

Family-Driven Innovation: Resolving the Ability and Willingness Paradox to Unlock the Innovation Potential of Family Firms

This article presents an integrated and contingency perspective on family firm innovation called Family-Driven Innovation (FDI). Our framework highlights the need for consistency between the family firm's strategic innovation decisions and its idiosyncrasies to achieve and sustain competitive advantage through innovation.

Family firms are the most ubiquitous form of business organization globally¹, and the enduring influence of families on business and society is an essential part of any world economy². For instance, in the USA, one-third of S&P 500 firms are either controlled or owned by the founding family³ and family firms account for 80-90% of private sector firms, 63% of national GDP and employ 57% of the total workforce⁴. In Europe, the importance of family firms is even greater⁵. Family firms also significantly contribute to the growth of economies in South and East Asia, Latin America, and Middle East⁶ and recent empirical research has shown how the proportion of firms under family control significantly affects economic growth⁷. Thus, scholars and practitioners are paying increasing attention to understanding the distinctive behavior of this form of business organization.

After decades of research, conflicting results have emerged on innovation in family firms. Innovation is a vital source of competitive advantage⁸ and an important determinant of superior performance⁹. However, family firm innovation often has a dual nature. On one hand, family firms are conventionally seen as conservative, path-dependent and ultimately less innovative than other types of organizations¹⁰. On the other hand, statistics show that family owners control more than 50% of Europe's most innovative firms¹¹. Consider, for example, Mittelstand

family firms in Germany, which are internationally renowned for their capacity to successfully focus on innovation and stay ahead of potential competitors in their technological niche market¹², or companies such as Beretta, Miquel y Costas Group, Pollet, and Van Eeghen, bicentenary family-owned firms well-known for embracing impactful innovations in their respective industries.

Recent scholarly work suggests that **innovation in the context of family firms is characterized by a paradox**, which implies that family firms innovate less despite their ability to innovate more than their non-family counterparts¹³. This in turn has led to two key questions that scholars and practitioners have recently attempted to address: How can family owners and managers resolve this paradox in family firm innovation and thereby unlock their innovation potential? More generally, how can a business organization characterized by family involvement resolve this paradox and build competitive advantage through innovation?

This article introduces the *California Management Review* special section on innovation in family firms and contributes to the current debate on family firm innovation by suggesting an integrated and contingency perspective¹⁴ while proposing a model of competitive advantage through innovation. More specifically, we introduce the concept of Family-Driven Innovation (FDI) indicating the internally consistent set of strategic decisions that allow a family firm to resolve the aforementioned innovation paradox by ensuring a close fit between these decisions and the idiosyncratic characteristics of family firms. Three contingency factors can be used to describe the characteristics of family firms and capture their heterogeneity. We refer to these as the *where, how and what* of family firms that respectively capture the direction the family firm wants to take (expressed by the family owners' goals and intentions, i.e., their willingness to behave), the family firm's discretion to move

forward in this direction (which is a function of the structures, governance mechanisms and decision-making processes that constrain the power of family owners, i.e., their ability as discretion), and the resources and capabilities that are needed or should be used to lead the firm in this direction (which we call ability as resources). Similarly, we argue that strategic decisions in innovation can be mapped along the same *where*, *how* and *what* contingency factors, which means deciding where the firm will find the knowledge resources it needs to innovate (e.g., within its existing knowledge base, in new knowledge domains or searching over time), how the innovation process is managed (e.g., whether the firm follows an open or closed innovation approach), and what the firm wants to innovate (e.g., whether it will prioritize products/services, processes or business model innovation, and whether more emphasis will be given to radical or incremental innovation).

In this article, we adopt a broad definition of innovation¹⁵ and identify the *where*, *how* and *what* contingencies that capture the heterogeneity of family firms and those capturing the heterogeneity of innovation decisions. We argue that a fit between these two internally consistent sets of contingencies is required to realize FDI and to enable organizations characterized by family involvement to build competitive advantage through innovation.

Our model makes several contributions to literature. While innovation research has investigated an abundance of firm-level drivers of innovation¹⁶, the role of family involvement is thus far only narrowly understood¹⁷. Incorporating the role of family involvement and its effects in innovation studies is important for general management scholars if aiming to advance knowledge on the most ubiquitous form of business organization worldwide. We further advance innovation literature by highlighting the importance of family involvement as a firm-level determinant of innovation, but also

by showing how family involvement can lead to competitive advantage through innovation. Specifically, we argue that a key mechanism of building competitive advantage for an organization characterized by family involvement is through achieving a close fit between the family firm heterogeneity dimensions and their innovation strategy heterogeneity dimensions.

Moreover, in introducing the concept of FDI, we seek to identify strong implications for the flourishing research stream on innovation in family firms. Readers of this special section will find that the authors of the articles consider constructs such as readiness for innovation, socio-emotional wealth, core assets and liabilities, external turbulence, and business model evolution as drivers that explain conflicting findings on innovation in family firms. Indeed, scholars have studied the effect of family involvement on a number of innovation aspects including R&D investments¹⁸, discontinuous technology adoption¹⁹ and external technology acquisition²⁰ in light of specific family firm characteristics such as goals, governance or resources, depending on the theoretical perspective adopted. We suggest here that our concept of FDI provides a parsimonious and comprehensive framework to further the theory and practice of innovation in family firms. In other words, we argue that scholars and practitioners require an integrated reconceptualization of family involvement and innovation rather than only illuminating selected aspects of innovation in family firms and drawing reckless conclusions based on a narrow set of information.

