Knowledge management and technological innovation in family SMEs context

Veronica Scuotto, Simona Alfiero, Maria Teresa Cuomo and Filippo Monge

Abstract

Purpose – *This paper conceptually aims to discuss the dual role of knowledge management (KM) and technological innovation, which brings about innovations, although it can be limited by psychological and emotional ownership.*

Design/methodology/approach – *This study examines the real impact of the paper on KM and technological innovation in family small to medium enterprises (FSMEs). This is a unique context affected by psychological and emotional ownership. However, COVID-19 has forced FSMEs to consider new strategies and practices to preserve their competitive advantage.*

Findings – *In this scenario, knowledge exchange, knowledge absorption and technology adoption appear relevant to the innovation process. This study offers a framework for how the duality of KM and technological innovation affects innovation.*

Originality/value – *Although extant research has explored technological innovation outcomes, a literature review reveals that accumulated studies on the drivers of technological innovation and KM in the context of FSMEs require further inquiry. Family members' emotional ownership may foster KM because identification with organizational goals enhances individuals' willingness to access and share information and stimulates new products and technological development.*

Keywords *Innovation, Technological innovation, Knowledge management, Family SMEs, Emotional ownership*

Paper type *Viewpoint*

Veronica Scuotto is based at the Pole Universitaire Leonard de Vinci, Paris, France and Department of Economics, Management and Institutions, University of Naples Federico II, Naples, Italy.
Simona Alfiero is based at the Department of Management, University of Turin, Turin, Italy.
Maria Teresa Cuomo is based at the Department of Economics and Statistics, University of Salerno, Salerno, Italy.
Filippo Monge is based at the Department of Foreign Languages, Literatures and Modern Cultures, University of Torino, Torino, Italy.

Introduction

The increasing turbulence and complexity of the business environment have made the evolution and adoption of knowledge management (KM) and technological innovation a crucial driver of performance in family small to medium enterprises (FSMEs) in recent years (Werner *et al.*, 2018; Su and Daspit, 2022). KM is included in organizational innovation (Mothe and Uyen Nguyen Thi, 2010). It is an organizational practice that spurs product innovation and innovative performance (Kremp and Mairesse, 2004; Venturini *et al.*, 2019). It encompasses creating new products (e.g. knowledge creation) and sharing innovative ideas within firms (e.g. knowledge sharing). Knowledge is crucial in all types of companies; however, information on KM in the context of FSMEs is scarce. According to a KPMG report (2022), family businesses have exhibited the ability to face challenges generated by pandemics such as COVID-19 and environmental challenges such as digital transformation. Family businesses are more resilient, agile and adaptable to exogenous shocks (see also Chrismann *et al.*, 2015). Some were retained as they received a gift during COVID-19 – the time to think about new strategies and plans for business and longevity. More attention was paid to family territory, exploring new ways to support their communities. Unlike normal businesses, family members pay great attention to nonfinancial values and actions rather

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than just financial ones. In FSMEs, knowledge is anchored in tradition rather than innovation (Ge and Campopiano, 2022).

Technological innovation in FSMEs is a promising research area due to their propensity to enhance socioeconomic wealth (Martínez-Alonso *et al.*, 2018), ownership structure and family involvement (De Massis and Foss, 2018). Family influence is often linked to emotional attachment to family assets and a desire for continuity (Chrisman *et al.*, 2015). Scholars and practitioners also believe FSMEs should harness KM and technological innovation to adapt to rapid environmental changes and achieve competitive advantage (Pirkkalainen *et al.*, 2018; Su and Daspit, 2022). Introducing new technologies allows FSMEs to launch new products and meet consumer demand. Although extant research has explored technological innovation outcomes (De Massis *et al.*, 2013), a review of the literature reveals that the accumulated studies on the drivers of technological innovation and KM in the context of FSMEs require further inquiry (Nieto *et al.*, 2015; Gordon, 2019; Su and Daspit, 2022).

Knowledge-based view of the firm

In today's uncertain environment, firms must deploy knowledge to foster innovation and achieve competitive advantage (Grant, 1991). Firms must proactively respond faster to environmental changes by building on existing explicit and tacit knowledge of ledge individuals within the organization (Smith, 2001). According to Bracci and Vagnoni (2011), KM involves various activities, from creation and circulation to exploitation. All these activities are crucial to a company's positive economic performance. However, this knowledge can be lost owing to talent mobility. Whelan and Carcary (2011) investigate this phenomenon by linking it with KM and exploring the following five drivers of knowledge:

1. creation;
2. sharing;
3. competencies;
4. retention; and
5. individual know-how.

