yigitbasioglu et al., 2013). Cloud sourcing has been increasingly adopted in recent years and its adoption continues to grow (Huang, 2016).

To investigate the knowledge-transfer activities employed by academic researchers in the IT outsourcing decision support field we focused on the following research questions:

RQ1: *What knowledge-transfer activities are employed by academic researchers in the IT outsourcing decision support field?*

RQ2: *What factors may explain effective knowledge transfer from academic researchers to practitioners at the individual level?*

RQ3: *What types of communication channels (interpersonal, mass media) are effective in transferring academic-generated knowledge to industry?*

Informed by a communication theory perspective on the knowledge transfer process (Kuiken and van der Sijde, 2011; Szulanski, 1996), we consider three main criteria for *effective academic knowledge transfer*. First, evidence must exist that the academic engagement has resulted in the transfer of knowledge, whether direct or indirect. Second, the transferred knowledge must be generated from academic research. Third, uptake of the communicated knowledge by practitioners (industry) should be evident. In other words, to ensure effectiveness of academic knowledge transfer, there must be evidence that the message (i.e. knowledge) has been delivered to the intended receivers (i.e. practitioners). For example, in the case of transfer of knowledge by writing a book, the knowledge transfer will not occur until the practitioner has read the book. If the communicated knowledge is then used by practitioners, then research impact can be claimed. We seek to shed light on the problems associated with the transfer of academic research-generated knowledge to industry.

This paper is organized as follows. In Section 2, literature with regard to academic engagement and academic knowledge transfer is reviewed. In Section 3, the mixed method approach employed in the study and the sample selected are described and justified. In Section 4, the results of the data analysis are provided to answer the research questions. Following that, the main findings of the study are discussed. The final section presents a summary and conclusions, with contributions, recommendations for industry managers, researchers and research policymakers as well as limitations and further research directions.

This study contributes to the literature by exploring the impact of a various factors on effective academic KT, and highlights the significance of researchers' motivation and the type of KT channels used on the effectiveness of academic knowledge transfer. Moreover, this study to the best of the authors' knowledge is the first that explores the knowledge transfer activities of ITO researchers.

2. Literature review

2.1. Motivations and outcomes of academic knowledge transfer

Prior studies identified two categories of personal motivational factors that drive academic research: extrinsic rewards (e.g. tenure, promotion, income increase), and intrinsic rewards (e.g., an individual's personal satisfaction from solving research puzzles, achieving peer recognition, contribution to the discipline) (Chen et al., 2006).

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