In addition, our article contributes to the debate on family firm heterogeneity²¹ and is ideally useful for family firm owners, managers and advisors to gain a more nuanced understanding of how to unlock the innovation potential of family firms.

The article continues as follows. The next section provides a brief overview of the paradoxical effects that family involvement may have on some aspects of

innovation. We then present the concept of Family-Driven Innovation (FDI) by discussing its underlying components and explaining how the four articles published in this special section contribute to advancing this model and to explaining the creation of competitive advantage through innovation in family firms. We subsequently develop a future research agenda and outline some conclusions.

2. Paradoxical Effects of Family Involvement on Innovation

The vast theoretical and empirical research on innovation has thus far focused on firms where ownership and management are separate, without explicitly taking into account what happens when they are combined²². Unification of ownership and control is typical of family firms and the resulting family involvement endows family firms with distinctive incentives, authority structures, accountability norms, resources and capabilities²³. These idiosyncratic characteristics have an impact on how innovation takes place in this particular form of business organization. A growing collection of empirical research provides evidence that innovation in family firms differs from that of their non-family counterparts²⁴.

Extant research on this topic is nevertheless limited and focuses on a few aspects that can be categorized into three main streams: the effect of family involvement on innovation inputs, on innovation activities and on innovation outputs. We summarize the key findings here below:

1. Innovation inputs: existing research is largely consistent in indicating that family firms generally invest less in R&D compared to their non-family counterparts²⁵.
2. Innovation activities: the preliminary results suggest that innovation activities are managed differently in family vs. non-family firms, but this area requires much more theoretical and empirical research for its complete development²⁶.

3. Innovation outputs: findings are controversial here, with some studies showing that family firms are more innovative than non-family firms while others instead suggest that the reverse is true²⁷.

Moreover, an interesting theme in this growing field of study refers to some paradoxical effects in family firm innovation, which manifest in family firms innovating less despite their ability to do more²⁸. There are several examples of innovation aspects where this innovation paradox is clearly in place in family firms. Here we exemplify this paradox by focusing on two facets of the innovation process: the development and the adoption of innovation.

Paradoxical effects in the development of innovation. Research and practice suggest that developing innovation increasingly requires leveraging external sources of knowledge to manage the increasing costs of the creation of new knowledge and the reduced life cycle of such knowledge²⁹. This strategic need is well documented in the extensive open innovation literature³⁰. Family involvement in a firm affects its willingness to engage in open innovation. Evidence indicates that in pursuing non-economic utilities, family firms develop strong concerns about the potential loss of control³¹. Such concerns may complicate collaborative relationships with external partners when open innovation entails restricting the firm's control over the product's technological trajectory³². The propensity to acquire knowledge outside the firm's boundaries is therefore lower in family than non-family firms. At the same time, family firms have a greater ability to identify opportunities and acquire knowledge from outside their boundaries due to their non-economic goals, long-term orientation and discretion to engage with external stakeholders³³ and this creates a paradoxical effect³⁴.

Paradoxical effects in the adoption of innovation. Innovation adoption is the process through which a firm (i) makes the decision to adopt a new product/service, process or business model, and then (ii) starts using and integrating it into its processes and business activities³⁵. Sociological models of innovation diffusion suggest that the decision to adopt an innovation is characterized by high levels of uncertainty³⁶. Even when specifications and customer reports are known, and the cost of purchase and use is precisely known, the firm remains unsure about how the innovation will perform in practice, whether it is suited to the uses it has in mind and whether it can be easily integrated into its existing operations. Under these circumstances, innovation adoption may put the non-economic utilities of family owners at risk as it reduces the firm's control over the way in which business activities are managed and organized. This implies that in the future the firm may be forced to operate under constraining organizational actions that could have been avoided by not adopting the innovation. As a result, family firms are likely to show a lower propensity to adopt innovations compared to their non-family counterparts. However, once the firm has decided to adopt an innovation, the high discretion of family firms due to the personalized control that characterizes them, lowers the barriers to integrating the innovation and its actual use. The uncertainty surrounding adoption is especially high when a firm is confronted with a discontinuous innovation³⁷.

Ultimately, this brief overview of recent findings from prior research points to the fact that creating and capturing the maximum value from innovation in family firms requires unlocking these paradoxical effects. Only by doing so will family firms be able to set the innovation potential free to create and sustain competitive advantage over time. Throughout this special section, starting with our introductory article, we

argue that this can be achieved by carefully aligning the family firm's strategic decisions in innovation with its idiosyncratic characteristics. We call this internally consistent set of strategic decisions in innovation that resolves the family firm innovation paradox as Family-Driven Innovation (FDI). In the next section, we present an integrated FDI model and discuss its key features and components.

