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The Dynamic Model of Intellectual Capital Creation in Family Business: The Dynamic Capabilities Perspective

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ABSTRACT

The purpose of this paper is to examine the role of knowledge and learning as a dynamic capability that leads to competitive advantage in family firms. It further conceptually develops a model showing the relationship between intellectual capital, firm performance, and dynamic capabilities in family firms. This study highlights knowledge accumulation, knowledge integration, knowledge codification, and the preservation of socioemotional wealth (SEW) as a set of dynamic capabilities. Such capabilities allow a family firm to sense and seize business opportunities and gain competitive advantages. Findings from the case applications reveal that family businesses benefit from the accumulation of knowledge through expertise, skills, and employment of non-family members and having family involvement as important strategic assets that lead to increased value in family firms' performance.

1. Introduction

A family business is an enterprise form that is featured in family involvement, including ownership, inheritance and authority base, and management teaming up between kin and non-kin^[1]. These businesses play an essential role in the world economy and most listed companies belong to family businesses. In the world's most advanced economies, in most countries, family businesses contribute to over 50% of the gross domestic product and have a major role in fulfilling employment^[2]. However, family firms have to face certain challenges to succeed across generations. Researchers have studied that only 12 percent of family firms are successfully passed down to the second generation and 4 percent proper to the third generation.

The overlap among ownership, management, and family that cannot separate emotion from rational thought leads to bad strategies and makes family firms vulnerable. Therefore, it is quite popular that in a family business, family rules can restrain the logic of business^[2]. This challenge becomes even more significant when family firms have to compete and survive in a fast shifting environment that requires them to constantly change and make strategic decisions.

With the increasing intensity in competition and the constant change in the market, firms (either family firms or not) need to continuously create and employ their potentially advantageous resources and capabilities to develop competitive strategies. Such constant development acquires a firm's engagement in organizational learning and

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specific knowledge accessing and introducing procedures into formal procedures^[3]. In so thinking, this study introduces the dynamic capabilities view (DCV) as the theoretical fundamentals to explain the sources of competitive advantage for family businesses^[4], but the significance of knowledge and intellectual capital in shaping these sources cannot be ignored.

Dynamic capability refers to an organization's competencies to purposely create, expand, and revise its resource base^[5]. Teece argues that organizations should establish, integrate, and reconfigure their resources and capabilities in response to the rapid changes in the environment^[6]. Since the initiation of the DCV, there has been growing research interest in dynamic capabilities^[7]. However, in the context of family businesses, despite being the most common form of businesses^[8], there have been a handful of studies addressing family businesses' development of dynamic capabilities or the related issue. The purpose of this study aims at developing a model to depict how intellectual capital (IC) affects family businesses' dynamic capabilities, which in turn boost family businesses' development of competitive advantages. The model that this study proposed primarily follows the theoretical paradigm, featuring "family business – governance – dynamic capabilities – performance"^[9]. This paradigm integrates the agency theory, stewardship theory, and dynamic capabilities into family business governance and performance. Furthermore, this study incorporates the theoretical model of strategic management of family business to develop the dynamic model^[10].

2. Theoretical Underpinnings

Studies into family businesses suggest that survival and succession of family businesses depend on both the resource availability inside and accessibility outside of the firm. Besides, capabilities are unique in family businesses since they result from the interactions within the family, between its members, and the businesses^[11]. In addition to firm capabilities in a concrete form (referring to the process development capabilities), a firm's capabilities in an abstract manner, such as development and exchange for a person's or a specific group's knowledge and expertise are identified as an intellectual asset that helps a firm in adapting its resource and asset positions to respond to the environmental dynamics^[12, 13].

For persisting an organization's competitiveness, it does not seem to be enough if merely having knowledge^[14]. Still, it also requires a firm's efforts for creating dynamic capabilities for its better uses and practices on the resource base. As a result, the study integrates the knowledge-based view (KBV) and DCV, and proposes

that dynamic capabilities and knowledge creation and application interactively rely upon for IC creation and governance in the family business context. In so doing, the following literature presents the main theory of these constructs.

2.1 Intellectual Capital

Edvinson and Malone^[15:358] have been the most significant contributors to the concept of IC as "knowledge that can be converted into value". It is the possession of knowledge that endows a company to have competitiveness in the marketplace. They argue that why a firm is able to create value lies in its intangible assets, of which the book value is hidden behind^[15]. The aftermath of Edvinson and Malone's contribution saw many researchers studying IC. The increase in awareness of IC in businesses stems from the rapid rise in innovation, technologies, and knowledge-led strategies. Such change has shifted attention of research into value creation and competitive advantage from traditional financial and assets to intangible assets and resources^[16].

IC consists of three main components: Human Capital, Structural Capital, and Relational Capital. The Meritum Project^[17] which is a collective guideline for researchers across Europe summarizes IC as the combination of human, structural and relational resources of an organization.

- *Human Capital* - the knowledge that employees possess and use, such as knowledge, skills, and experiences. Human capital is generally unique to individuals and potentially generic^[17].

- *Structural Capital* - the knowledge that stays within the firm at the end of the working day. It comprises the organizational routines, procedures, systems, cultures, databases, and so on^[17].

- *Relational Capital* - all resources linked to the external relationships of the firm, with customers, suppliers or R&D partners. It comprises that part of human capital and structural capital involved with the company's relations with stakeholders^[17].

