

Managing Ambidexterity in a Digital Entrepreneurship Context: Startups in the Banking and Financial Sector

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Managing Ambidexterity in a Digital Entrepreneurship Context: Startups in the Banking and Financial Sector

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We explore digital entrepreneurship in the banking and financial sector through the concept of organizational ambidexterity (AO), which is defined as the balance between the exploration of new activities and the efficient exploitation of existing activities. We examine how AO can help meet the challenges of viability and sustainability faced by fintech, which are startups that combine the attributes of digital technologies and finance. Based on interviews with founders/managers, our results show the development of a “mixed ambidexterity”, which combines exploration and exploitation activities. Contrary to the dominant scientific discourse, different forms of ambidexterity do not in themselves constitute “pure” or opposed forms. They can be combined using managerial levers to develop “multi-ambidextrous” structures, particularly in dynamic and competitive technological environments. Our research contributes to the entrepreneurship literature by a reflection through the managerial concept of AO. We propose an entrepreneurial approach based on entrepreneurs’ capacities to reconcile exploration and exploitation. We therefore extend our understanding of entrepreneur behavior through the

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Keywords

fintechs, exploitation and exploration, organizational ambidexterity, mixed ambidexterity, innovation

Introduction

The digital transformation of society and economic sectors offers a range of opportunities to develop new activities. This is the case in the banking and financial sector, where the development of digital entrepreneurship has made it possible to offer a multitude of new business models (Gazel & Schwienbacher, 2021). Digital entrepreneurship focuses on methods of designing and marketing digital technologies in the context of the creation of new activities (Bertoni et al., 2021; Sahut et al., 2021). Digital entrepreneurship has experienced considerable growth in the banking and financial sector in recent years thanks to the development of fintechs (KPMG, 2020), which are startups that combine the attributes of digital and financial technologies to offer banking and financial products and services (Leong et al. 2017). Despite the rise of fintechs, we know very little about the processes by which they manage to ensure their sustainability (Ryu & Ko, 2020).

In this article, we explore the concept of organizational ambidexterity (AO) in the context of fintechs. Researchers have used the concept of OA to describe an organization's ability to maintain a balance between the development of new activities (exploration), and the implementation of a strategy to ensure efficiency and the continuity of existing activities (exploitation) (Cenamor et al., 2019; Heracleous et al., 2017; Sharma & Salvato, 2011). The decline of high-tech pioneers such as Kodak, Blackberry, and Nokia clearly shows the importance of satisfying this double imperative to the survival of an organization (Du & Chen, 2018; Li, 2020). Being satisfied only with the competitive advantages that have prevailed market share or momentary success inexorably leads organizations into a state of obsolescence and inertia (Papachroni et al., 2016). To survive, especially in rapidly changing and innovative technological environments, organizations must also secure their futures by creating sustainable growth potential through the development of exploration activities (Sinha, 2015). This maxim

has fueled the scientific debate on the concept of AO (March, 1991; O'Reilly & Tushman, 1996; Smith & Tushman, 2005).

While some studies on OA have focused on intra-organizational solutions for achieving a balance between exploration and exploitation (Bernal et al., 2019; Dolz et al., 2019), others have advocated an alternating time cycle between these two activities (Göbeler et al., 2020; Ossenbrink et al., 2019) or an inter-organizational balance through alliances, acquisitions, or joint ventures (Kin et al., 2018; Wang et al., 2019). Analysis of antecedents to OA, such as strategic foresight (Amniattalab & Ansari, 2016; Zakrzewska-Bielawska, 2021), organizational learning (Ojha et al., 2018), IT infrastructure (Youngki et al., 2020), organizational culture (Lee et al., 2017), and marketing and technological capabilities (Liu et al., 2018), have also been of interest to researchers. The effects of ambidexterity on organizational performance have presented another line of inquiry (Kollmann & Stöckmann, 2014). It has been shown that exploration and exploitation can positively (Cho et al., 2020; Lampert & Kim, 2018; Su et al., 2017) and negatively (Lin & Si, 2019; Menguc & Auh, 2008) influence performance, depending on the organizational context. And while the dual exploration–exploitation imperative has been the subject of many contributions in the literature, with a few exceptions, studies have neglected startups, especially those engaging in technological innovation. Moreover, the specificities of the digitalization of activities rarely appear in current developments, despite a context of digital transformation that impacts all economic sectors (Du & Chen, 2018). There are several reasons to examine AO in the context of fintechs:

First, the industry wherein fintechs operate is considered one of the most regulated in the world (Barquin & Vinayak, 2016), which allows us to better delineate the evolutionary context of the phenomenon and provide a more accurate view of OA in this context.

Second, fintech startups, whose activity includes a strong propensity for innovation (as is often the case with startups), could run the risk of enduring an endless cycle of unsuccessful exploration at the cost of any exploitative activities. Similarly, as profits from exploitative activities generally materialize sooner (March, 1991), the tendency to favor an exploitative activity at the cost of exploration remains possible (Sinha, 2015). This increases the risk of organizational inertia.

Third, while fintechs are now recognized as the main driving force for innovation in the banking and finance sector (Moro-Visconti et al., 2020), the challenges faced by these young companies are significant, as this sector is still dominated by some of the largest and oldest institutions (Ryu & Ko, 2020). Indeed, fintechs are still little known among the general public and do not yet have the same historical weight in terms of trust. They also do not have vast repositories of customers like those that long-established companies have been able to develop over time (Hu et al., 2019). Many fintechs have started by offering new solutions that can compete with long-established companies (Kolokas et al., 2020). However, the challenge of sustaining their positions over time is a major issue for fintechs. To survive and grow, fintechs need to find a balance between satisfying existing activities and developing new ones to maintain a continuous capacity for innovation (Verona & Ravasi, 2003) and thus stay ahead of the long-established companies.

Fourth, fintechs are entrepreneurial in nature (Haddad & Hornuf, 2019). In this regard, compared to well-established companies in the banking and financial sector, they are naturally faced with resource constraints (Korunka, 2003). Moreover, given that exploration and exploitation compete for scarce resources in the organization (Costanzo, 2019; Yacoubi & Tourabi, 2020), this situation could give rise to an imbalance in the allocation of the resources necessary for each segment of activity (Koubaa, 2017; Yacoubi & Tourabi, 2020).