3. Introducing the Concept of Family-Driven Innovation

The FDI framework builds on contingency theory³⁸. Based on this theoretical perspective, FDI is defined as an internally consistent set of strategic innovation decisions that allows family firms to resolve their innovation paradox by ensuring a close fit between these decisions and the family firm characteristics. Applying this perspective means that scholars and practitioners should:

1. In a first step, consider the *internal consistency* between the key contingency factors that identify the family firm characteristics and capture their heterogeneity in addition to the internal consistency between the key contingency factors that capture the heterogeneity of innovation decisions.
2. In a second step, take into account the *fit* between the heterogeneity contingencies of innovation decisions and the heterogeneity contingencies of family firms.
3. Finally, recognize that a misfit between innovation decisions and family firm characteristics is unlikely to create a competitive advantage through innovation in family firms. Conversely, innovation decisions that match the family firm characteristics enable FDI and lead to the creation of competitive advantage through innovation.

Our model is shown in Figure 1.

INSERT FIGURE 1 ABOUT HERE

In the remainder of this section, we draw on the family business and innovation literatures to examine and discuss the key components.

Heterogeneity of Family Firms

Our examination of family business literature has led to identifying three contingency factors that can be used to describe the characteristics of family firms and capture their heterogeneity. We refer to these as the *where, how and what* of family firms that respectively capture the direction the family firm wants to take (expressed by the family owners' goals and intentions, i.e., their willingness to behave), the family firm's discretion to move forward in this direction (which is a function of the structures, governance mechanisms and decision-making processes that constrain the power of family owners, i.e., their ability as discretion) and the resources and capabilities that are needed or should be used to lead the firm in this direction (which we call their ability as resources)³⁹.

The Where of Family Firms. *Family willingness* is defined as the “favorable disposition of the involved family to engage in distinctive behavior. It encompasses the goals, intentions, and motivations that drive the family involved to influence the firm's behavior in directions that are different from those pursued by firms without family involvement”⁴⁰. This refers to the family owners' goals and intentions and responds to the question *where do we want to go?* For example, some family firms may be more oriented to pursuing family-oriented goals such as family harmony, social status and identity linkage, whereas others may be more oriented to pursuing nonfamily-oriented goals such as pure profit maximization⁴¹.

The How of Family Firms. *Family ability as discretion* is defined as “the discretion of the [involved] family to direct, allocate, add to or dispose of a firm's

resources. It also includes latitude in selecting the goals of the organization and in choosing among the range of feasible strategic, structural, and tactical decisions”⁴². Organizational authority arises from the family owners’ power and legitimacy, which is a function of the structures, governance mechanisms and decision-making processes that regulate and constrain family owner discretion and responds to the question *how can we get there?* For example, the family’s strategic control of a firm’s assets relative to its ownership may be enhanced through the establishment of pyramids, cross-holdings and dual voting class shares⁴³, and the family may be able to bypass the board when making strategic decisions⁴⁴. On the other hand, powerful nonfamily stakeholders such as board members and shareholders may constrain the family owners’ and managers’ ability to exercise their discretion to act. Moreover, the monitoring and incentive systems adopted in the family firm may constrain the managers’ freedom to pursue activities in the family owners’ interest instead of the business’ interest⁴⁵.

The What of Family Firms. Finally, there is also a resource-based component of ability that we call *family ability as resources*. This refers to the family’s power to act and the resources and capabilities that family owners need to deploy to pursue their goals and lead the firm in the desired direction, responding to the question *what do we use/need to get there?* For example, managerial power is constrained if the resources available to the firm’s dominant coalition are reduced⁴⁶. This component of family ability largely builds on the resource-based view⁴⁷, which emphasizes the role of the family firms’ unique resources and capabilities - in terms of higher or lower stocks of social, human and financial capital⁴⁸ - in building a competitive advantage or disadvantage⁴⁹.

Drawing on innovation literature, in the next section we present the three contingency factors in terms of the *where*, *how* and *what* that can be used to capture the heterogeneity of strategic innovation decisions.

Heterogeneity of Innovation Decisions

Innovation is a very complex and multifaceted concept that has been endowed with many alternative definitions and operationalized in different ways in literature⁵⁰. For the purpose of this study, we conceptualize innovation as the set of activities through which a firm conceives, designs, manufactures and introduces a new product, service, process or business model⁵¹.

Existing research points to the critical importance of defining a clear and appropriately designed innovation strategy to increase the firm's ability to use innovation to create competitive advantage⁵². The decisions that must be taken to define a proper innovation strategy are manifold and intertwined. In this article, we identify three variables along which strategic innovation decisions should be taken, which represent the dimensions of heterogeneity of innovation decisions in our FDI model.

In particular, we argue that the most important decisions to be taken to develop a proper innovation strategy should respond to three key questions: Where do we search for the knowledge and resources we need to innovate? How do we want to manage the innovation process? What do we want to innovate? We call these three dimensions the *where*, *how* and *what* of an innovation strategy.