Other studies also document that IC is the main source of an organization's competitive advantage^[18], and that it has a significant and substantive impact on performance creation of firms^[19]. According to Hosomi^[20], IC must not only be created but also be used to enhance corporate performance as well as corporate value.

In the context of family businesses, IC is generally considered as an outcome based on the strong network ties within a family firm^[21]. Where human capital and incorporated internal collective relational capital considerably represent a set of imperfect imitable resources created

through family influences^[22]. Investigations show that the knowledge that family members possess may have been passed on from generation to generation. Through collective understanding, both shared vision and attitude that encourages interactions and information exchange among individuals are gradually established^[18, 22].

Moreover, the relational capital dimension consists of the organizational resources created through interpersonal relationships such as trust, norms, obligations, and identity^[23, 22]. According to Hoffman^[24], a group's identification reinforces information exchange, communication, and knowledge sharing among members. Besides, family members also possess trust and norms developed through frequent social interaction and interdependence among family members^[21]. Norms and trust enhance social control among family members and enable the teamwork of family businesses to be successful and collaborative^[25].

2.2 Governance of Family Business

Family firms are governed differently than non-family firms, and it is the governance that presents a capability, which can be used in favor of competitive advantage. As above stated, a family business is a company featuring family involvement in various issues^[1]. With governance in heart, family business features four essential natures, such as family ownership and control, family management, multiple families and managers, and family succession^[26].

Two theories observe the difference of governance and operational performance in the family businesses: agency and stewardship theories^[27]. The agency theory suggests that the separation of ownership and control (the agents) in a family business increases the cost of corporate governance^[2]. The information asymmetry between the principal and the agent and their different motivations leads to conflicts between family and nonfamily members, thus causing agency problem and particularly agency costs^[2, 26]. Stewardship theory, on the other hand, stresses that in a family business, managers are viewed as dutiful, reliable stewards with high organizational commitment. Into the stewardship theory, research generally argues that industrial managers, who are driven by both social and achievement factors, have a tendency towards collectivism^[26].

These two theoretical views are widespread and prevalent in the family business field. The major consideration is that, in general, the superior managers or leaders in a family business are family members or have a tight connection with the family^[28]. Miller and Breton-Miller^[26] explored the relationship between family business governance and financial performance from agency theory and stewardship theory. They infer the steward behavior of

family businesses including specialization, reduction of shortsighted acquisitions or layoffs, increased investment in R&D, training and capital expenditures^[26].

2.3 Dynamic Capabilities

As it is widely acknowledged in the strategic management field, the concept of dynamic capabilities was initially defined by Teece^[6:516] as "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments." Since then, strategic management research has provided various theories concerning dynamic capabilities.

In Teece's sensing-seizing-transforming model^[4], sensing refers to an organization's capacity to continuously scan the organizational environment. Seizing refers to developing and selecting business opportunities that fit with the organization's environment and its strengths and weaknesses^[4]. Seizing fuels better strategic decisions like investments because it creates a bridge between external and internal information and knowledge. Transforming (and reconfiguring) on the other hand refers to the ability to recombine and reconfigure assets and organizational structures as the enterprise grows, and as markets and technologies change^[30]. Transforming is necessary because it involves putting decisions for new business models, product or process innovations, improving the infrastructure, ensuring that the workforce has the required skills through training and implementing the required structures and routines.

These processes are considered as firms' learning mechanisms. However, in family business, learning is not only based on sensing, seizing, and transforming, but also on the preservation of sociemotional wealth (SEW)^[31, 32], which refers to the utilities family-owners derive from the noneconomic aspects of the business^[32]. Family firms obtain SEW from many sources, for example, family name identified with the firm to enhance the firm's image, or the feeling of closeness between the family-owners and the firm affecting the firm's strategic management^[31]. The extant literature has indicated that the preservation of family values and culture within the firm promotes capabilities and learning development^[33].

Much research into the DCV has pointed out that challenges arise in finding systematic research designs of empirical dynamic capabilities studies^[4, 5, 29, 34, 35]. Laaksonen and Peltoniemi argue that a better understanding of operationalization that provides the instruments linking between constructs and their empirical measures would much advance dynamic capabilities research in theoretical building and development^[39]. For the family business-related topic, there has been much little into DCV

research^[36, 37, 38].

In such a theme, some issues that relate to defining the theoretical essence of dynamic capabilities are revealed for the necessity of DCV theory development from the reviews of this study based on highly cited or influential contributions. First, the dynamic capability constructs consist of a distinction between ordinary and dynamic capabilities (e.g., Eisenhardt and Martin^[3]). Secondly, firm performance is considered as indirect (e.g., Zahra et al.^[40]) or moderated (e.g., Liao^[41]) outcomes of dynamic capabilities. Furthermore, the creation of competitive advantages of firms results from rather than how much of a dynamic capability that firms possess, but the importance is on whether firms possess certain types of dynamic capabilities (e.g., Eisenhardt and Martin^[3], Teece et al.^[6]), and focus on change over time (e.g., Winter^[42]).

Another important factor is about distinguishing between ordinary capabilities and dynamic capabilities. Ordinary capabilities determine how a firm currently makes its living now and enable operational effectiveness, whereas dynamic capabilities allow firms to change^[42, 45] and promote sensing and seizing new business opportunities^[4, 29]. Still, in especially empirical investigations, it is essentially difficult to differentiate between ordinary capabilities (that change per se) and dynamic capabilities (that cause the changes in ordinary capabilities). This part of the arguments emerges as the line between these two types of capabilities is ‘unavoidably blurry’^[46:1243], and capabilities per se may have both ordinary and dynamic features and purposes in firms^[40]. Still, those theoretical studies (as mentioned above) are significant to provide an instrumental approach to how dynamic capabilities are investigated.