From the time being, KM drivers are becoming more crucial in companies (Daghfous *et al.*, 2013; Mittal and Kumar, 2019). In this regard, it is possible to consider phases of idea exchange that use tacit and explicit knowledge (Bracci and Vagnoni, 2011). Konno and Schillaci (2021) remark on "BA" (or place) as a necessary element for creating new knowledge. Such a space predominately refers to a semantic space where knowledge originates from the intellectual capital of a business environment. In addition, physical space contributes to knowledge creation, which is influenced by organizational culture, climate and behavior. In the FSMEs context, KM is important for exploring how knowledge is transformed from its tacit to explicit form, involving the duality of family and business actors. García-Morales *et al.* (2008) recognize the high value of transferring individual knowledge across organizations to create new innovations. Accordingly, new market opportunities are explored, and new knowledge is created (Madanaguli *et al.*, 2022). KM is embraced in the process of technological innovation (Kremp and Mairesse, 2004). This requires acquiring, processing, transferring and implementing knowledge within the business context (Venturini *et al.*, 2019).

Knowledge management and family attachment

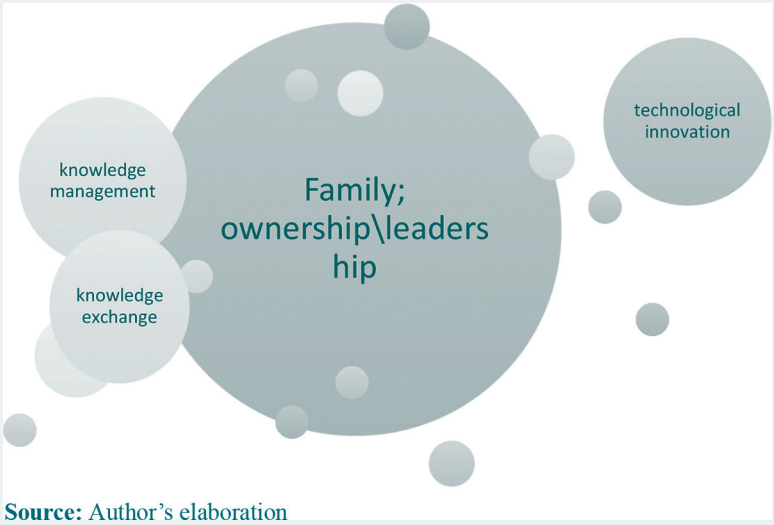
The literature explores the family attachment theory derived from the work of Bowlby (see Mikulincer and Shaver, 2009). Family attachment theory relies on the level of relational bonds, and the concept of closeness has emerged as a key indicator in determining the

level of bonds. For example, in a family scenario, the availability and responsiveness of parents and caregivers assume a relevant role in shaping a child's sense of security (Mikulincer and Shaver, 2005). This theory has been extended from a social connotation to an organizational context (Kumar and Jena, 2020; Björnberg and Nicholson, 2007), which has also been connected to organizational citizenship behavior (Richards and Schat, 2011) and better work–life satisfaction (Hazan and Shaver, 1990). In an organizational environment, attachment plays a key role in understanding how to motivate employees to perform new tasks (Pierce *et al.*, 2003) and how to create a trust-based relationship. Again, referring to the FSMES' situation, a trust-based relationship induces a process of knowledge sharing from one side and attachment patterns (e.g. anxiety, avoidance and responsiveness) from the other side, which influences their willingness to make new relationships and accept new knowledge that determines the success of generating innovation. Therefore, the FSMEs literature has started to consider not only ownership, family and management (Astrachan and Shanker, 2003) but also their level of engagement with innovation, more specifically, technological innovation and KM. The latter encourages knowledge exchange developed by scope (Pirkkalainen *et al.*, 2018). Knowledge exchange is also leveraged by the level of attachment and belongingness nurtured by employees in an organization (Fernandez and Moldogaziev, 2011). Individuals need to understand the benefits of exchanging knowledge (Pirkkalainen *et al.*, 2018). If the level of attachment and belongingness is higher, the level of acceptance of new tasks or new technologies will be higher, respectively (as shown in Figure 1).