The Where of an Innovation Strategy. This decision refers to the directions in which a firm searches for the resources and knowledge it needs to feed its innovation process. Studies conceptualizing innovation as a search process suggest

that a first critical strategic decision concerns the depth of the firm's search into its existing knowledge base⁵³, pointing to the importance of finding the right balance between the exploration of novelty and the exploitation of existing knowledge⁵⁴. A second dimension along which the search process in innovation may be directed is the search breadth, which captures the extent to which a firm searches across multiple technology domains⁵⁵. Again, emphasizing search breadth may enable radical innovation⁵⁶ - albeit incurring higher costs than searching extensively within a narrower set of knowledge domains⁵⁷ - pointing to the importance of the correct balance of this strategic action. More recently, research has emphasized the concept of temporal search, suggesting that a further strategic decision concerns the extent to which a firm uses knowledge elements from the past or focuses on newly created knowledge elements and technologies⁵⁸. Knowledge pertaining to the past, which derives from the tradition of the firm or the territory in which it operates, may be a valuable innovation resource as its use fosters increased reliability, decreased risk of retaliation and innovation uniqueness⁵⁹. However, excessive reliance on past knowledge creates the risks of path-dependence, inflexibility and conservatism, and may reduce a firm's capability to respond quickly to changing market needs⁶⁰.

The How of an Innovation Strategy. This dimension concerns the strategic approach that a firm decides to apply in developing and exploiting its innovations. There is of course a vast range of strategic aspects that could be considered here⁶¹, but the single most important element refers to the firm's degree of innovation openness. Research on open innovation suggests that this has become a strategic priority for firms competing in high-pace, high-velocity industries to leverage both inbound and outbound flows of knowledge and technologies to increase revenues and reduce the costs of their innovation process⁶². Of course, open innovation is not a "one-size-fits-

all” strategic approach and every firm has to decide on the right degree of openness to apply in the development and exploitation phases of the innovation process⁶³. Using open innovation to develop innovation entails systematically relying on external sources of knowledge and technologies to accelerate internal development⁶⁴. On the other hand, open innovation in the exploitation phase means systematically searching for opportunities to sell proprietary technologies outside the firm’s core business via out-licensing agreements, joint ventures or new venture spin-offs⁶⁵. In addition to applying proprietary technologies to develop new products/services, processes and business models, this strategic approach allows firms to gain additional monetary benefits that help increase the returns on innovation investments⁶⁶. An open strategy in the innovation development and exploitation phases entails a reduction of the level of control that the firm can exert on the innovation process and exposes it to increased risks of reduced appropriability and knowledge spillovers⁶⁷, which call for appropriate management and organizational solutions⁶⁸.

The What of an Innovation Strategy. This refers to the different types of innovations that firms can decide to invest in. A firm may choose to focus its efforts and resources to innovate its products/services⁶⁹ or to change its business model⁷⁰. Although business model innovations frequently entail changes and modification to the products/services that a firm offers, the business model can be innovated without significant changes to the firm’s products/services. Today, there is increasing understanding that business model innovation is a very powerful source of competitive advantage, although its proper implementation requires making deeper changes to the established routines and mental models. A further aspect of the *what* dimension of innovation in our model is the distinction between product/service innovation and process innovation⁷¹. In the former, innovation concerns changes to

the firm's offer that are immediately and highly visible to its customers. In the latter, innovation concerns incremental or radical improvements to processes (e.g., operations, logistics, administration) and typically does not cause changes that are immediately visible to its customers. This suggests that product/service innovation, compared to process innovation, entails higher risks as it potentially has a direct effect on its market positioning and identity in the customers' eyes. Finally, the *what* dimension of an innovation strategy concerns the degree of change that characterizes a firm's innovation efforts. The established dichotomy between radical and incremental innovation⁷² suggests that firms may engage in innovation projects aimed at producing a significant improvement over the status quo or producing limited changes over what already exists. Clearly, the level of risk and the degree of departure from existing organizational routines associated with the two types of innovations are very dissimilar as are the resource commitments they entail⁷³, and this constitutes an important aspect of FDI.

In the next section, we suggest that finding an internal fit among the innovation strategy dimensions is not enough to unlock the innovation potential in family firms or to resolve the paradoxical effects of family involvement on innovation. FDI instead requires that the strategic innovation decisions are consistent with the family firm characteristics along the *willingness*, *ability as discretion* and *ability as resources* dimensions introduced above.

Family-Driven Innovation (FDI) and competitive advantage

FDI is a matter of achieving fit among the key drivers of family firm heterogeneity - the family's *willingness*, *ability as discretion* and *ability as resources* - and the key drivers of innovation decision heterogeneity - *the locus of innovation*

search, the approaches used in managing the innovation process, the types of innovation in which the firm invests. Creating fit amongst these contingency factors is of pivotal importance to resolve the ability and willingness paradox in family firm innovation, unlock the innovation potential and thereby allow family firms to build competitive advantage.

This clearly emerges from a number of examples of our consultancy and research experience, both in the innovation and the family business fields. One of these is particularly illustrative of how FDI operates. A family firm among worldwide leaders in vacuum technologies struggled for years to implement an innovation strategy based on developing radically new products by searching for knowledge in new technology domains via a closed innovation model. The Director of Corporate R&D strongly supported this strategy and convinced the Top Management Team (TMT) to invest in it. Unfortunately, this approach was largely unsuccessful and the firm suffered a competitive disadvantage vis-à-vis its international competitors for a number of years.

The main reason underlying this failure was the lack of alignment between the firm's strategy and its characteristics: the owners strongly prioritized the pursuit of non-economic goals over profit maximization. This orientation proved incompatible with the idea of aggressively investing in radical innovation even if the TMT had initially approved this plan. Moreover, the firm lacked the financial resources to invest in costly and risky R&D projects due to a parsimonious approach to managing the family's capital. The family owners were also concerned about keeping control of the firm and preserving the family identity, which over the years led to the middle management's lack of professionalization. These resource constraints meant that the firm was unable to make large investments in internally developing new knowledge in

unfamiliar technology domains as instead required by the innovation strategy that the Director of Corporate R&D pursued.