In the context of family businesses, Miller and Breton-Miller emphasize that the growth of dynamic capabilities relies on the IC and governance of family firms^[26]. Their contribution encourages this study to explore the learning mechanisms of family firms, where knowing the governance and IC of family firms and the interactions with dynamic capabilities is the crucial foundation.

3. The Development of the Theoretical Model

As presented before in this study, most family business literature has had a focus on family businesses’ possession of unique or inimitable assets, capabilities, or even knowledge (or IC) from their governance or operations. However, such possession much relates to the investigations of family businesses’ ordinary capabilities, instead of dynamic capabilities. While there is some seminal literature, the needs remain indispensable to identify how family businesses generate dynamics and even so dynam-

ic capabilities, and hence it would be applied to take the family businesses closer towards attaining competitive advantage^[26].

Teece^[47] argues that dynamic capabilities are not typically acquired and imperfectly timetable and that they are generally built incorporated with a firm’s VRIN resources, signature processes, past managerial decisions, and heritage. These include managerial actions, context-specific learning, or investments^[41]. To reinforce our concept in linking family businesses’ dynamic capabilities, we treat IC as a special set of knowledge within the family and the business in family businesses. It is the essential core in fostering dynamic capabilities of firms as for permitting skill acquisition, learning, and the accumulation of intangible or invisible assets in the organization^[48]. Accordingly, the following proposition is generated:

Proposition 1: Investment in intellectual capital is positively related to family firm dynamic capabilities.

For the exploration of sources of dynamic capabilities in family businesses, this paper applies four learning mechanisms of significant importance for family firms identified by Barros^[50]. As learning mechanisms they are, we view them as dynamic capabilities in the proposed framework, including knowledge accumulation, knowledge integration, knowledge codification, and preservation of socioemotional wealth (SEW).

Knowledge accumulation that knowledge could be accumulated along with time and even over generations at home and through an early career in firms or education and experience, enables family members to learn, detect, filter, share, and gauge opportunities^[40, 51].

Knowledge integration that is considered as the cornerstone of dynamic capabilities, allows family businesses to take advantage of the opportunities pinpointed in the environment and make them available to the firm^[3, 50].

Knowledge codification is the use of the knowledge integrated into a firm to help to generate new proposals in order to change currently available strategies as well as identify the strengths and weaknesses in proposed variations to the current set of strategies^[45].

Preservation of SEW is conditioned by the other three learning mechanisms. Family values and culture are adapted to the business condition and evolve. SEW has an intrinsic value for the family. As a result, preserving it has become essential, since it is intimately linked, from a psychological point of view to the family owners, who project their identity onto organizations^[52].

All four mechanisms interact with familiness - “the unique bundle of resources a particular firm has because of the systems interaction between the family, its members and the business”^[52:11]. These four mechanisms confer

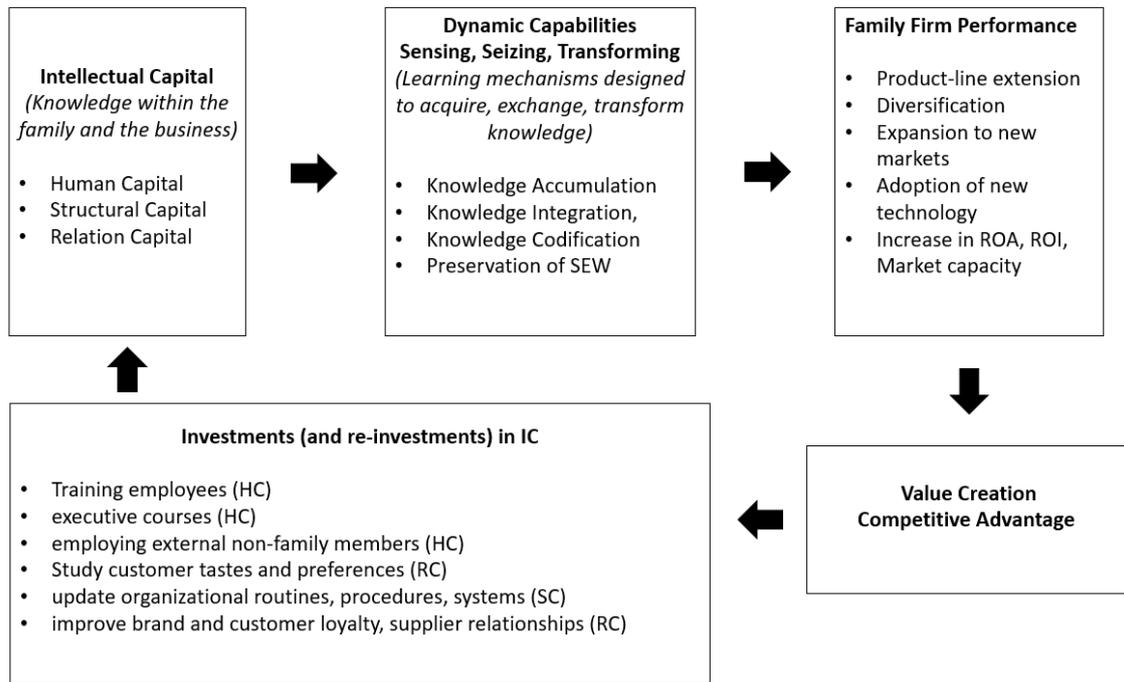


Figure 1. The Proposed Model

family firms with learning capabilities, and knowledge creation and applications occur in them over generations, hence providing them with potential advantages over non-family firms^[53].