The arguments above led us to formulate the following research question: *What form(s) of organizational ambidexterity do fintech startups develop, and how are exploitation and exploration efforts orchestrated to move companies toward ambidexterity?*

To answer this question, we explored the organizational practices of fintechs based on interviews with founders/managers. The results show that these practices are conducive to the exploration of new paths while also exploiting existing knowledge and skills. In addition, these practices be combined in the form of mixed ambidexterity. Our research contributes to the entrepreneurship literature by a reflection through the managerial concept of AO. We propose an entrepreneurial approach based on entrepreneurs' capacities to reconcile exploration and exploitation. We therefore extend our understanding of entrepreneur behavior through the concept of AO and address the lack of research on this concept in the entrepreneurship literature (Guerrero, 2021).

This article is organized as follows. In the first section, we review the literature on organizational ambidexterity. In the second section, we present the research methodology. In the third section, we present the empirical findings, the exploration and exploitation activities observed at fintechs, and any forms of ambidexterity that emerged. In the fourth section, we discuss the results. In the last section, we consider the contributions of this research and propose avenues for future research.

Theoretical Background

In this section, we review the literature on ambidexterity and its organizational responses. We examine both organizations in general and startups in particular.

The Concept of Organizational Ambidexterity

Since its entry into the field of management sciences through the analyses of Duncan (1976) and March (1991), the concept of OA has enjoyed real success around the problems of innovation (Du & Chen, 2018). OA is considered particularly relevant under conditions of environmental volatility and uncertainty because it helps organizations maintain strategic agility, allowing them to align with the existing environment and adapt to potential turbulence (Heracleous et al., 2017). In March's (1991) seminal analyses, OA is defined as "the maintenance of an appropriate balance between exploitation and exploration as the primary factor in the survival and prosperity of the organization" (p. 71). Without this balance, an organization can become trapped in its dynamics, either by directing its efforts more toward exploration (Raisch & Birkinshaw, 2008), potentially sacrificing the effectiveness of current activities, or by committing to a policy of exploitation (Papachroni et al., 2016), making it susceptible to organizational inertia and less adaptable to changes in the environment. This, in turn, makes it more challenging for organizations to allocate sufficient time and resources to activities that support their current viability and to exploration to ensure future viability (Levinthal & March, 1993).

To address this issue, the literature highlights several approaches to striking a balance between exploitation and exploration (O'Reilly & Tushman, 2013). One of these is structural ambidexterity, which could be operationalized either through temporal separation (i.e., sequential ambidexterity) (Göbeler et al., 2020; Holotiuk & Beimborn, 2019) by planning the two activities of exploration and exploitation at different periods (Andriopoulos & Lewis, 2009; Gibson & Birkinshaw, 2004), or through separation of duties (i.e., simultaneous ambidexterity) by delegating exploration and exploitation activities to different business units within an organization (Tushman & O'Reilly, 1997). Organizations practice temporal separation when they change their structures sequentially over time in response to changing exploration and exploitation needs. However, according to Tushman and O'Reilly (1997), sequential

ambidexterity may be ineffective in times of rapid change. This is why simultaneous ambidexterity—with structurally separate sub-units to organize exploration and exploitation activities and an involved management capable of balancing the two activities—may be necessary.

Another approach, contextual ambidexterity, was introduced by Gibson and Birkinshaw (2004). Rather than seeking to achieve ambidexterity through predetermined structures, they argue for developing the ability of organization members to manage the appropriate balance between exploration and exploitation themselves. That is, instead of imposing formal structures on organization members, organizations would achieve ambidexterity through a supportive organizational context that allows individuals to “judge for themselves how best to allocate time between the conflicting demands of exploration and exploitation” (Gibson & Birkinshaw, 2004). Building on the analyses of Ghoshal and Bartlett (1994), Gibson and Birkinshaw (2004) suggest four attributes that can facilitate ambidextrous individuals’ behavior: flexibility, discipline, mutual support, and trust. Organizations should be able to balance performance management variables (discipline and flexibility) with social context variables (mutual support and trust) to achieve contextual ambidexterity (Gibson & Birkinshaw, 2004; Raisch & Birkinshaw, 2008). In addition, a strong organizational culture and decentralization, as well as supportive and flexible leadership and socialization practices, can facilitate contextual ambidexterity (Adler et al., 1999; Andriopoulos & Lewis, 2009; Li, 2013).

The third approach discussed in the literature is leadership ambidexterity, which concerns the central role of organizational management in achieving ambidexterity (Birkinshaw et al., 2016; Raisch & Birkinshaw, 2008; Smith & Tushman, 2005). For example, Lubatkin et al. (2006) describe how executive teams with a high degree of organizational cohesion and integration have a positive effect on organizational ambidexterity.

The various archetypes of OA identified in the literature offer insight into possible organizational responses to address the tension between exploration and exploitation. Although most studies have focused on large or mature organizations, some have also examined startups. The findings from these studies are presented below.

Organizational Ambidexterity in Startups

In a recent paper, Korpysa (2021) examined some factors related to ambidexterity in innovation processes used by Polish startups during their first year of existence. These startups were from a variety of industries. The author emphasizes that the reduction of tension between exploitation and exploration largely depends on the use of multiple external resources, such as financing, external infrastructure, and acquisition of licenses and patents, which are not always available to such startups during their early stages. This observation is in line with that of Müller et al. (2019), who demonstrated that startups could achieve ambidexterity not only by leveraging external skills, but also by mobilizing the internal skills of the founders and their collaborators.

Using a sample of high-tech startups, Balboni et al. (2019) examined how growth-related performance is impacted by initial business models and subsequent exploration and exploitation activities. The findings showed that the ambidextrous approach should be developed over time. Initiating both exploration and exploitation activities simultaneously can be very demanding for entrepreneurs and thus negatively impact performance. The pursuit of contrasting goals immediately after founding a company could therefore inhibit its growth potential, whereas the development of ambidexterity during the later phases has a positive influence on growth.

Another analytical approach (Beckman, 2006) examined the composition of teams of collaborators at startups in Silicon Valley and their previous professional or academic affiliations as antecedents of organizational ambidexterity. The results showed that the convergence of similar expertise within teams was conducive to exploitation, while diverse

profiles provided a wider range of ideas and contacts, which encouraged exploratory behavior. Consequently, the composition of the startup's team would constitute a factor that is likely to orient its activities, sometimes toward exploration and sometimes toward exploitation (Tsai, 2016). In their analysis of technology-based startups funded in Germany, Kuckertz et al. (2010) found that both exploration and exploitation behaviors were positively associated with the success of innovation projects and performance.