After years of disappointing innovation results, the firm's performance improved after an intra-family succession when the new owners reduced the focus on non-economic goals and became more oriented towards achieving strong profitability. This was now more consistent with the radical innovation strategy that the firm considered a critical cornerstone of successfully competing against larger players in the vacuum technology industry. At the same time, the Director of Corporate R&D started to implement an open approach to managing the development and exploitation phases of the innovation process. This was key to circumventing the lack of financial resources and professionalization that continued to characterize the firm and had previously hindered the development of new knowledge in distant technology when the firm worked according to the closed innovation model.

These changes led to attaining a form of FDI, i.e., a close fit between the family firm's innovation strategy dimensions and its idiosyncratic characteristics, which allowed resolving its innovation paradox and unlocking the innovation potential to create competitive advantage.

The point we want to make in this article is that this new comprehensive framework - called Family-Driven Innovation (FDI) - can guide future research and practice in the flourishing field of family firm innovation. The four articles in this special section illustrate the usefulness of the FDI framework. From their own individual perspectives, these four independent studies help us understand how our FDI model can be used to explain the mechanisms through which family firms build and sustain their competitive advantage through innovation. Let us here briefly consider how the four articles complete the illustration of the FDI framework.

First, the Miller, Wright, Le Breton-Miller and Scholes' contribution (REFERENCE TO PAPER IN THE SPECIAL SECTION HERE) clearly points to the goal-setting idiosyncrasy of family firms. Their analysis builds on a comparison between socio-emotional wealth and speed of change in the environment to identify relevant dimensions for the fit of what we call the *where* dimensions of FDI (willingness of family owners and sources of knowledge resources for innovation), and the *what* dimensions (ability as resources of the family owners and types of innovation). The results of this contribution are summarized in a four-by-four framework that clearly identifies the tensions on resources that become relevant for each of the four quadrants depicted.

Bogers, Boyd and Hollensen (REFERENCE TO PAPER IN THE SPECIAL SECTION HERE) follow with a single case study spanning 60 years and illuminating the contribution of family ownership, values and rigidities to the evolution of a business model in a sector characterized by high turbulence. In so doing, this article clearly exemplifies one of the four quadrants depicted in the Miller and colleagues framework and contributes to understanding the fit of the *what* dimensions (ability as resources of the family owners and types of innovation) and the *how* dimensions (ability as discretion of the family owners and approaches used to manage the innovation process, particularly the exploitation phase) in the FDI framework.

Foss and Bennedsen (REFERENCE TO PAPER IN THE SPECIAL SECTION HERE) employ a Resource-Based View of strategy to identify the evolution of *family assets* that have an impact on both the *where* dimensions (willingness of family owners and sources of knowledge resources for innovation) and the *how* dimensions (ability as discretion of the family owners and approaches used to manage the innovation process) of the FDI framework. Among the points this article makes is that

a dynamic tension exists and that *family assets* can turn into *family liabilities* that limit the scope and range of innovation in family businesses.

Finally, Holt and Daspit (REFERENCE TO PAPER IN THE SPECIAL SECTION HERE) introduce the concept of *innovation readiness*, suggesting moving upstream of our analysis to explore the pre-conditions that generate FDI. This contribution adopts a theory-grounded approach to identify a mechanism that can guide the analysis of the fit of the FDI framework along the *where* dimensions (willingness of family owners and sources of knowledge resources for innovation).

4. Future Research Agenda on Family-Driven Innovation

In this article, we have developed an FDI model and argued that only by obtaining an appropriate fit between the family firm heterogeneity dimensions and the strategic innovation decision heterogeneity dimensions it is possible to overcome the paradox that hinders innovation in family firms and thereby unlock the innovation potential for competitive advantage in this particular organizational setting.

Of course, more theoretical and empirical research is needed to further elaborate on this model and test our assumption of the positive impact of FDI on innovation and firm performance. In this section, we propose a research agenda informed by the FDI framework developed in this article that will hopefully become a useful tool for scholars to further our knowledge on innovation in family firms in an integrated and structured way.

INSERT TABLE 1 ABOUT HERE

The research questions summarized in Table 1 correspond to the following areas.

Fit between willingness and innovation strategy. In this area, future research should study the fit between the goals pursued by the family and the innovation strategy adopted by the family firm.

Fit between ability as discretion and innovation strategy. Here scholars should study the fit between the mechanisms underlying family owner discretion to orient the behavior of the family firm and the innovation strategy adopted.

Fit between ability as resources and innovation strategy. In this area, future scholars should study the fit between the capabilities and resources of family owners and the innovation strategy adopted by the firm.

Fit between different dimensions of the innovation strategy in a particular family firm. Here, future research should study the fit between different dimensions of the innovation strategy under the effect of different contingency factors related to family firm heterogeneity.

Performance implications of the dimensions of fit. Another area ripe for future research is the impact of different dimensions of fit of the FDI model on firm and innovation performance. This would allow collecting empirical evidence for the theoretical arguments developed in this article on the value of FDI in overcoming the innovation paradox characterizing family firms and unlocking their innovation potential.