The proposed model is developed based on IC (shown in Figure 1), which is viewed as not only the relevant and actionable information linking to human capital, relational capital, and structural capital, but also organizational capabilities in an ordinary form within a family business. These capabilities represent how a family business currently works and has been working over generations. As the environment is dynamic, family businesses need to continuously scan for new opportunities and further adapt through sensing, seizing, and transforming capabilities, closely aligned with their strategies^[27]. Family businesses' survival consequently relies heavily on its history and continuous learning in order to adapt to the dynamic environment.

Through sensing the environment, family businesses can identify opportunities of development in any of the IC components from assessing any technological advancements for efficient production processes (structural capital), improving industry networks, relationships with customers and suppliers including consideration of customer's needs (relational capital) to providing motivation incentives and training of employee's (human capital). We detail, as follows, how these learning mechanisms work with other factors in the proposed model, and thus shaping

our dynamic view for family businesses.

Knowledge accumulation therefore allows family businesses to perform these processes aimed at developing internal activities, such as R&D, technology monitoring, innovation and implementation. Knowledge accumulation comes from training, education, experience, passed down from generation to generation, attending international conferences, conversing with customers and suppliers to take into account their changing needs. Still, merely acquiring knowledge cannot sustain the evolution of capabilities when the environment changes so after knowledge accumulation. A family firm needs to seize the sensed opportunities by deciding whether some information is of potential value to concrete fit the organization in terms of strengths and weaknesses, and thus making decisions accordingly.

Knowledge integration allows specialized family member knowledge to be integrated into the family firm so it can adapt its capabilities to the shifting environment^[45, 51]. Family firms are characterized by socially intense relationships between family members, which also occur informally outside of work and increase interdependence and interactions, thus strengthening family bonds and knowledge integration. Family literature shows that the dependence of family members on each other strengthens their mutual bonds and repeated interactions enhance social relationships^[21]. Through such tight bounds either within or outside a family business (with a broad view of

familiness), knowledge integration happens efficiently.

Past research also indicates that family firms need to develop entrepreneurship to redevelop or reconfigure resources that may cause decreased value and become in changing markets^[54]. Through transformation, organizations operationalize, implement, and perform renewal activities through the seized opportunities. This process involves reconfiguration which focuses on the consequences of the transformation rather than on the transformation itself^[55].

Knowledge codification, such as explicit knowledge from family institutions, protocols and guidance, and the use of the family name as a brand^[40, 51], confer family businesses with the ability to transform and survive over time. Family firms with issues such as family involvement, sibling rivalry, and on-going conflicts render it hard to integrate and codify knowledge in the business. As a result, family relationships provide the course and the trust base for information exchange and encourage change when this change may decrease mutual understanding among individuals^[56]. Therefore, knowledge codification would be an essential work for knowledge integration that transforms the tacit mindsets and knowledge of, and interactions between, family members into systems. Simultaneously, it integrates and externalizes managerial know-how of a family business.

Another essential part of family businesses' IC is the *preservation of SEW* - reflecting the value and familiness embedded in the culture and identity of the family. Recent empirical research explains how SEW affects family firm strategy, including diversification decisions, environmental performance and alliance formation^[31, 32, 33]. A combination of these mechanisms can promote the evolution of capabilities and the family firm's ability to respond appropriately to environmental dynamism, generate change strategies and transform themselves to high firm performance through outcomes, such as mergers, new product development, new markets, increase in sales, etc. as per the model. Performance creation results in increased firm value and the achievement of the sought after the generation of competitive advantages. Accordingly, these propositions are generated:

Proposition 2: Family firm dynamic capabilities are positively related to family firm performance.

Proposition 3: Family firm performance is positively related to family firm value and competitive advantages.

Finally, since the environment is constantly changing, new strategies, processes, technologies, relationships, individual knowledge, and skills become obsolete over time and need renewal. Therefore, family businesses need to continually reinvest in the components of IC to stay

ahead of the competition, so the framework is a continuous cycle.

The section below presents case results that highlight how sensing, seizing, and transforming in terms of knowledge acquisition, integration, codification, and preservation of SEW affects the performance of various family businesses in industries.

4. Case Implications

In this section, we present two cases to provide empirical meaning for the proposed model. Semi-structured and face-to-face interviews were conducted in the first case study to collect data from 17 family businesses operating in Western Australia^[57]. The purpose of the case study was to provide an understanding of how family businesses adapt to the changing business environment. There were five cases where participants recommended that the needs for adaptive measures to the market were given rise by the environmental dynamics that came up with the higher consumer demand.

From the case study of Alonso^[57], we extract and extrapolate four cases for the explanations for the model proposed by this study (shown in Table 1). We highlight the most relevant information, including "how does the family business sense the changes in the business environment?", "In what ways does the family business adapt?", and "the specific learning mechanism(s) the family business exploits".

First, Jennie's example shows that various customers' demands in the business environment could be turned into potential opportunities. Sensing and seizing are displayed as Jennie scanned the environment and realized an increase in the number of avocado producers resulting in excess of supply. The company seized the opportunity by transforming itself into a packing facility to take advantage of the region's weaknesses of lacking appropriate logistics and infrastructure.