Sinha (2015) found that startups were sometimes too focused on exploration, engaging in excessive experimentation and, in the process, losing any possibility of reaping the rewards of their exploration efforts. He attributed the failure of more than 50% of new startups before they hit their five-year anniversary to this excessive focus on exploration. He indicated that the achievement of ambidexterity depends heavily on the founder's leadership in dealing with the two conflicting demands of exploration and exploitation. According to Sinha (2015, p. 318), "the ambidexterity propensity and multitasking capabilities of the founder," supplemented by the complementary capabilities of the startup's team, "positively influence organizational ambidexterity in the growth phase of the startup." He also observed a tendency for some startups to engage in excessive exploitation activity, which led to certain organizational inertia. Thus, as argued by Kollmann et al. (2019), startups are more likely to achieve long-term survival and growth if they establish ambidextrous structures immediately after achieving organizational stability. They also suggest that the emergence of ambidextrous management in startups depends heavily on the founder's entrepreneurial experience and explicit long-term aspirations for growth.

Due to their extremely limited resources, startups need to be ambidextrous in an integrated manner (Brem, 2017). This is in line with Lubatkin et al.'s (2006) findings, which indicate that, given their smaller size and limited resources, startups cannot achieve ambidexterity through the structural separation of activities. They suggest organizing exploration and exploitation

activities through an interorganizational lens (i.e., joint ventures, alliances, and partnerships) rather than through the internal separation of activities. Raisch and Birkinshaw (2008) argue in favor of a contextual ambidexterity approach, offering flexibility to the members of the startup to decide for themselves how to divide time between exploration and exploitation. For these authors, startups are “embryonic” organizations, so it makes sense to focus on the activities of the individuals who make up these organizations in the early stages of their development.

In summary, this review of the state of the art on OA has provided conceptual and empirical insight into the mechanisms by which organizations in general, and startups in particular, can manage the potential tension between exploration and exploitation (Figure 1). However, the question of which type of ambidexterity is preferable and how it should be implemented remains open. And although there have been several useful contributions to the demystification of the phenomenon, “no map (model) is in itself a sufficient descriptor of a complex system (reality)” (Garnsey & McGlade, 2006). Therefore, a closer investigation of OA at fintechs will allow us to more accurately describe its dynamics in this context.

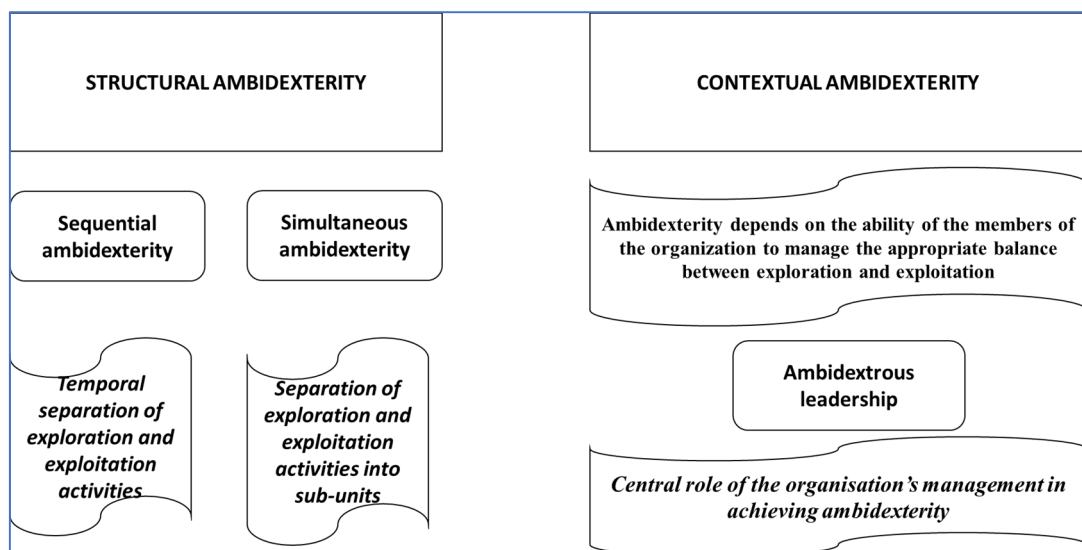


Figure 1 Approaches to organizational ambidexterity.

Methodology

In accordance with the objectives of this research, the methodological approach was exploratory and based on qualitative data (semi-structured interviews and secondary data collection).

Context of the Study and Data Collection

The research was based on a sample of seven French fintech startups offering banking or finance products or services (Table 1). The samples were selected based on a reasoned approach (Seawright & Gerring, 2008). More precisely, we carefully selected fintechs from the book *L'officiel 2019 des FinTech françaises* [*The 2019 Official of French FinTechs*],¹ which lists those that have existed since 2018 in each of the seven segments of fintech activities: payment services, participatory financing, consumer credit, personal finance management, savings and asset management, new generation banks, and corporate financial services. From the detailed identity sheets of the fintechs (date of creation, contacts, description of the activity, diversification logic, partnerships, etc.), we selected the most representative fintechs in each segment. Table 1 presents the list and characteristics of the selected fintechs to put the study sample into context. Note that the relatively small number of fintechs in the sample does not compromise our analyses. Indeed, according to Fortin and Gagnon (2016), in a qualitative methodology, the most important thing is whether the researcher is able to describe and understand the context of the case(s) studied. In this framework, the researcher should be concerned with providing valid data rather than questioning its representativeness (Gustafsson, 2017).

Fintech's pseudonym	Year of creation	Activity	Respondent's function
SF1	2007	Payment services	Founder-Manager

¹ Partners Investance. (2018). *L'officiel 2019 des fintech françaises*. Gualino.

SF2	2011	Participatory financing	(Co)Founder-Manager
SF3	2008	Consumer credit	Founder-Manager
SF4	2010	Personal finance management	Founder-Manager
SF5	2012	Savings and asset management	(Co)Founder-Manager
SF6	2011	New generation banks	Founder-Manager
SF7	2011	Business financial services	(Co)Founder-Manager

Table 1 Characteristics of the fintechs in the sample and function of the respondents.