Temporal dynamics in FDI. Many scholars emphasize the time-variant nature of family firms and the importance of adopting a temporal perspective to understand family business behavior⁷⁴. To the best of our knowledge, no study has investigated how the innovation behavior of family firms changes over time. Future research should therefore attempt to understand how family business innovation and particularly FDI change over time.

5. Conclusion

This article begins by highlighting that innovation in the context of family firms is typically characterized by a paradox manifested in family firms innovating less despite having the ability to do more. To solve this paradox and unlock the innovation potential of family firms, we argue that a close fit is required between the heterogeneity of innovation decisions and the heterogeneity of their idiosyncratic characteristics.

We call this internally consistent set of strategic innovation decisions that allows family firms to resolve the innovation paradox Family-Driven Innovation (FDI). We encourage scholars and business executives to take an integrated perspective to determine the contingencies of the *where*, *how* and *what* that capture the heterogeneity of innovation decisions and those capturing the heterogeneity of family firms, as well as taking into account the fit between these two sets of contingencies as a key mechanism through which family involvement in a business organization can lead to competitive advantage through innovation.

We argue that the integrated framework outlined in this article is useful to organizing existing and future research on the intriguing topic of innovation in family firms. Moreover, it allows identifying promising questions for future research on FDI that will ideally stimulate prolific discussions among family firm owners and managers on how to successfully implement innovations. The FDI model is not only relevant for family firms - the predominant form of business organization around the globe - but also for our general understanding of innovation processes and the mutual influences of an organization's corporate governance and innovation.

Figure 1. A Family-Driven Innovation Model

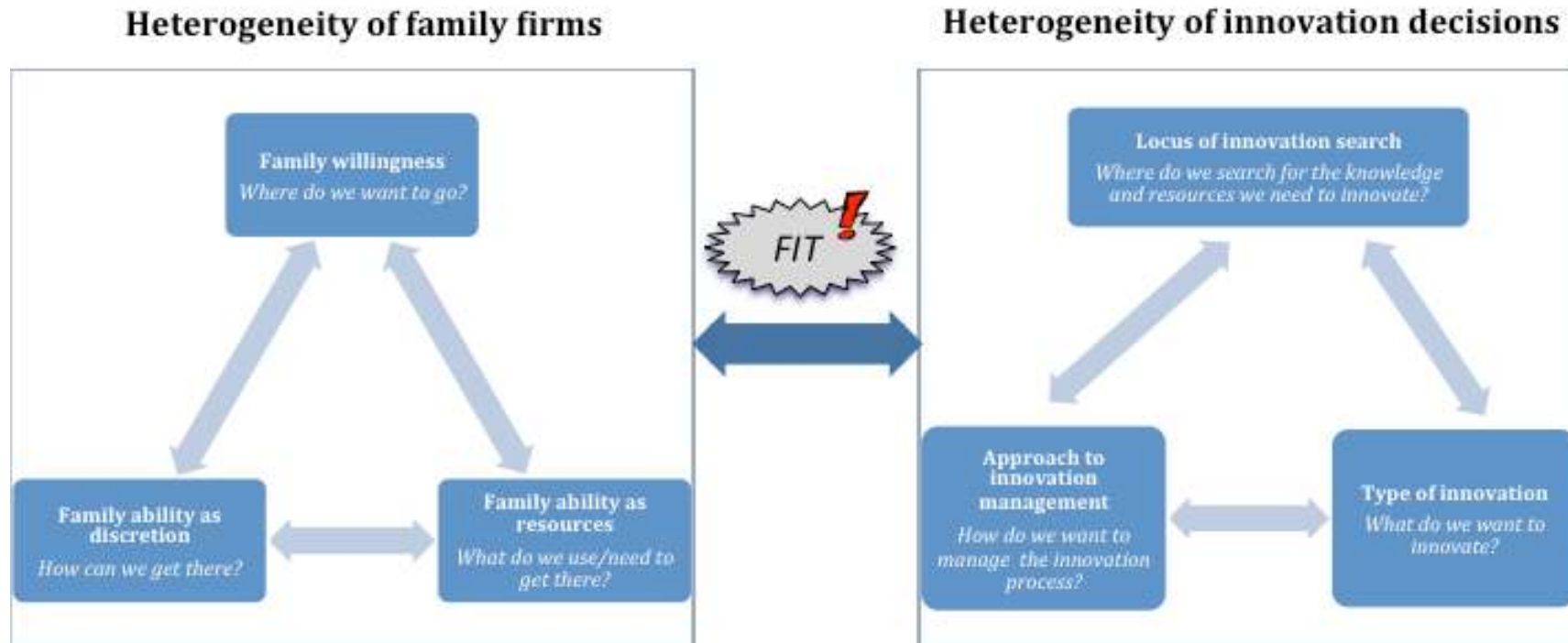


Table 1. Some Promising Questions for a Research Agenda on Family-Driven Innovation