Secondly, Marie's example highlights the importance of industry connections that have been continually built and enhanced over time. It underlined the relationship between industrial networks and process innovation. Because Marie had acquired knowledge over the long history in the industry, it could acquire and accumulate market knowledge and skills. Furthermore, the combination of these conferred her with critical insights for the firm to respond to consumer trends, thereby sensing and seizing opportunities. Sensing is also displayed by the ability of the firm to anticipate the environmental trends and potential challenges ahead, which prompted it to produce throughout the year as opposed to seasonally while still preserving SEW in the family brand.

Sam, in fresh fruit production, the third case, demonstrates the importance of process innovation, the introduction of new and considerably improved production, administrative, and supply chain processes. Sam applied a combination of knowledge accumulated through experience in the industry and his intuition (a part of tacit knowledge) in sensing the environment for new opportunities and anticipating upcoming challenges. The results further transformed his business from selling domestically to entering export markets and differentiating itself via environmentally friendly sources of energy.

Finally, Rob’s case shows how Rob had knowledge and expertise in installation of glass materials. However, changes in governmental policies and legislation and consumer trends called for new knowledge accumulation, integration of the knowledge in the firm for product enhancements, compliance and new product designs.

Moreover, the firm reinvested in learning and keeping up to date with compliance regulations. The case presents an example involving sensing, seizing and transforming.

The second case study [58] is significant for the implication of the proposed model as it looks into dynamic capabilities and how family businesses’ value is generated across generations (shown in Table 3). As the present study, it considers knowledge as the critical factor, and in turn, how it creates entrepreneurial performance and value creation for family businesses. The investigation focus of the second case study is on the process of product innovation and strategic adaptation to the market, which in turn constitutes family businesses’ entrepreneurial performance, including product-line extension, product diversification, expansion to new markets and adoption of new technology.

This case study takes us through four family firms with

Table 1. Case implication 1

Participant	How does firm adapt to today’s business environment?	In what ways does it adapt?	The specific learning mechanism(s) the family business exploits
Jennie, <i>avocado producer</i>	<ul style="list-style-type: none"> ●Anticipating a future growth ●Exploring untapped commercial opportunity (development of an application for growers to monitor their production needs) ●Identifying new trends and consumer wants that led to new product development (used fruits for a baby food line and food for aged care Facilities) 	<ul style="list-style-type: none"> ●Transformation (from an avocado producer to a packing and exporting firm) ●Promoting extensive and deep exchange of knowledge (open culture to changes, valuing the contributions of all firm’s members) 	<ul style="list-style-type: none"> ●Accumulated knowledge ●Previous experience (became a consulting firm to the local avocado producers) ●Innovation and differentiation initiatives ●Investment in equipment and technologies.
Marie, <i>fresh fruit produce</i>	<ul style="list-style-type: none"> ●Relied industry networks with market agents and their recommendations 	<ul style="list-style-type: none"> ●Produce throughout the year as opposed to seasonally. ●Changed packaging and started barcoding products 	<ul style="list-style-type: none"> ●Family brand and reputation (long family history and tradition in the fresh produce industry) ●Process innovation ●Human component (direct communication and highly personalized service with its clients)
Sam, <i>fresh fruit produce</i>	<ul style="list-style-type: none"> ●Sensing the environment ●Anticipating potential challenges ahead ●Recognizing potential of other markets (Middle East) 	<ul style="list-style-type: none"> ●Increase the family business’s involvement in international exports. ●Less dependent on domestic supermarkets ●Uniqueness (sell everything at a fixed price to all customers: domestic and international) 	<ul style="list-style-type: none"> ●Intuition and tacit knowledge ●Experience in rapidly changing fresh produce consumer environment. ●technology and equipment related innovations (cold chain) ●Differentiation (Use more environmentally friendly energy sources, e.g. “70–80% of energy is wind generated)
Rob, <i>installation of glass materials</i>	<ul style="list-style-type: none"> ●learning new compliance rules ●Application of knowledge as well as expertise to take on the challenge of compliance. 	<ul style="list-style-type: none"> ●Being up-to-date with compliance requirements ●investing in gathering key strategic knowledge ●(travel to some of the industry events in Germany and China) ●Differentiation ●(being first mover) 	<ul style="list-style-type: none"> ●Accumulated valuable knowledge and ●Expertise in the area of installation of glass materials ●Invest in training in order to see and experience first-hand new products or designs

Source: Adapted from Alonso, A. D., Kok, S., & O’Shea, M. (2018). Family businesses and adaptation: A dynamic capabilities approach. *Journal of family and economic issues*, 39(4), 683-698.

a longitudinal and multiple-case study. Two of the firms are from Apulia (Alpha) and Tuscany (Beta) regions in Italy, and the other two (Gamma and Delta) are private Swiss family firms from Canton Province, China. All firms operate in the beverage sector. The summary of the cases is extracted and presented in Table 3.

The cases show transgenerational value creation in family businesses with knowledge passed on from generations, new knowledge accumulation, family involvement, knowledge codification, and preservation of SEW. For example, the cases of Alfa, Beta, and Gamma attempt to

acquire new knowledge or implement the existing knowledge involved training, taking executive courses, employing external non-family members. More so, their family members were very committed and proactive in creating new values. However, in the case of Delta, change is not happening because there were family conflicts between Carlo and his cousins. They were afraid of taking risks, and thus there were no investments in new knowledge accumulation. In turn, there exists rigidity and slow reaction to environmental changes.

