

Chapter 92

Understanding the Influence of R&D Collaboration on Organizational Innovation: Empirical Evidences

Lurdes Simao

University of Beira Interior, Portugal

Mário Franco

University of Beira Interior, Portugal

ABSTRACT

Collaboration in R&D has had a positive influence on the performance of firms, but little is known about its impact on organizational innovation. Therefore, this article analyzes the influence of R&D collaboration on firms' ability to introduce organizational innovation. A quantitative approach was used, based on a sample of 5.079 Portuguese firms from the CIS 2010-Community Innovation Survey 2010. The empirical evidence showed R&D collaboration with clients to be predominant in organizational innovation adoption. Cooperation with competitors, universities and state laboratories has no significant influence. R&D collaboration with other firms within the same group, and with suppliers has a significant positive impact on organizational innovation in the workplace. In addition, collaboration with consultants is significant in business practices and external relations. Several theoretical and practical implications are presented.

1. INTRODUCTION

In knowledge-based economies, innovation has been identified as a determinant factor of firms' economic success. As such, information sources and knowledge as the supreme source of innovation (Adams, Bessant, & Phelps, 2006; Hidalgo & D'Alvino, 2014); determine the capacity a firm must have to adopt the necessary innovations in time to attain a competitive advantage (Evangelista & Vezzani, 2010; Tidd, 2001) in the market.

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A growing body of literature studying the determinants of innovation has identified collaboration in Research and Development (R&D) as a critical success factor in introducing innovations (Gellynck & Vermeire, 2009; Gronum, 2012; Gupta & Barua, 2017; Ozman, 2009). Nevertheless, this literature often concludes that collaboration in R&D is not always beneficial (Hyll & Pippel, 2016; Rodriguez, Doloreux, & Shearmur, 2017). A series of studies have investigated the impact of collaboration in R&D, with different types of cooperation partners, on firms' innovative performance (Kang & Kang, 2010; Niesten & Jolink, 2015; Zhou, 2012), considering that, for example, collaboration with competitors allows access to a different knowledge base from collaboration with universities.

Research into innovation has generally focused on technological innovation, i.e., product and/or process innovation (Crossan & Apaydin, 2010). This emphasis on technological innovation is the result of a concept of innovation of a technological nature, which has moulded scientific research on innovation (OECD, 1997). Due to research into innovation having grown continually and spread to many fields of study, including sociology, psychology, business administration and public management (Damanpour & Aravind, 2012), the concept of innovation has also changed over recent years towards a wider perspective, including non-technological innovation such as organizational and marketing innovation (Mothe & Nguyen Thi, 2012; OECD, 2005).

In these circumstances and considering that cooperation has been little explored as a determinant of organizational innovation (Tether & Tajar, 2008), deeper research becomes necessary to examine the combined influence of cooperation and organizational innovation on firms' capacity to introduce innovation to the market (Mention, 2011). Although the resource-based view of the firm (Barney, 1991; Wernerfelt, 1984) highlights the relevance that internal activities, and in particular R&D, have for innovation success, the truth is that openness, commonly associated with the acquisition of external knowledge by means of both formal and informal cooperation, is increasingly recognised as a dynamic complementary element (Rodriguez, Doloreux, & Shearmur, 2016). Indeed, it is pertinent to study this area, drawing attention to and analyzing the national business panorama.

Following the last edition of the Oslo Manual (OECD, 2005), this study concentrates on organizational innovation and aims to analyze the influence of R&D collaboration on firms' capacity to introduce organizational innovation, with analysis focusing on manufacturing, commercial and service industries located in Portugal in the period 2006-2008.

In accordance with the objective presented and with the defining parameters of the research, the fundamental question to be answered is: does collaboration between firms in R&D with different types of partners have an impact on the adoption of organizational innovation? Therefore, to supplement the limited literature on the impact of cooperation on organizational innovation, this study contributes to developing existing theory.

This chapter is structured as follows: Section 2 reviews the literature on organizational innovation as a type of non-technological innovation, as well as identifying and characterizing different partners in R&D collaboration. Section 3 presents the data and research methodology used. The results of the empirical research are presented and discussed in Section 4. The last section deals with final considerations and implications, as well as limitations and suggestions for future study.

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