Fit between family willingness and innovation strategy	Fit between family ability as discretion and innovation strategy	Fit between family ability as resources and innovation strategy	Fit between different dimensions of the innovation strategy in a particular family firm	Performance implications of the dimensions of fit	Temporal dynamics in FDI
Which family goals increase the family firm's propensity to pursue (i) product/service, process or business model innovation, and (ii) radical or incremental innovation?	Which organizational structures, governance mechanisms and decision-making processes grant family owners the discretion to direct the family firm towards the pursuit of (i) product/service, process or business model innovation, and (ii) radical or incremental innovation?	Which capabilities and resources do family owners need to direct the family firm towards the pursuit of (i) product/service, process or business model innovation, and (ii) radical or incremental innovation?	In family firms pursuing a particular set of goals, is there a propensity to develop and exploit product/service, process or business model innovation with an open or a closed innovation approach?	Does the pursuit of (i) product/service, process or business model innovation, and (ii) radical or incremental innovation in a family firm characterized by a particular set of goals lead to higher firm and innovation performance? In what circumstances (e.g., industry belonging, firm size, R&D intensity) and why does this relationship become stronger or weaker?	How do the heterogeneity dimensions of family firms - willingness, ability as discretion and ability as resources - change over time? How does this change influence the family firm innovation paradox?
Which family goals increase the family firm's propensity to engage in open or closed innovation in the development and exploitation phases of the innovation process?	Which organizational structures, governance mechanisms and decision-making processes grant family owners the discretion to direct the family firm towards using open or closed innovation in the development and exploitation phases of the innovation process?	Which capabilities and resources do family owners need to direct the family firm towards using open or closed innovation in the development and exploitation phases of the innovation process?	In a family firm characterized by a particular set of organizational structures, governance mechanisms and decision-making processes, is there a propensity to develop and exploit product/service, process or business model innovation by searching deep, broad or over time for the resources needed in the innovation process?	Does using open or closed innovation in the development and exploitation phases of the innovation process in a family firm characterized by a particular set of organizational structures, governance mechanisms and decision-making processes lead to higher firm and innovation performance? In what circumstances (e.g., industry belonging, firm size, R&D intensity) and why does this relationship become stronger or weaker?	To what extent and how do the consequences of the changing innovation paradox affect the fit mechanisms underlying FDI? In what ways, when and why does the ease of realizing FDI change over time?
Which family goals increase the family firm's propensity to search deep, broad and over time for the resources needed in the innovation process?	Which organizational structures, governance mechanisms and decision-making processes grant family owners the discretion to direct the family firm towards searching deep, broad and over	Which capabilities and resources do family owners need to direct the family firm towards searching deep, broad and over time for the resources needed in	In a family firm where the owners are endowed with a particular set of capabilities and resources, is there a propensity to use an open or closed innovation approach when they search deep, broad or over time for	What dysfunctional effects on firm and innovation performance arise from not adopting FDI? How do these effects manifest? Overall, what are the performance differences between firms adopting and not adopting FDI?	How does intra-family (or external) succession affect the heterogeneity dimensions of family firms and the heterogeneity dimensions of innovation decisions? How does intra-family (or external) succession affect

time for the resources needed in
the innovation process?

the innovation process?

the resources needed in the
innovation process?

the innovation paradox and the
underlying fit process that is required
by FDI? Is FDI more difficult when an
intra-family (or external) succession is
imminent? In what ways and why?

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²³ The involvement of family owners in management results in unique resources and capabilities (e.g., E. Gedajlovic and M. Carney, "Markets, Hierarchies, and Families: Toward a Transaction Cost Theory of the Family Firm," *Entrepreneurship Theory and Practice*, 34/6 (2010): 1145-1172). Different types of controlling owners may have different investment horizons, risk aversion, diversification plans, return aspirations and governance structures, which are likely to affect innovation activities and outcomes (see, e.g., R.E. Hoskisson, M.A. Hitt, R.A. Johnson, and W. Grossman, "Conflicting voices: The effects of institutional ownership heterogeneity and internal governance on corporate innovation strategies," *Academy of Management Journal*, 45 (2002): 697-716). For instance, the pursuit of non-economic goals may reduce their willingness to undertake collaborative innovation projects (J. Kotlar, A. De Massis, F. Frattini, M. Bianchi, and H. Fang, "Technology Acquisition in Family and Non-Family Firms: A Longitudinal Analysis of Spanish Manufacturing Firms," *Journal of Product Innovation Management*, 30/6 (2013): 1073-1088). Moreover, family involvement in ownership, management and governance can result in developing unique resources that can then be leveraged in ways that affect innovation. For example, the unique characteristics of the social capital of family firms can affect their ability to use external knowledge sources during the innovation process or adopt functional structures rather than cross-functional teams to organize the innovation process (A. De Massis, F. Frattini, E. Pizzurno, and L. Cassia, "Product Innovation in Family versus Non-Family Firms: an Exploratory Analysis", *Journal of Small Business Management*, 53/1 (2015): 1-36.