Emotional patterns and technological innovations

Developing innovations that interact with tacit knowledge allows us to gain a competitive advantage, although, in FSMEs, emotional and psychological factors also affect competitiveness. In an FSME, the sense of attachment and belongingness is strong and determines the strategies and owners' decisions. This calls for an emotional ownership framework that drives individuals toward business goals (Pierce, 2001). It is interesting how attachment and belongingness are also enforced by the sense of possession; people start using expressions such as "this is my organization" and "my job" (De massis *et al.*, 2013).

Figure 1 Family business pillars



Source: Author's elaboration

However, emotional patterns cannot be considered when developing innovations. In this realm, technological innovation helps to implement "idea generation," "problem-solving," "implementation" and "diffusion" (Utterback, 1971). Because this is considered a firm-level capability, the involvement of emotional patterns and knowledge cannot be excluded. Exploring new opportunities with the empowerment of new technologies strengthens the "BA" and stimulates the capacity and competencies of individuals to make innovations. Individuals address new product development and competitiveness. Risk aversion, family goals, business objectives and ownership shape the outcomes that stem from technological innovations (Cassia *et al.*, 2012). Regarding traditional businesses, FSMEs are likely to develop radical and incremental innovations to stay longer and remain more stable in the market (Bergfield and Weber, 2011). Cassia *et al.* (2012) stated that engagement in technological innovation is justified by the desire to improve a company's reputation.

However, some studies show that family founders' long-term goals and risk aversion negatively influence the development of highly technologically intensive activities. This is because of their willingness to be limited to using old resources and adverse changes (Nohria and Gulati, 1996).

Despite this, recent studies highlight positive attitudes toward technologies, and Soluk and Kammerlander (2021) convert crises into new business opportunities using technologies. Soluk *et al.* (2021) analyzed four family firms during the pandemic period. As a result, these firms were prone to use about technologies within their organization. They started offering new digital business solutions to customers driven by opportunity, not just necessity. It is possible to improve the process of knowledge exchange within and outside the firm (Utterback, 1971). Rau *et al.* (2019) state that the link between family attachment and technological innovation relies on the commitment of owners and employees to exchange information. In summary, greater involvement in business goals leads to a more positive attitude toward technologies for employees.

Knowledge and technology: being innovative

Considering the internal business environment as a key driver of technological innovation where knowledge exchange is developed (Utterback, 1971; Cohen and Levinthal, 1990), it is noticed the relevance of "family capital" and "family resources" to develop new innovations. However, product development can involve technological and nontechnological innovations. Technological innovation refers to changes in business models and marketing strategies, whereas nontechnological innovation concerns designing, manufacturing and launching new products and services (Mothe and Uyen Nguyen Thi, 2010; see also Damanpour, 1992). Being innovative requires the intertwining of knowledge and technology. Innovation allows for growth, positive outcomes and a better market position. As Björnberg and Nicholson (2012) state, innovation ensures a long-term business life for family firms. Technological innovation allows heritage building and improves brand reputation (Nicholson and Björnberg, 2008). The unique resource is still family "know-how" that brings up competitive advantages and business values. Diéguez-Soto *et al.* (2016) argue that the unique nature of FSMEs characterizes the innovation process: they can shift their intangible resources into products and services. Brinkerink and Bammens (2018) noted that family values and goals can leverage new investments in R&D, even though such firms tend to dedicate less of their budget. Previously, Chrisman *et al.* (2015) debated the positive and negative effects of family values, reputations and bonds on innovation. More recent studies have revealed the propensity to adopt technologies not only as a necessity but also as digital orientation driven (Soluk *et al.*, 2021). This has changed the way of thinking about technologies and their involvement in organizations.

Antecedents of knowledge management and technological innovation

When talking about intangible assets – such as knowledge, know-how and family values – it is important to analyze how previous studies recognize.