The semi-structured interviews took place between 10 January and 15 October 2019. The average duration of the interviews was one hour. The interviews were conducted with the (co)founders of fintechs. According to Torrès (1999), in entrepreneurial organizations, the company and the entrepreneur are one and the same. The founder usually served as a manager at the firm, and at the same time made practically all strategic decisions (Müller & Paske, 2019). The choice of founders is even more relevant, as their opinions are crucial in most phases of fintech development (Koubaa, 2017). However, we agree with Raisch et al. (2009) that “ambidexterity is probably a function of individual and organizational effects” (p. 688). Accordingly, in this study, ambidexterity reflected the behavior of the founders, who in turn support the ambidexterity of the fintech and its collaborators.

Drawing on the analyses of Volery et al. (2013), Table 2 provides a summary of the different roles and activities associated with exploration and exploitation and their implications for analyzing the development of ambidexterity. The questions in the semi-structured interview guide revolved around this framework of awareness of the two dimensions of ambidexterity (exploration and exploitation). The questions were designed to elicit respondents’ perceptions, narratives, and interpretations of these two dimensions. Respondents were asked to provide examples in which their organization had either innovated (exploration) or simply modified existing products or processes (exploitation). In addition to the primary data obtained through

interviews, we also collected a set of “secondary data.” Such data came from documents provided to us during interviews (e.g., company presentation documents and brochures) and our own research (e.g., press release materials and articles, online information, and fintech websites). All the secondary data collected in this way were used for a more detailed analysis of the fintechs that were studied.

Dimension of ambidexterity	Description	Implications for the ambidexterity analysis
<i>Exploration</i>	Ability to detect and seize new opportunities/needs in the market.	Represents a fintech’s ability to explore and identify new ideas or opportunities and innovate or commercialize new products or services.
<i>Exploitation</i>	Micro-foundations at work to optimize and support the continuation of extant activities.	Represents a fintech’s ability to leverage existing resources.

Table 2 Conceptual framework for exploration and exploitation activities.

Data Analysis

The data analysis was conducted using thematic content analysis (Paillé & Mucchielli, 2016), which allows for the discovery of themes in a textual dataset (corpus). Our first step as a researcher, once our dataset was compiled, was to code the data and classify it (Gavard-Perret et al., 2012), grouping it into categories or themes with the goal of proposing a new data assembly (Gavard-Perret et al., 2012). To this end, we relied on qualitative data analysis software (Nvivo starter 11). This software allows for information storage, classification, organization, and performance search operations (Deschenaux, 2005). Through thematic coding, the researcher seeks to retrieve and centralize segments of data (e.g., a verbatim excerpt from an interview) in the right place. Therefore, we carried out an a posteriori coding process, starting with the data collected in the field, to build our analysis grid gradually.

Although the software supports the methodological approach, it does not help the researcher interpret the data. Indeed, only the researcher decides which coding operations to carry out and which are important. As the data collected were extraordinarily rich, we focused only on those parts of the data that could provide key information about managing exploration and exploitation activities: by reading the transcripts, extracting the relevant and interesting sentences in each interview, and transferring them into the software. Moreover, to gain methodological rigor, we mobilized in parallel the techniques and procedures of grounded theory as formulated in the Gioia method (Gioia et al., 2013). Through iterations (abduction), this method of analysis identifies themes and dimensions that allow an empirically grounded framework of analysis to emerge. The implementation of the Gioia analysis procedure consists of a three-step data presentation.

The first step is called first-order analysis, which consists of transcribing respondents' opinions in their own words and identifying themes that emerge (Gioia et al., 2013). This is followed by a second-order analysis based on the themes identified in the first step. For the researcher, it is a question of carrying out abductive reasoning, which leads to propositions resulting directly from the analysis and interpretation that the researcher makes of the field data that he or she has collected. Finally, as recommended by Gioia et al. (2013), the two steps (first-order analysis and second-order analysis) come together in an aggregated dimension, illustrating the grouping of information from the field and its link with the concepts or theoretical approaches mobilized in the research (here, the various forms of ambidexterity identified in the literature). This theoretically based categorization illustrates the researcher's interpretation of the collected data. Figure 2 shows the data structure based on the analysis procedure of Gioia et al. (2013).

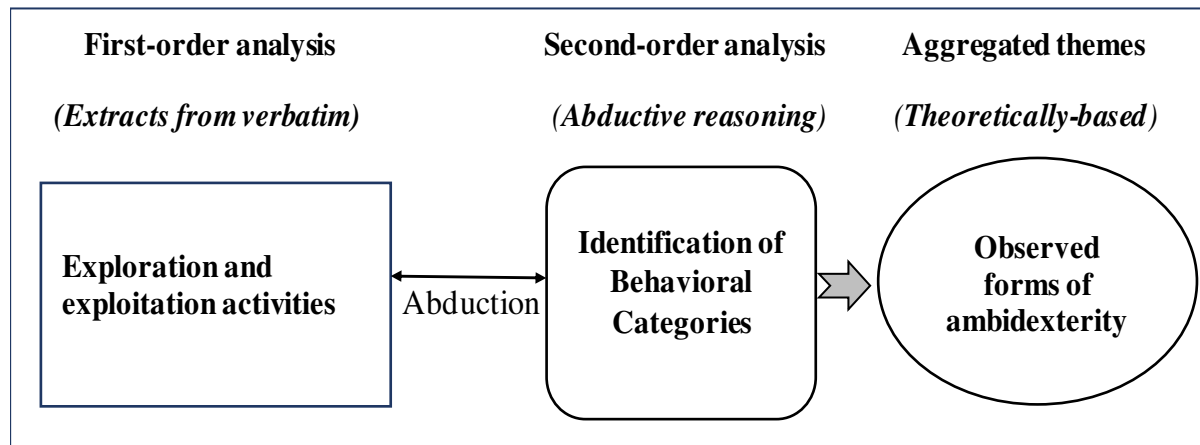


Figure 2 Structure of data processing based on Gioia et al.'s (2013) procedure.

