

## Chapter 21

# The Effect of R&D Cooperation on Organizational Innovation: An Empirical Study of Portuguese Enterprises

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### ABSTRACT

*The literature on innovation suggests that cooperation in R&D has a very positive effect on the performance of firms' technological innovation, but little is known about its impact on organizational innovation. Thus, this chapter aims to analyze the effect of R&D cooperation on firms' abilities to introduce organizational innovation. A quantitative study was made based on a sample of 5,079 Portuguese firms from the CIS 2010-Community Innovation Survey 2010. The results showed R&D cooperation with clients to be predominant in organizational innovation performance. Cooperation with competitors, universities, and state laboratories has no significant effect. R&D cooperation with other firms within the same group and with suppliers has a significant positive impact on organizational innovation in the workplace. In addition, cooperation with consultants is significant in business practices and external relations. This study contributes to the development of theory on organizational innovation, examining the relationship between R&D cooperation and organizational innovation.*

### 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 innova-

tion (Adams, Bessant, & Phelps, 2006) determine the capacity a firm must have to adopt the necessary innovations in time to attain a competitive advantage in the market.

A growing body of literature studying the determinants of innovation has identified coop-

DOI: 10.4018/978-1-4666-8348-8.ch021

eration in Research and Development (R&D) as a critical success factor in introducing innovations (Gellynck & Vermeire, 2009; Gronum, 2012; Ozman, 2009). Nevertheless, this literature often concludes that cooperation in R&D is not always beneficial, for example, due to the undesired spread of knowledge, resulting in the need for a broader view of the impact of R&D cooperation on firms' innovation. For this reason, a series of studies have investigated the impact of cooperation in R&D, with different types of cooperation partners, on firms' innovative performance (Kang & Kang, 2010; Zhou, 2012), considering that, for example, cooperation with competitors allows access to a different knowledge base from cooperation with universities.

Research into innovation has generally focused on technological innovation, i.e., product and/or process innovation (Pippel, 2014). 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, 2011), the concept of innovation has also changed over recent years towards a wider perspective, including non-technological innovation such as organizational and marketing innovation (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 effect of cooperation and organizational innovation on firms' capacity to introduce innovation to the market (Mention, 2011). 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

effect of R&D cooperation on firms' capacity to introduce organizational innovation, with analysis focusing on industrial, 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 cooperation between firms in R&D with different types of partners have an impact on the performance 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 cooperation. 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.

## **LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT**

### **Organizational Innovation**

The literature on innovation generally deals with technological innovation, i.e., product innovation (Brettel & Cleven, 2011; Nieto & Santamaría, 2007; Un, Cuervo-Cazurra, & Asakawa, 2010), or process innovation (Tomlinson, 2010) related to the development of new technologies. This type of innovation tends to focus on industry, neglecting the service sector (Hipp & Grupp, 2005), but the last version of the Oslo Manual extends the concept of innovation, to include non-technological innovation and namely in the context of this study, organizational innovation.

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