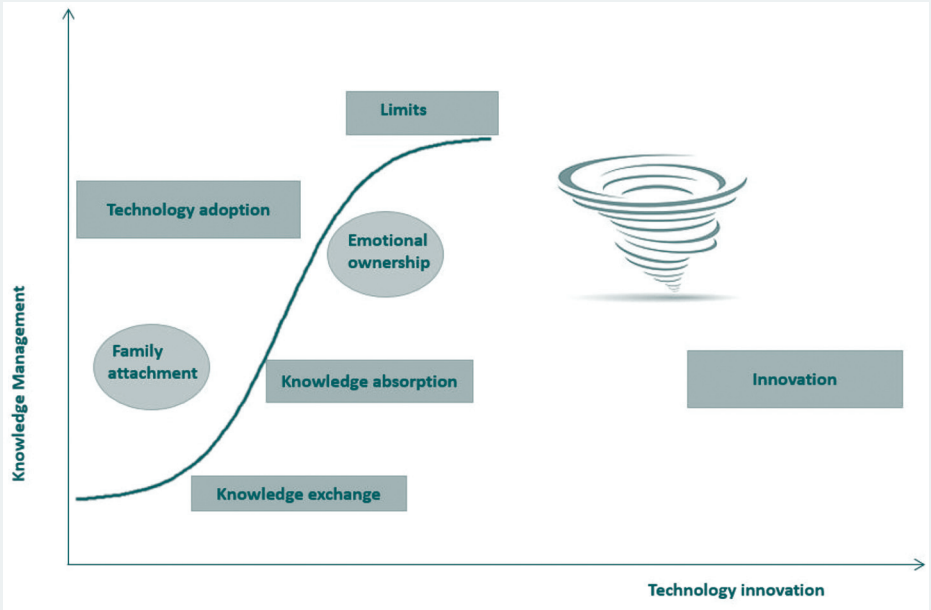
Psychological ownership is a potential antecedent to KM and technological innovation. Psychological ownership includes cognitive and affective aspects of an organization and strengthens employee bonds with firms. Cognitive aspects include opinions and beliefs, whereas affective factors rely on members' emotions (Pierce *et al.*, 2003). It augments the sense of individual gratification and satisfaction in their entire lives (Kumar and Jena, 2020). Pierce *et al.* (2003) investigate psychological ownership by introducing the concept of emotional ownership, which combines cognitive and affective elements. More specifically, Ashforth and Mael (1989) define emotional ownership as "a perception of oneness with or belongingness to some human aggregate" (p. 21). This, in turn, affects the individual's perception of social and business identity. However, it enforces a sense of belonging that enhances the KM process in terms of knowledge exchange and creation. This spurs cooperation between family and nonfamily members and enhances the need for networking. The "BA" becomes not just the space to make innovations but also to build up relationships and share knowledge.

Final remarks

While exploring KM and family businesses, along with the innovation literature, we noticed that knowledge plays a key role in stimulating innovation and improving family structure (De Massis *et al.*, 2013). Family attachment and belongingness influence the process of KM, particularly knowledge exchange (Pirkkalainen *et al.*, 2018). Accordingly, the sense of community and family identity is strengthened (Kane *et al.*, 2005). Employees feel included in the decision-making process and thus spur innovation (Gruman and Saks, 2011). This scenario was also driven by emotions. Daspit *et al.* (2018) discussed emotional capital because it has become a new intangible asset for FSMEs. It starts from a sense of family attachment that involves the whole family but is close to knowledge generation (and so innovation) and leads to emotional ownership.

Different levels of KM and technological innovation influence these steps. Family attachment occurs when KM is low and is presented in the form of knowledge exchange. While such knowledge is embraced in the company (e.g. knowledge absorption) and technology has started to be adopted, emotional ownership is requested. However, this can generate some limitations; for instance, the family and/or employees can deny the use of new technology or be reluctant to change the organization. In addition, the heterogeneity of emotions (e.g. emotional capital; Daspit *et al.*, 2018) can be a source of limitations and opportunities. Nevertheless, knowledge exchange between family members and others leverages innovation (Madison *et al.*, 2020). The capacity to convey firm-specific knowledge to a business enables innovativeness (Petruzzelli *et al.*, 2012) which is present as a vortex due to the rapid evolution and occurrence of exogenous events. As Sirmon and Hitt (2003) state, knowledge is a vital element to be shared in a trusted climate and close bonds to guarantee family succession. Erdogan *et al.* (2020) discussed the link between innovation and the ability to store knowledge. KM plays a crucial role as an enabler of technological innovation in SMEs. Understanding that effective KM is critical to technological innovation and vice versa is essential. Remarkably, emotional patterns among family members characterize the process of KM and innovation in FSMEs. This is due to the peculiar business form that focuses on trust, relationships and family attachment. In turn, KM stimulates the renewal of business positioning and performance so as to "stay longer" in the market. However, technological innovation is an enabler of renewal that uses new technologies. Consequently, it induces

Figure 2 Knowledge management and technological innovation stages in the family SMEs context



Source: Author's elaboration

FSMEs to overcome "old-school" values and traditions to welcome new innovative approaches.

Figure 2 shows the various stages that FSMEs go through as they advance through the various levels of KM and technological innovation.

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Corresponding author

Veronica Scuotto can be contacted at: veronica.scuotto@gmail.com