Table 2. Case implication 2

	Alpha (spirits industry)	Beta (wine industry)	Gamma (wine industry)	Delta (wine industry)
Entrepreneurial performance and transgenerational value	<ul style="list-style-type: none"> ● Increase in product-line extension (from one product in G1 to 25 products in G3) ● Diversification (adding unrelated products to the core business) ● Expansion to new markets (US, Germany, Ireland, Australia and Japan). ● Adoption of new technology in G2 and G3. (Computer programmed and controlled working cycles and a fully equipped R&D quality control laboratory) ● Increase in goodwill (acquisition) and Net Income 	<ul style="list-style-type: none"> ● Adoption of new and different technologies (state of the art control system) ● Product-line extension (adapt to every market) ● Expansion to new markets (68 countries) ● Increase in Net income (by 400% between 1995 and 2005) 	<ul style="list-style-type: none"> ● Expansion to new markets ● Transformation of internally and externally acquired resources (wine produced according to customers' demands) ● Diversification (resources updated every 6 months for obsolete check) ● Adoption of new technologies, G3 ● Increase in Net income, goodwill and sales increased (balance sheet increased by 17 times from G1 to G3 and reinvested in knowledge) 	<ul style="list-style-type: none"> ● Both value creation and entrepreneurial performance remained low in all generations. ● Launching of new products that are unrelated to the core family business. ● Decrease in new markets expansion from G1 to G3 ● No investments outside the firm
knowledge	<ul style="list-style-type: none"> ● Increase in knowledge accumulation (knowledge gathered and handed down through generations and acquired from outside) ● Investments in outside knowledge accumulation (universities, suppliers, working with external people, employing non-family member sales director and managing director, training, external experts) 	<ul style="list-style-type: none"> ● Knowledge accumulation (from within and externally) ● High level of family members' involvement ● Experience obtained in US 	<ul style="list-style-type: none"> ● Improvement in knowledge 	<ul style="list-style-type: none"> ● Stagnation in knowledge. ● Low-level of family members' involvement (disintegrated family firm) ● Low Technological advancement

Table 3. Case implication 2 (continued)

dynamic capabilities	<ul style="list-style-type: none"> ● Recombination of internally and externally acquired resources ● Introduction of new products unrelated to core business through customer demands ● Business restructuring ● Employment of skilled non-family members ● New product ● development activities 	<ul style="list-style-type: none"> ● Employment of young and brilliant external professionals ● Owner attended university to accumulate more knowledge ● Social Network around the world created through studying and living abroad. ● Good relationship with family members 	<ul style="list-style-type: none"> ● Apply family and outside knowledge (especially in marketing and production) ● Recombination of resources ● Continuously updating knowledge (everyday work and learning) 	<ul style="list-style-type: none"> ● Hardly developed (resources are not well-acquired, exchanged and transformed for growth) ● Increase in knowledge from G1-G2 (Carlo, G2, started acquiring new knowledge in business and wine making) ● Share and transfer of knowledge (to cousins) ● Low level of trust (between Carlo and his cousins)
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Source: Adapted from Chirico, F., & Nordqvist, M. (2010). Dynamic capabilities and trans-generational value creation in family firms: The role of organizational culture. *International Small Business Journal*, 28(5), 487-504.

5. Conclusions

This study has explored how a family firm can remain ahead of competition while adding values in a competitive and ever-changing environment. By using four learning mechanisms, including knowledge accumulation, integration, codification, and preservation of SEW, this study contributes to the understanding of how family businesses fosters their dynamic capabilities based on intellectual capitals, such as human capital, structural capital, and relational capital. Based on the learning cycle of family businesses, this study proposed a framework that links together IC and dynamic capabilities and family businesses' performance, while we also illustrated how family businesses generate competitive advantage and the critical role of continuous reinvestment as a means of adapting to environmental changes.

With the KBV and DCV in heart, this study maintains and stresses that knowledge-based resources that are embedded in the learning process act as a source to facilitate and boost the development of family businesses' dynamic capabilities. IC, such as skills, technological assets to make competitive strategies, network relations within and outside the company, creates value and persists competitiveness. In our study context, we propose the 'theoretical interaction and integration' between the KBV and DCV referred to as how knowledge boosts a family business' development of dynamic capabilities. As it is stressed in the DCV for the importance of the learning mechanism in enhancing the dynamic capabilities of a firm^[3, 4, 29, 40, 43, 45], IC remains poorly managed as most family firms make inefficient investments of IC and learning, hence often failing to manage and transfer valuable practices and capabilities over time. Our findings from the case applications revealed family businesses benefit from their fostering of dynamic-knowledge-based capabilities, such as the accumulation of IC (and knowledge) through expertise, skills and employment of non-family members.

