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## Innovation and the geographical and organisational dimensions of outsourcing: Evidence from Italian firm-level data

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#### ABSTRACT

The paper investigates the diversified patterns of outsourcing in the Lombardy region and relates them to the probability of introducing product and process innovation. Based on a large firm-level survey, we show that outsourcing processes are strongly regionally embedded and that offshoring is still a limited phenomenon. Outsourcing strategies are shown to be positively related to firms' innovation. In particular, the outsourcing of service activities is mostly related to product innovation, thus suggesting that firms successfully pursue core strengthening strategies. Our econometric estimates show that both geographical and organisational proximity matter. Indeed, the positive association of services with innovation is strongly related to their regional dimension, which points towards the importance of local user–producer relationships. When outsourcing crosses national borders, keeping the outsourced activities within extended organisational boundaries (i.e. within the group or network of affiliates) appears relevant, particularly with reference to R&D activities.

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#### 1. Introduction

Outsourcing represents a defining character of the contemporary economic dynamics. Fragmentation and reorganisation of business activities across functions and space have been significantly accelerating over the last cou-

ple of decades, driving structural change at firm, industry and country level. Instead of continually growing in size and scope, the modern "corporate model" has been leaning towards network-based typologies, with an ever more diversified range of activities and functions being the object of outsourcing decisions. Outsourcing strategies no longer concern only fairly specialised repetitive tasks, but spread to a wide range of activities, including sensitive functions and knowledge-intensive tasks, such as design and R&D (Howells, 1999; Leiblein et al., 2002). The phenomenon has implied widespread leverage of technology and knowledge from external sources, in the attempt to flexibly respond to the pressures and challenges of competition.

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The functional breadth of the outsourcing phenomenon is but one dimension of a complex emerging trend. The spatial distribution of outsourced activities, and the resulting geographical span of production networks, contribute to shaping global and local value chains, which affect, beside firms organisation and performance, the insertion of regions and countries in the international division of labour (Grossman and Helpman, 2002; Gereffi and Sturgeon, 2004).

The late innovation literature devotes large attention to the emergent "distributed" organisational forms and coordination mechanisms across firms' boundaries, such as open innovation, R&D networks, strategic alliances and strategic sourcing (e.g. Brusoni et al., 2001; Chesbrough, 2003; DeBresson and Amesse, 1991; Gulati et al., 2000; Laursen and Salter, 2006; Narula, 2001; Powell et al., 1996; Prahalad and Hamel, 1990). In this perspective, outsourcing represents an important source of specialisation and shift to market-mediated forms of resource and competence integration for an ever more diversified range of activities and functions.

Yet, empirical investigations relating innovation to outsourcing strategies are still rather sparse, and often focus on the motives underlying outsourcing decisions (Girma and Görg, 2004; Kimura, 2002; Maskell et al., 2007; Mol, 2005; Tomiura, 2005). In both managerial and economics fields, empirical assessments have been mostly analysing the correlation between deverticalisation and general measures of firm performance, such as labour productivity or financial outcomes (Gilley and Rasheed, 2000; Leiblein et al., 2002; Rothaermel et al., 2006). The empirical literature that deals with the spatial dimension investigates the impact of activities' "distributedness" on innovation (Coombs and Metcalfe, 1998); it mostly concentrates on the relevance of proximity and clustering (Boschma, 2005) or on the offshoring strategies of multinational firms. Particularly with respect to offshoring, empirical investigations based on large samples representative of diversified economic systems at large provide a rather sparse evidence.

The present contribution adds to the literature by exploring the spatial and functional dimensions of the outsourcing trends that are transforming an advanced manufacturing region, relating this dynamics to firm-level innovation, in terms of both product and process innovation. It does so on the basis of a large firm-level dataset, which is representative of the regional economic structure of Lombardy, Italy's leading economic region. The empirical analysis therefore aims at assessing the relationship between innovation and outsourcing, taking into account its breadth, that is, the types of activities concerned: production, R&D and services. Furthermore, for each of these areas of activity, we consider the geographical span of outsourcing, distinguishing between local (intra-regional) outsourcing vs. offshoring. We finally combine the spatial dimension with the organisational one, by assessing the relevance of organisational proximity, in the form of intragroup outsourcing.

The paper is organised as follows. Section 2 summarizes the key issues of the debate on outsourcing and offshoring, on one side, and innovation capabilities and performance, on the other side. Section 3 describes the dataset

and methodology. Section 4 introduces some descriptive statistics about outsourcing patterns in Lombardy. Section 5 presents the main econometric results on the relationship between outsourcing and innovation. Section 6 concludes.

#### 2. Outsourcing and innovation: the main issues

A great variety of approaches in both the economics and management literature have investigated the determinants and spatial characterisation of outsourcing, as well as its effects at firm and system level. The literature typically differentiates between core activities and ancillary functions, both in terms of rationales for outsourcing and its impact on firm's performance.

There is a broad consensus about the positive effect of outsourcing non-strategic, ancillary activities, in relation to both financial performance and innovation output (Gilley and Rasheed, 2000: Leiblein et al., 2002: Rothaermel et al., 2006). The main advantages of outsourcing non-strategic manufacturing tasks are: a reduced financial burden, due to a decline in manufacturing costs and fixed investment in plant and equipment: a shift of financial and managerial resources to core activities; and finally, access to specialised knowledge for non-strategic activities. In doing so, firms can apply organisational structures and managerial practices that better suit their internal capabilities and competencies, and, accordingly, increase their efficiency (Gilley and Rasheed, 2000). Moreover, greater managers' and workers' commitment on core activities increases responsiveness and flexibility, generating further beneficial impacts on firm performance, particularly in markets and industries characterised by high competitive pressure, short product life cycle and complex technologies. The outsourcer is also able to take advantage of suppliers' specialised knowledge and access emerging technologies without bearing the entire costs and risks for their development (Quinn, 1992). Outsourcing ancillary activities is therefore an option for saving on costs, complementing the firm-specific competencies, while preserving and strengthening its core capabilities.

Cost-saving and core-competence strategies are described as the main drivers of the recent upsurge in outsourcing, following increased international competitive pressures and the gradual productive and commercial integration of low-cost emerging economies (Feenstra, 1998). Both multinationals and SMEs have taken advantage of factor price differtials across countries and regions, and targeted productive locations characterised by lower labour costs, where they sub-contract out to local suppliers. However, the cost savings associated with outsourcing may not be as great as they seem, especially if foreign suppliers are involved (Gilley and Rasheed, 2000). The transaction costs associated with repeated overseas market relationships can be significant. Spatial dispersion can result in longer lead times, larger inventories, communication and co-ordination difficulties, reducing the advantage of lower fixed costs, reallocation of resources to strategic tasks and greater flexibility.

Furthermore, costs advantages from outsourcing can arise also when suppliers are located in high costs areas. This is the case of urban agglomerations or manufacturing

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