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Determinants of foreign ownership in international R&D joint ventures: Transaction costs and national culture

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Abstract

In this study, we integrate the transaction costs economics and national culture perspectives by examining the determinants of foreign equity ownership in international R&D joint ventures. Specifically, we focus on the impact of different uncertainty dimensions–environmental and behavioral–on the share of equity that multinational enterprises take in their overseas R&D joint ventures. We further investigate the roles that two national culture components–power distance and uncertainty avoidance–play in this process. Using 543 international R&D joint venture announcements by foreign enterprises in China, India, Japan, and the United States during the period of 1985 to 2004, our results provide support for both transaction costs economics and the national culture perspectives.

Keywords: International joint ventures; Equity ownership; R&D

1. Introduction

R&D and technology innovation have long been important issues in management research (e.g., Gunasekaran, 1997). In general, there are three ways to enhance a firm's innovation capability and expand its technology capacity: (1) acquisition of technology from outside; (2) internal R&D activity; and (3) collaboration with partners. In recent years, there has been a proliferation of research in international R&D collaboration (e.g., Gunasekaran, 1997; McArthur and Schill, 1995). This interest reflects the fact that technological advances and globalization

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create the need for inter-firm R&D cooperation in order to stay competitive. In this paper, we focus on international R&D joint ventures as the research locus, since joint ventures have been a frequently used form of R&D collaboration (Gunasekaran, 1997).

The purpose of our study is to examine the factors that are related to multinationals' equity ownership in international R&D equity joint ventures (henceforth referred to as simply international R&D joint ventures). Compared to wholly owned overseas R&D subsidiaries, the major advantage of R&D joint ventures is sharing the costs and risk of in-house R&D activities with partners. However, the risk of technology spillover to rival firms and partner opportunism also increases the control costs of such R&D collaboration. Therefore, selecting the appropriate equity ownership level to enter an equity R&D joint venture is a very important strategic decision facing managers.

In the last decades, researchers have analyzed ownership strategies as well as governance structures in international business, for example, wholly owned versus joint ownership (e.g., Buckley and Casson, 1976; Hennart, 1982). In particular, a number of studies have explored the equity ownership strategies of multinationals when they form joint ventures (e.g., Blodgett, 1991; Gatignon and Anderson, 1988; Hennart, 1991; Pan, 2002). The R&D joint venture, as one governance mode, has been compared with other types of non-equity R&D alliances (e.g., Oxley, 1997). However, little research, to date, has examined equity ownership strategy within the domain of R&D joint ventures. Considering the unique characteristics of R&D joint ventures, such as the high risk of partner opportunism and R&D spillover, the issue of equity ownership and governance structure in such joint ventures deserves further research. In addition, equity ownership strategy in R&D joint ventures may be more sensitive to factors that are related to these characteristics than are non-R&D joint ventures (e.g., purely marketing and/or manufacturing joint ventures).

Our study contributes to the literature by integrating the transaction costs economics (TCE) and national culture perspectives. TCE more or less assumes risk neutrality on the part of organizations. It is the situation–the uncertainty, the transaction frequency, and the asset specificity–that determines the mode of ownership and control desired. The national culture perspective takes a more behavioral view, as opposed to an economic one. Culture will impact not only attitudes toward risk, but also the mode or degree of control desired.

Our study also contributes to the literature on international joint ventures because of its multi-country sample. Prior studies on equity ownership tend to be limited to a single source country (e.g., Gatignon and Anderson, 1988; Hennart, 1991) or to a single host country (e.g., Pan, 1996, 1997, 2002; Pan and Li, 2000). Our sample consists of 543 R&D joint ventures located in four countries: China, India, Japan and the United States. First, we believe that our sample provides a diversity of both host countries and source countries, and makes our results robust, since it consists of two major developed countries: the United States and Japan, and the two largest emerging economies: China and India.

Second, prior international joint venture studies have focused on R&D activities only in developed countries (e.g., Vonortas, 1997; Katz et al., 1996). However, multinational companies are now starting to enter research partnerships in emerging economies, since research infrastructures are improving there, local markets are growing, and R&D labor costs are low. We expect some variables that influence the R&D decisions of multinational companies in emerging economies may be different from those in developed countries.

2. R&D equity joint ventures and equity ownership strategies

This study specifically focuses on R&D equity joint ventures. Typically, this venture is an independent business entity created by two or more separate organizations with shared equity