References

- [1] Nicholson, N. (2008). Evolutionary psychology, organizational culture, and the family firm. *Academy of Management Perspectives*, 22(2), 73-84.
- [2] Poza, E. J., & Daugherty, M. S. (2014). *Family Business*. Mason: South-Western Cengage Learning.
- [3] Eisenhardt, K. M., and Martin, J. A., (2000). Dynamic capabilities: What are they? *Strategic Management Journal*. 21 (10-11), 1105-1121.
- [4] Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28(13), 1319-1350.
- [5] Helfat, C.E. , Finkelstein, S. , Mitchell, W. , Peteraf, M.A., Singh, H. , Teece, D.J. and Winter, S.G. (2007) *Dynamic Capabilities: Understanding Strategic Change in Organizations*. Malden, MA: Blackwell.
- [6] Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509-533.
- [7] Easterby - Smith, M., Lyles, M. A., & Peteraf, M. A. (2009). Dynamic capabilities: Current debates and future directions. *British Journal of Management*, 20, S1-S8.
- [8] König, A., Kammerlander, N., & Enders, A. (2013). The family innovator's dilemma: How family influence affects the adoption of discontinuous technologies by incumbent firms. *Academy of Management Review*, 38(3), 418-441.
- [9] Chang, H.-J., Lin, S.-J., & Hou, J.-J. (2014). An Investigation of Family Business from the Perspective of Dynamic Capabilities. *Journal of Chinese Management Review*, 17(1).
- [10] Barros, I., Hernangómez, J., & Martin-Cruz, N. (2016). A theoretical model of strategic management of family firms. A dynamic capabilities approach. *Journal of Family Business Strategy*, 7(3), 149-159.
- [11] Sirmon, D. G., & Hitt, M. A. (2003). Managing resources: Linking unique resources, management, and wealth creation in family firms. *Entrepreneurship theory and practice*, 27(4), 339-358.
- [12] Alagöz, A., Ortakarpuz, M., & Ceran, M. B. Dynamic Capabilities of Enterprises in Accounting Perspective and Evaluation of the Scope of Ias 38 Intangible Assets Standard.
- [13] Kuo, M.-H., & Yang, C. (2012). Does intellectual capital matter? Assessing the profitability and marketability of IC design companies. *Quality and Quantity*, 46(6), 1865-1881.
DOI: <http://dx.doi.org/10.1007/s11135-011-9562-6>.
- [14] Grant, R., (1996). Prospering in dynamically competitive environments: organisation capability as knowledge integration. *Organizational Science*, 7 (4), 375-387.
- [15] Edvinsson, L., & Malone, M. (1997). *Intellectual capital: Realising your company's true value by finding its hidden brainpower*. New York, NY: Harper Collins.
- [16] Khan, H. U. Z., & Ali, M. (2010). An empirical investigation and users' perceptions on intellectual capital reporting in banks: Evidence from Bangladesh. *Journal of Human Resource Costing & Accounting*, 14(1), 48-69.
DOI: 10.1108/14013381011039799.

- [17] Meritum Project (2002), Guidelines for Managing and Reporting on Intangibles, Fundación Airtel Móvil, Madrid.
- [18] Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, 23(2), 242-266.
- [19] Bontis, N. (1998). Intellectual capital: an exploratory study that develops measures and models. *Management Decision*, 36(2), 63-76.
DOI: 10.1108/00251749810204142.
- [20] Hosomi, S. (2014). Study on the relation between intellectual capital and corporate performance for the management of organisational capital.
- [21] Arregle, J. L., Hitt, M. A., Sirmon, D. G., & Very, P. (2007). The development of organizational social capital: Attributes of family firms. *Journal of management studies*, 44(1), 73-95.
- [22] Carr, J. C., Cole, M. S., Ring, J. K., & Blettner, D. P. (2011). A measure of variations in internal social capital among family firms. *Entrepreneurship theory and practice*, 35(6), 1207-1227.
- [23] Cabrera-Suárez, M. K., de la Cruz Déniz-Déniz, M., & Martín-Santana, J. D. (2011). Familiness and market orientation: A stakeholder approach. *Journal of Family Business Strategy*, 2(1), 34-42.
- [24] Hoffman, J., Hoelscher, M., & Sorenson, R. (2006). Achieving sustained competitive advantage: A family capital theory. *Family business review*, 19(2), 135-145.
- [25] Kellermanns, F. W., Eddleston, K. A., Barnett, T., & Pearson, A. (2008). An exploratory study of family member characteristics and involvement: Effects on entrepreneurial behavior in the family firm. *Family Business Review*, 21(1), 1-14.
- [26] Miller, D., & Le Breton-Miller, I. (2006). Family governance and firm performance: Agency, stewardship, and capabilities. *Family business review*, 19(1), 73-87.
- [27] Donaldson, L., & Davis, J. H. (1991). Stewardship theory or agency theory: CEO governance and shareholder returns. *Australian Journal of management*, 16(1), 49-64.
- [28] Davis, J. H., Allen, M. R., & Hayes, H. D. (2010). Is blood thicker than water? A study of stewardship perceptions in family business. *Entrepreneurship theory and practice*, 34(6), 1093-1116.
- [29] Teece, D. J. (2012). Dynamic capabilities: Routines versus entrepreneurial action. *Journal of Management Studies*, 49(8), 1395-1401.
- [30] Kump, B., Engelmann, A., Kessler, A., & Schweiger, C. (2019). Toward a dynamic capabilities scale: measuring organizational sensing, seizing, and transforming capacities. *Industrial and Corporate Change*, 28(5), 1149-1172.
- [31] Gomez - Mejia, L. R., Makri, M., & Kintana, M. L. (2010). Diversification decisions in family - controlled firms. *Journal of management studies*, 47(2), 223-252.
- [32] Gomez Mejia, L. R., Haynes, K. T., Núñez-Nickel, M., Jacobson, K. J., & Moyano-Fuentes, J. (2007). Socioemotional wealth and business risks in family-controlled firms: Evidence from Spanish olive oil mills. *Administrative science quarterly*, 52(1), 106-137.
- [33] Berrone, P., Cruz, C., Gomez-Mejia, L. R., & Larraza-Kintana, M. (2010). Socioemotional wealth and corporate responses to institutional pressures: Do family-controlled firms pollute less?. *Administrative science quarterly*, 55(1), 82-113.
- [34] Arend, R. J., & Bromiley, P. (2009). Assessing the dynamic capabilities view: spare change, everyone?. *Strategic Organization*, 7(1), 75-90.
DOI: 10.1177/1476127008100132.
- [35] Pavlou, P. A., & El Sawy, O. A. (2011). Understanding the elusive black box of dynamic capabilities. *Decision sciences*, 42(1), 239-273.
- [36] Cucculelli, M., Mannarino, L., Pupo, V., & Ricotta, F. (2014). Owner - management, firm age, and productivity in Italian family firms. *Journal of Small Business Management*, 52(2), 325-343.
- [37] Barros, I., Hernangómez, J., & Martin-Cruz, N. (2016). A theoretical model of strategic management of family firms. A dynamic capabilities approach. *Journal of Family Business Strategy*, 7(3), 149-159.
- [38] Jones, O., Ghobadian, A., O'Regan, N., & Antcliff, V. (2013). Dynamic capabilities in a sixth-generation family firm: Entrepreneurship and the Bibby Line. *Business History*, 55(6), 910-941.
- [39] Laaksonen, O., & Peltoniemi, M. (2018). The Essence of Dynamic Capabilities and their Measurement. *International Journal of Management Reviews*, 20(2), 184-205.
DOI: 10.1111/ijmr.12122.
- [40] Zahra, S. A., Sapienza, H. J., & Davidsson, P. (2006). Entrepreneurship and dynamic capabilities: A review, model and research agenda. *Journal of Management Studies*, 43(4), 917-955.
- [41] Liao, T.S. (2019). The Role of R&D Leverage as a Dynamic Capability in Performance Creation: Evidence from SMEs in Taiwan. *Journal of Business Administration Research*, 2(2), 20-39.
- [42] Winter, S. G. (2003). Understanding dynamic capabilities. *Strategic management journal*, 24(10), 991-995.