Empirical Findings

From the verbatim (first-order analysis in Figure 2), four modes of exploration and exploitation activities (second-order analysis in Figure 2) were identified. This in turn revealed the forms of ambidexterity developed (aggregated themes in figure 2). Figure 3 shows the data structure resulting from the processing of our study based on the analysis procedure of Gioia et al. (2013).

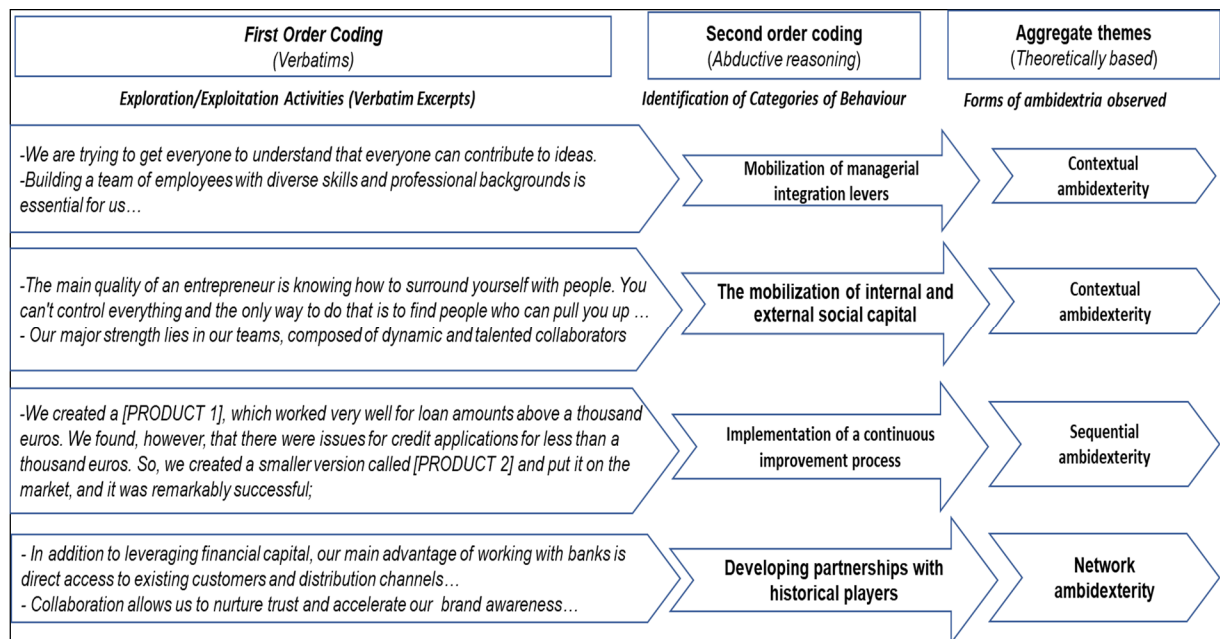


Figure 3 Data structure resulting from the processing of our study based on Gioia et al.'s (2013) procedure.

Mobilization of Managerial Integration Levers (Contextual Ambidexterity)

We identified certain behaviors of the founders that led to the development of contextual ambidexterity via managerial integration levers. For example, one respondent commented, “It starts with the integration process. All new employees are introduced to the ‘Every Opinion Counts’ approach.” This approach aims to create an atmosphere in which people can express themselves freely, without fear of negative consequences, from the moment they are hired. One respondent said, “During that (integration process), it was said: Whether you are an intern, a junior employee, or a senior employee, or even a vice president, every opinion counts, there are no stupid ideas. If you have an idea, just simply talk about it aloud.... We are trying to get everyone to understand that everyone can contribute to ideas.”

The leaders interviewed also emphasized the value of having a diverse team of collaborators. One respondent noted, “Growing your team by bringing in new talent requires strategy and efficiency.... Building a team of employees with diverse skills and professional backgrounds is essential for us.” This need for diversification seems to largely support the idea of having exploration and operations activities coexist in the same team. In their analysis, Carmeli and Halevi (2009) suggested that the ability to lead an organization ambidextrously depends on how well the leader sets up “an organizational context that articulates the ability to mobilize a variety of sometimes conflicting skills.” A diverse team composed of members with different professional backgrounds can therefore lead to achieving OA.

Respondents also reported having created platforms for exchange, such as periodic meetings, encounters, discussions, seminars, and off-site workshops, to discuss topics related to both exploration and operations. As one respondent noted, “in order to provide a platform to express oneself and give opinions and ideas at any time, an online innovation and feedback tool was set up. This tool allows any employee to post ideas and comments on various topics.” Through such forums, fintechs encourage the creation and maintenance of a shared organizational context that is intended to encourage reflection. Costanzo (2019) argues that this type of

practice ensures complementarity between exploitation and exploration. It also encourages openness through socialization and idea sharing (Manso, 2017). Such practices also appear to be related to the very cultural characteristic of startups encouraging participation (Müller et al., 2019). Moreover, Malmi and Brown (2008) argue that culture can be mobilized to regulate behavior and thus serve as a control system. The literature dealing with cultural control and its relationship to OA further reveals that cultural controls can support exploration and exploitation and even balance these two forces in the organization (Hodgkinson et al., 2016; Lee et al., 2017). According to Ylinen & Gullkvist (2014), they can enable ambidexterity by supporting “open communication channels and the free flow of information” (p. 94) and providing the flexibility to respond proactively to change.

Such contextual ambidexterity requires significant leadership from management and the fintech founder (Birkinshaw et al., 2016). The mobilization of different managerial levers of integration can help the founder strike the right balance between exploration and exploitation. Indeed, the literature on contextual ambidexterity regularly discusses leadership as a way to simultaneously materialize exploration and exploitation (Pertusa-Ortega et al., 2021; Van Assen, 2020).

