

ESTADO DEL ARTE DEL PROYECTO: “Open Innovation in SMEs: Evidence from the Colombian and European innovation survey”

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RESUMEN: SME open innovation has received limited attention, especially among SMEs. When it is analyzed in SMEs, it is mostly associated to new product development, overlooking the fact that process innovation is a strategy commonly pursued by SMEs that requires organizing search strategies or external knowledge sourcing for that purpose. Focusing on European firms (SEMs) and classifying for their technological innovation (product, process or product & process orientation), this project is devoted to the understanding of key external sources of SME innovation and also showing how open innovation is linked to SME performance. The results will contribute to the literature on SME open innovation.

MARCO TEÓRICO: THEORETICAL FRAMEWORK The study of external knowledge sourcing, as a form of inbound open innovation, requires the consideration of internal capabilities that complement search strategies (e.g. Laursen & Salter, 2006; Hervas-Oliver et al., 2014; Brunswicker & Vanhaverbeke, 2015; Pérez, 2019). Thus, we focus on disentangling how SMEs construct and configure their process-oriented innovation strategy, considering the interplay of both internal and external (search strategies) sources of knowledge to innovate. Internal capabilities represent a firm’s in-house innovation activities that also facilitate the access to external sources of knowledge, facilitating the integration and exploitation for innovation (Cohen & Levinthal, 1990; Caro Moreno, 2016). In the specific case of process development, internal capabilities constitute those routines to access, adapt and integrate external knowledge and enable firms to benefit from those external sources or search strategies (Robertson, Casali, & Jacobson, 2012; Buitrago, Duque & Robledo, 2020). Thus, in this study we refer to SME innovative strategy as the combination of both internal and external (openness) sources of knowledge to innovate in process-oriented SMEs. This combination builds a complex system of (process-based) capabilities, resembling that view of complementarities in the RBV (resource-based view of the firm, e.g. Peteraf (1993). According to this perspective, the combination of internal (to the firm) and external (Dyer & Singh, 1998) sources of knowledge configures a synergistic and complex higher-order capability to innovate that complements and reinforces each component, thereby forming interrelationships difficult to imitate, contributing thus to improving a firm’s innovation capability from the complex integration of internal and external sources of knowledge competitive advantage: this complex integration of diverse sources, produces an inimitable system that improves all concerned (e.g. Rivkin, 2000; Teece, Pisano, & Shuen, 1997; Espejel García, Illescas Marín, Hernández Montes, Santos Moreno & Ramírez García, 2018), forming a SME innovative strategy. As Ortega-Argiles et al., (2009) point out, addressing SMEs requires consideration of the high heterogeneity of innovative strategies in SMEs, ranging from R&D performers to those non-R&D-based more focused on networking.

Deepening on SME heterogeneity, as Spithoven et al., (2012) point out, different categories of SMEs may cope differently with the challenges related to open innovation. Differing search strategies, however, are contingent on the type of innovation capabilities a firm possesses: external sourcing is facilitated (and limited) by the internal capabilities that a firm possesses (or lack thereof) (Chesbrough, 2006; Cohen & Levinthal, 1990). Despite the rapid growth of the term open innovation, characterized by Chesbrough, (2003), literature on search strategies within the realm of innovation proliferated long before. Innovation and its determinants have been extensively studied by seminal works such as those of (Thomas J. Allen & Cohen, 1969; Thomas John Allen, 1977; Hippel, 1988; Kline & Rosenberg, 1986; Pavitt, 1984; Rothwell, 1974; Teece, 1986), among others, who claimed that external linkages and sources of knowledge play an important role in innovation. Such works shifted gradually scholars' conversation on innovation toward firms' boundary-spanning search strategies, and thus served to crystallized the key importance of external sources of knowledge to a firm's performance (e.g. Dyer & Singh, 1998). A firm's external knowledge sourcing indicates how firms build their search strategy in order to access different types of external (to the firm) knowledge. Thus, the differing and distinct nature of interactions with external innovation actors clarifies our understanding of search strategy in SMEs (Dahlander & Gann, 2010). External knowledge sourcing spans many types of partners providing access to different natures of knowledge such as industry (supply-chain), science, technology, etc. (Hippel, 1988; Kline & Rosenberg, 1986). This diversity of sources ranges from customers, suppliers, competitors or consultants to universities, seminars or research organizations, among many others (e.g. Eurostat, 2005; Laursen & Salter, 2006). Each different source of external knowledge to innovate provides a very different value and, more importantly, implies a specific combination with a firm's internal capabilities that enable the access, integration and utilization of that particular type of external source of knowledge (Brunswick & Vanhaverbeke, 2015; Cohen & Levinthal, 1990). SMEs use non-internal means of innovation more than large firms, as they consider alliances or network as ways to extend their technological competences (Edwards, Shaw, & Collier, 2005; Rothwell, 1991), meaning that networking is a crucial strategy to get access to knowledge and thus innovate (S. Lee, Park, Yoon, & Park, 2010; Robertson et al., 2012:825), especially in bounded regional ecosystems (Radziwon & Bogers, 2018). Despite this propensity to networking, SMEs present rather weak internal innovation capabilities and a poor absorptive capacity but they are still deeply embedded in a networking process mainly with suppliers and mainly limited to the supply-chain (Heidenreich, 2009; Rammer et al., 2009; Spithoven et al., 2012). In this context, Rammer et al., (2009) empirically show how innovative SMEs rely heavily on external knowledge, such as that embodied in capital formation or that absorbed through direct technological acquisition from suppliers. Similarly, Heidenreich, (2009) characterizes SMEs as those companies that mainly develop process innovations and present strong dependencies on the external provision of machines, equipment and software, being suppliers the most important source for their information and knowledge to innovate. This external orientation is the typical supplier-driven category (Pavitt, 1984) and fits within those less advanced embodied-knowledge SMEs.

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