- [43] Szulanski, G., Ringov, D., & Jensen, R. J. (2016). Overcoming stickiness: How the timing of knowledge transfer methods affects transfer difficulty. *Organization Science*, 27(2), 304-322.
- [44] Al-Khalil, S. S., Dahiyat, S. E., & Al-dalahmeh, M. A. (2014). Intellectual capital development and its effect on technical innovation in banks operating in Jordan. *Journal of Management Research*, 6(1), 211-238.
- [45] Zollo, M., & Winter, S. G. (2002). Deliberate learning and the evolution of dynamic capabilities. *Organization science*, 13(3), 339-351.
- [46] Helfat, C. E., & Winter, S. G. (2011). Untangling dynamic and operational capabilities: Strategy for the (N) ever - changing world. *Strategic management journal*, 32(11), 1243-1250.
- [47] Teece, D. J. (2014). The foundations of enterprise performance: Dynamic and ordinary capabilities in an (economic) theory of firms. *The Academy of Management Perspectives*, 28(4), 328-352. <https://doi.org/10.5465/amp.2013.0116>.
- [48] Felin T., and Foss N.J. (2005). Strategic organization: a field in search of micro-foundations. *Strategic Organization*, 3(4), 441-455.
- [49] Mondal, A., & Ghosh, S. K. (2012). Intellectual capital and financial performance of Indian banks. *Journal of Intellectual Capital*. 13(4), 515-530.
- [50] Barros, I., Hernangómez, J., & Martin Cruz, N. (2016). A theoretical model of strategic management of family firms. A dynamic capabilities approach. *Journal of Family Business Strategy*, 7. DOI:10.1016/j.jfbs.2016.06.002.
- [51] Chirico, F. (2008). Knowledge accumulation in family firms. Evidence from four case studies. *International Small Business Journal*, 26(4), 433-462.
- [52] Habbershon, T.G., and Williams, M.L., (1999): A resource-based framework for assessing the strategic advantages of family firms. *Family Business Review*, (7)1 ,1-25.
- [53] Sharma, P. (2008). Commentary: Familiness: Capital stocks and flows between family and business. *Entrepreneurship Theory and Practice*, 32(6), 971-977.
- [54] Habbershon, T. G., & Pistrui, J. (2002). Enterprising families domain: Family - influenced ownership groups in pursuit of transgenerational wealth. *Family Business Review*, 15(3), 223-237.
- [55] Hawass, H. H. (2010). Exploring the determinants of the reconfiguration capability: a dynamic capability perspective. *European Journal of Innovation Management*.
- [56] Beckhard, R., & Dyer Jr, W. G. (1983). Managing continuity in the family-owned business. *Organizational dynamics*, 12(1), 5-12.
- [57] Alonso, A., Kok, S. K., & O'Shea, M. (2018). Family Businesses and Adaptation: A Dynamic Capabilities Approach. *Journal of Family and Economic Issues*, 39. DOI:10.1007/s10834-018-9586-3.
- [58] Chirico F. and Nordqvist M. (2010). Dynamic capabilities and transgenerational value creation in family firms. The role of organizational culture. *International Small Business Journal*, vol. 28, no. 5, pp. 487-504.