Mobilization of Internal and External Social Capital (Contextual Ambidexterity)

In general, individuals and organizations are becoming increasingly involved in collaboration networks that share knowledge and generate innovation (Filiéri & Alguezaui, 2014). Social capital is perceived as a set of resources (tangible or virtual) that can be derived from a personal network or through the company’s social relationships and that facilitates the attainment of goals (Gabbay & Leenders, 1999). Tarteret (2014) distinguishes between external social capital, which refers to a founder’s relationships outside the organization, such as family, friends, and acquaintances, and internal social capital, which includes all the social relationships they developed through the organization. As one respondent said, “The main quality of an

entrepreneur is knowing how to surround yourself with people. You can't control everything, and the only way to do that is to find people who can pull you up." This social capital, which borrows from the founder's social context, seems to point us toward a form of contextual ambidexterity. In this context, the founders of fintechs have been able to rely on both internal and external mechanisms of acquiring social capital, the objective being to collect knowledge and encourage the expression of ideas that could lead to the emergence of new opportunities. As one respondent put it, "Beyond the financing aspect of the project, which is important, I believe that it is social capital that makes it possible to go beyond." Thus, if founders are mainly involved in the development of ideas that form the initial project during the startup phase, the social capital that the founder can mobilize around his or her project also contributes to nourishing entrepreneurial activities (Gazel & Schwienbacher, 2021). The underlying assumption here is that "collective intuition or knowledge is superior to individual intuition or knowledge" (Stiglitz, 2002).

The founder's social capital also crucially includes the ecosystem of incubators (Gazel & Schwienbacher, 2021) and other startup gas pedals (Pauwels et al., 2016) designed to overcome barriers and meet the needs of the fintechs in their early stages (Theodorakopoulos et al., 2014). As mentioned by one respondent, "In the initial phase of our project, we were quickly incubated at École Centrale Paris. This incubation gave us the privilege of being guided by a coach, founder of a startup in the past (now a client of ours), who helped us enormously throughout our evolution." To this, we must add the contribution of the fintech's collaborators over time. As the number of collaborators increased, the internal combination scheme made it possible to develop new components for the development of new ideas. All the interviewed founders suggested that their staff had clear potential for innovation. As mentioned by one respondent, "Our major strength lies in our teams, composed of dynamic and talented collaborators." In the end, all of the above observations were consistent with those of Müller et al. (2019), who

demonstrated that startups can achieve ambidexterity by leveraging internal and external competencies around the social context of the founder.

Implementation of a Continuous Improvement Process (Sequential Ambidexterity)

All respondents stated that after the startup phase of their activities, proposed solutions underwent a process of continuous improvement. The post-startup innovation phases involved dynamic and continuous changes aimed at improving the core functionality of the proposed innovations. These improvements seem to follow a logic of adaptation to technological evolutions and those of customers' uses. This is an exercise that often involves this customers in a logic of co-creation (Steiber, 2020; Steiber & Alänge, 2020; Weiblen & Chesbrough, 2015). Listening and solicitation exercises are indeed frequent and make it possible to improve value propositions, meet the expectations and needs of the customers. When asked how often his company modified its products or services since their initial proposal, one respondent said, "We make daily redeployments. So, it is not like version one, version two, version three. It is a small, free change, which is part of an agile methodology, and is important to us because it means we can initiate small changes." Such continuous improvement work is all the more important, as it can play a role in establishing a good reputation (or notoriety), which can impact revenue, notably through the opinions of existing users/customers, who can play the role of "ambassadors" of the offered products or services. This is a major challenge that must be met by new companies, such as fintechs, in their particular industry. It requires constantly improving the company's value proposition with a view to correcting malfunctions reported by users or functionalities deemed unsuitable. One respondent said, "Feedback is essential to the continuous improvement of our products and services, and even our business model."

We also found that, among fintechs, the logic of improvement is increasingly coupled with the logic of expansion of territories and diversification. Being originally based on positioning and

specialization in market niches, fintechs seem to be going further today. For example, one respondent stated that they expanded their activities to create two new product lines that have allowed the fintech to target three specific market segments (B2C, B2B, and C2C). The scenario described by another respondent was slightly different in that the main objective of expanding their product line was to create a smaller version of the original product for small loans: “We created [PRODUCT 1], which worked very well for loan amounts above a thousand euros. We found, however, that there were issues for credit applications for less than a thousand euros. So, we created a smaller version called [PRODUCT 2] and put it on the market, and it was remarkably successful.” As with product or service development, business models can also undergo development. For example, one respondent mentioned how her fintech was able to rethink its original strategy. It was one of the first to introduce APIs (Application Programming Interfaces²) as part of open banking.³ The fintech was able to complement its existing business with the ability to direct its customers to a partner’s products that meet their complementary needs: “With the integration of open banking APIs with a [PARTNER] bank...we enable access to other products to our customers...beyond those we offer.” This last example also highlights another type of approach adopted by fintechs in the development of OA: partnerships with long-established banking and financial institutions, which we discuss below.

The behaviors observed above correspond to the hyper-agile test-and-learn approach common among startups (Sosna et al., 2010), whereby they seek to change the status quo by taking advantage of experiences accumulated over time to develop innovative capabilities. For Sosna et al. (2010), innovation in digital activities should indeed be considered a process of trial and error that eventually loops back, with exploration and exploitation activities reinforcing each

² An API is a communications interface through which computer software provides services to other software, which facilitates data communication between applications.

³ The term is being adopted in Europe and globally to describe a more open interaction between banks and fintechs in providing banking services (Döderlein, 2018).

other. This type of behavior seems to be characteristic of sequential ambidexterity, whereby a fintech continuously reconfigures its existing resources and competencies to counteract inertia. This process of improvement is crucial to satisfying customers and building loyalty, which is a determining factor when faced with the challenge of acquiring an online audience for fintechs. This is a major challenge for these new companies if they want to establish their credibility, especially if they want to exist alongside long-established firms.

Partnerships with Historical Actors (Network Ambidexterity)

Access to partner resources is generally considered a driver of innovation and learning (Almeida et al., 2003; Schildt et al., 2005). Startups' size and resource limitations also make them more prone to forming ties with different external actors that help them overcome internal shortcomings (Macron & Duarte Ribeiro, 2021). All the observed fintechs reported being able to initiate and maintain partnerships to enable exploitation and exploration. The mobilization of external partners includes partnerships with long-established banking and financial institutions. Indeed, fintechs seem to have recognized the obstacles to their development and the advantages they can gain from working with long-established companies. All the interviewees considered cooperation with more established companies mutually beneficial.