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²⁵ Literature on family business innovation is largely consistent in showing that family firms invest less in R&D than nonfamily firms (see, e.g., J.H. Block, "R&D investments in family and founder firms: An agency perspective", *Journal of Business Venturing*, 27/2 (2002): 248-265). However, due to their long-term orientation, the variability of R&D investments is greater in family firms (J.J. Chrisman and P.C. Patel, "Variations in R&D investments of family and non-family firms: Behavioral agency and myopic loss aversion perspectives", *Academy of Management Journal*, 55/4 (2012): 976-997). A notable exception is Asaba's study (S. Asaba, "Patient investment of family firms in the Japanese electric machinery industry", *Asia Pacific Journal of Management*. DOI:10.1007/s10490-012-9319-3) showing that family firms tend to invest more than their counterparts when financial factors and environmental uncertainty are controlled. Moreover, Sciascia and colleagues (S. Sciascia, M. Nordqvist, P. Mazzola, and A. De Massis, "Family Ownership and R&D Intensity in Small and Medium-Sized Firms", *Journal of Product Innovation Management*, 32/3 (2015): 349-360, DOI:10.1111/jpim.12204) show that in SMEs, the relationship between family ownership and R&D intensity is contingent on the way the family invests its wealth. Family ownership is a negative correlate of R&D intensity when family wealth and firm equity overlap is high, implying that the more a family controls firm ownership, the less the SME is inclined to invest in R&D. Conversely, if the portion of family wealth invested in the firm is low, cautious behavior is replaced by a more innovative attitude resulting in higher R&D expenditure.

²⁶ Regarding the impact of family involvement on innovation activities, De Massis and colleagues (A. De Massis, F. Frattini, E. Pizzurno, and L. Cassia, "Product Innovation in Family versus Non-Family Firms: an Exploratory Analysis," *Journal of Small Business Management*, 53/1 (2015): 1-36) analyze how and why the anatomy of the product innovation process differs between family and nonfamily firms. The analysis shows that due to their distinctive characteristics, family businesses differ with regard to product innovation strategies and organization of the innovation process. For instance, family firms use a functional organization in the innovation process, with high levels of decisional autonomy given to project leaders. Throughout this process, they rely on a higher number of collaborations with universities and public research centers, while the organizational climate is largely informal and unstructured. Conversely, nonfamily firms predominantly establish cross-functional teams to carry out these projects, with limited delegation of decisional authority to project leaders and a highly structured and formalized organizational climate. Kotlar and colleagues (J. Kotlar, A. De Massis, H. Fang, and F. Frattini, "Strategic Reference Points in Family Firms", *Small Business Economics*, 43/3 (2014): 597-

619; J. Kotlar, A. De Massis, H. Fang, and F. Frattini, "Profitability goals, control goals, and the R&D investment decisions of family and nonfamily firms", *Journal of Product Innovation Management*, 31/6 (2014): 1128-1145) offer other examples of studies on how family involvement affects innovation activities.

²⁷ Concerning how family involvement affects innovation outputs, the findings from existing research are controversial. Some studies show that family involvement is negatively associated with the quantity and quality of patents obtained (e.g., C.L. Chin, Y.J. Chen, G. Kleinman, and P. Lee, "Corporate ownership structure and innovation: Evidence from Taiwan's electronics industry", *Journal of Accounting Auditing Finance*, 24/1 (2009): 145-175) while others show that family involvement positively affects innovation outputs (e.g., P. Westhead, "Ambitions, external environment and strategic factor differences between family and non-family companies", *Entrepreneurship & Regional Development*, 9/2 (1997): 127-158).

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³² E. Almirall and R. Casadesus-Masanell, "Open Versus Closed Innovation: A Model of Discovery and Divergence", *Academy of Management Review*, 35/1 (2010): 27-47.

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³⁴ J. Kotlar, A. De Massis, F. Frattini, M. Bianchi, and H. Fang, "Technology Acquisition in Family and Non-Family Firms: A Longitudinal Analysis of Spanish Manufacturing Firms," *Journal of Product Innovation Management*, 30/6 (2013): 1073-1088.

³⁵ T.H. Hannan and J.M. McDowell, "The Determinants of Technology Adoption: The Case of the Banking Firm", *The RAND Journal of Economics*, 15/3 (1984): 328-335.

³⁶ R.S. Burt, "Social Contagion and Innovation: Cohesion versus Structural Equivalence", *The American Journal of Sociology*, 92/6 (1987): 1287-1335.

³⁷ Recent research (A. König, N. Kammerlander, and A. Enders, "The family innovator's dilemma: How family influence affects the adoption of discontinuous technologies by incumbent firms," *Academy of Management Review*, 38(2013): 418-441) suggests that family firms adopt discontinuous innovations later than their non-family counterparts, but when they decide to adopt them, implementation and integration happen more rapidly.

³⁸ R. Drazin and A.H. Van de Ven, "Alternative forms of fit in contingency theory", *Administrative Science Quarterly*, 30(4): 514-539.

³⁹ In introducing the concepts of *willingness*, *ability as discretion* and *ability as resources* we build on De Massis and colleagues' conceptualization of willingness and ability (A. De Massis, J. Kotlar, J.H. Chua, and J.J. Chrisman, "Ability and Willingness as Sufficiency Conditions for Family-Oriented Particularistic Behavior: Implications for Theory and Empirical Studies", *Journal of Small Business Management*, 52/2 (2014): 344-364) and claim that explicitly considering willingness and ability and taking into account their varying degrees in family firms enables arriving at a good understanding of the heterogeneity of family firms. It should be noted that De Massis and colleagues in their study recognize the existence of a resource-based component of ability, but only address ability as discretion.

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- ⁵⁰ J. Tidd and J.R. Bessant, *Managing Innovation: Integrating Technological, Market and Organizational Change, 5th Edition* (John Wiley & Sons, 2013).
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