Long-established companies still hold many advantages over fintechs: established trust with their customers (Dhar & Stein, 2017), an abundance of customer data (Brodsky & Oakes, 2017), broad market experience (Zalan & Toufaily, 2017), as well as their considerable financial means. Banks also take advantage of existing processes, such as risk management, experience working under constraining regulatory (despite being likely to stifle innovation potential), and data security (Bratanu, 2017). According to one respondent, in addition to being able to raise capital through project financing, the main benefit of working with long-established companies is "direct access to existing customers and distribution channels." This allows fintechs to bypass

not only the challenges of developing a customer base, but also the challenge of increasing trust and brand awareness. According to the respondents, access to bank customers can provide access to new or underserved customer segments for which some of the traditional companies' services have been too expensive or otherwise exclusive but that fintechs can offer more efficiently. Moreover, while fintechs enjoy the benefits of collaborating with more established companies, the latter equally benefit from outsourcing their innovation processes to fintechs (Alänge & Steiber, 2018), which is characteristic of network ambidexterity (McNamara & Baden-Fuller, 1999).

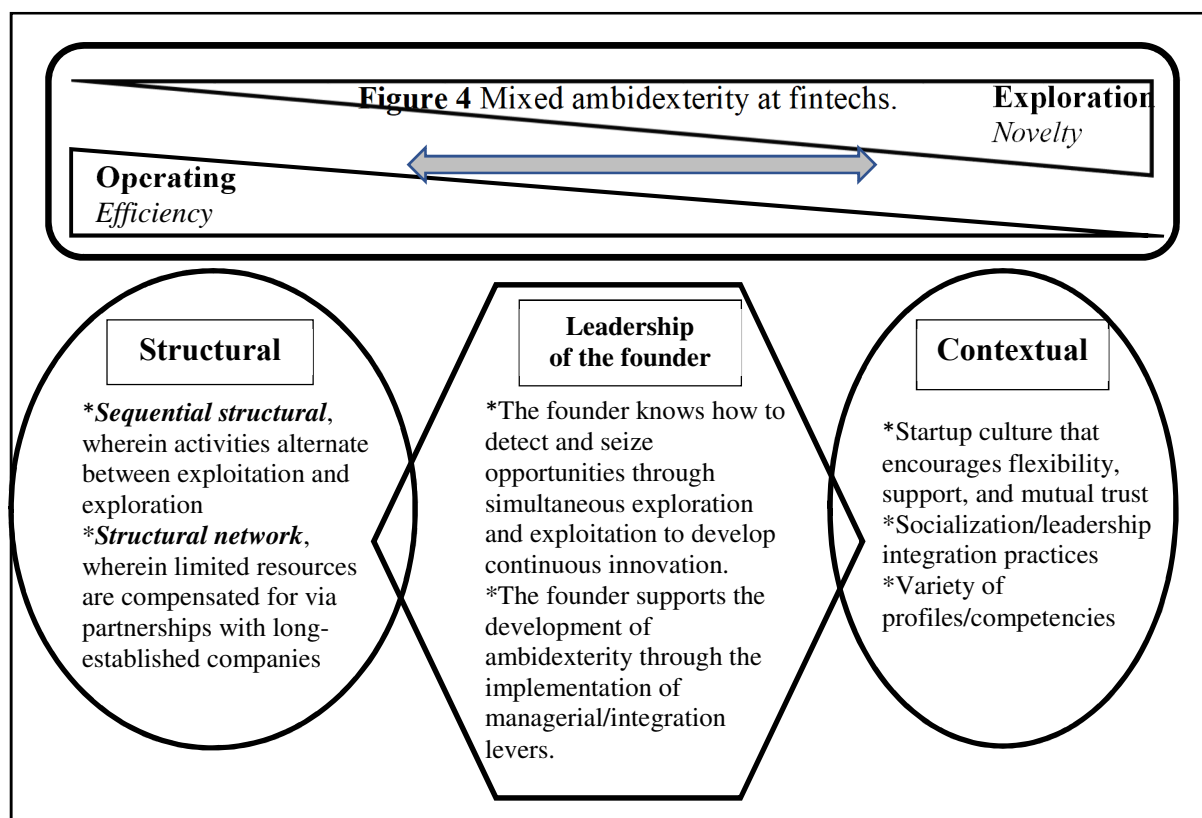
Network ambidexterity reconciles exploitation and exploration activities via partnerships between long-established companies (i.e., historical banking and financial institutions) that focus on exploitation of their core business practices and startups (i.e., fintechs), which are more efficient at engaging in exploration. This solution borrows heavily from open innovation schemes that are externally oriented (via a network of partners) or based on a hybrid scheme that combines the internal and external networks (via incubation in particular) (Brion et al., 2007). This desire for openness among fintechs seems to be linked to an awareness of internal resource limitations (Macron & Ribeiro, 2021) that prompts them to search for external contributions in the form of knowledge and experience that can help compensate for these limitations (Lucena & Roper, 2016). This observation is in line with that of Brem (2017) and Lubatkin et al. (2006), who point out that given their smaller size and limited resources, startups would be unable to achieve ambidexterity through a structural separation of activities. They suggest reconciling exploration and exploitation activities via an interorganizational perspective, such as joint ventures, alliances, and partnerships, rather than an internal separation of activities.

Discussion: Emergence of Mixed Ambidexterity

This study's findings demonstrate that fintechs combine exploration and exploitation innovations through mixed ambidexterity—that is, a mixture of structural sequential, structural contextual, and network-based ambidexterity. Structural ambidexterity, which involves the physical separation of operational units within an organization (Tushman & O'Reilly, 1997), is difficult to apply in the fintech context. Indeed, given their relatively small size and limited resources, fintechs are forced to work within their ecosystem and, therefore, within a network, by combining exploration and exploitation activities. This translates into working in a network to combine exploration and exploitation activities. This observation is further supported by the fact that, in the broader context of the digitization of activities in contemporary organizations, organizational boundaries are no longer so clear, as exploration and exploitation can take place anywhere and at almost any time (Turner et al., 2015). For example, work models such as virtual teams fostered by digital development and work-from-home (the pertinence of which was particularly highlighted during the COVID-19 pandemic), as well as the ubiquity of mobile technologies (e.g., laptops, smartphones, and tablets) that are almost always connected, allow for degrees of organizational fluidity and flexibility that were not previously possible (Papachroni et al., 2015). We therefore argue that adherence to the mainstream scientific discourse of a separation between exploration and exploitation limits our understanding of how ambidexterity is developed in organizations. Drawing inspiration from Farjoun (2010), we believe that exploitation and exploration should not be viewed as mutually exclusive but as complementary practices.

Our conception of OA aligns with recent research that argues for an active and diverse role for individuals in the pursuit of OA (Mom et al., 2019; Zimmermann et al., 2020), with, in this context, an important role to be played by the organization's management to foster such a context. Accordingly, we propose the idea of mixed ambidexterity, where founders/managers manage the appropriate balance between exploration and exploitation, depending on his

leadership style (Figure 4). This conception is consistent with previous studies that have described leadership practices as an inevitable supporting factor in the implementation of ambidexterity (O'Reilly & Tushman, 2013; Raisch & Birkinshaw, 2008; Volery et al., 2013; Yacoubi & Tourabi, 2020). As Moran and Ghoshal (1999) observed, managers in organizations are “more than just players in a game who allocate resources efficiently. They are also powerful levers that enable individuals in the organization to productively challenge institutional market forces” (p. 391).



In this study, we focused on the founder-manager because small companies like fintechs are defined by their founders. The founders play a key role in the management of these types of entities. The founder is the actor who determines the exploration and exploitation of entrepreneurial opportunities that can allow his business to become ambidextrous. We propose the concept of the ambidextrous entrepreneur to designate this creator whose abilities make it

possible to explore and exploit entrepreneurial activities simultaneously. Ambidextrous entrepreneur is capable of switching between these two activities. This ability leads to the mobilization his leadership qualities. Ambidextrous entrepreneur is leader due to his ability to share his visions and involve his collaborators in organizational processes. He is also a leader due to his openness capabilities, networking and interpersonal, and is ability to build relationships with external players (customers, other fintechs in the ecosystem, and historical banking and financial institutions) and internal collaborators. Finally, if organizational ambidexterity is widely advanced in the literature as an explanatory factor of long-term performance (Cho et al., 2020; Lampert & Kim, 2018; Su et al., 2017), then we can recognize ambidextrous entrepreneur is individual capable of sustaining the success of his entrepreneurial projects.

Conclusion

In this article, the mobilization of the theoretical framework of organizational ambidexterity (Duncan, 1976; March, 1991; Smith & Tushman, 2005; Tushman & O'Reilly, 1997) made it possible for us to put into perspective the behavior of fintech startups in conducting exploration and exploitation activities in an entrepreneurial context. While the literature on OA supports a separation between exploration and exploitation, thus isolating emerging activities from existing ones (Alänge & Steiber, 2018), our findings indicate a need for a combination of both types of activities through the development of mixed ambidexterity—that is, a mixture of sequential, contextual, and network-based ambidexterity. The combination of exploration and exploitation activities should allow fintechs to remain competitive over the short term through incremental innovations and to survive and thrive over the long term by seizing emerging opportunities in their surrounding environment, driven in particular by the development of digital technologies, such as Blockchain, Big Data, and artificial intelligence.

The contributions of this study can be approached on two levels: theoretical and managerial. On the theoretical level, we extend recent work (Balboni et al., 2019; Korpysa, 2021; Müller et al., 2019; Sinha, 2015) on how OA develops in startups, particularly during their growth phase. Notably, Sinha's (2015) work explicitly highlights the positive impact of the founder's leadership and the complementary skills of the startup's team in dealing with the conflicting demands of exploration and exploitation. Our study answers the call for empirical research on the ambidextrous behavior of entrepreneurs (Koubaa, 2017) and team-based startups (Brem, 2017). In addition, our study contributes to the understanding of the processes of managing ambidexterity through the observation of micro-foundations (Felin et al., 2015). Indeed, OA is conditioned by individual behaviors (Koubaa, 2017). However, most research on ambidexterity has mainly focused on the macro-organizational dimension in the management of the exploitation–exploitation equilibrium (Čirjevskis, 2019; Volery et al., 2013). The present study aimed to consolidate the debate concerning the roles of actors involved in the development of OA through their individual capacities and practices. More specifically, we aimed to broaden the scope of the academic debate around the leadership of the founders and managers of fintechs, thus identifying some mechanisms at play in the management of ambidexterity in the context of innovation. Therefore, the research supports arguments in favor of considering the individual level of ambidexterity analysis (e.g., Caniëls & Assen, 2019; Kin et al., 2018; Prieto & Perez Santana, 2012). Several calls from researchers have requested more work in this direction (Caniëls et al., 2017; Caniëls & Assen, 2019). Our findings thus inform the contemporary debate on how to stimulate individual ambidexterity in entrepreneurial organizations. Understanding how individual ambidextrous behaviors emerge may indeed provide insight into how organizations can cope with the seemingly conflicting but necessary goals of ambidexterity (Lewis & Smith, 2014; Papachroni et al., 2015). Another contribution of this research lies in reinforcing the idea that the different forms of ambidexterity are not in themselves pure forms

(Brion et al., 2007) but can be approached through a mixed formulation. We therefore respond to recently expressed concerns in the literature that advocate for an integrated approach to organizational ambidexterity to achieve a better operationalization of this concept (Agostini et al., 2016; Fourné et al., 2019; Ossenbrink et al., 2019; Zimmermann et al., 2018).

From a managerial perspective, our findings help account for the implications of OA explained by the heterogeneity of industries and environmental particularities (D'Souza et al., 2017; Junni et al., 2013). Particularly in a high-tech context, where fintechs' resources are limited and the environment is hyper-dynamic and competitive, the findings provided insight into how fintechs attempt to adjust their existing practices. They implement a process of exploring new opportunities to adapt to a dynamically changing competitive environment. We therefore highlighted some principles for managing ambidexterity that allow for the combination of exploration and exploitation in entrepreneurial organizations. By describing these principles, we provide guidance for fintech managers as they develop strategies for exploring and exploiting an organization's internal and external contingencies. Indeed, fintechs are facing the challenge of gaining and retaining a foothold in an environment still dominated by the larger, more established institutions in the banking sector, not to mention the internet giants (or GAFAs – Google, Amazon, Facebook, Apple) that are increasingly taking up market share.

This study is not without its limitations. In particular, it is based on data from a unique cultural context, namely the French fintech ecosystem. While this context is relevant from a theoretical and managerial perspective, the results may not be completely generalizable to other cultural contexts. Therefore, future research could move toward integrating data from other contexts. Furthermore, although we interviewed founders/managers, we did not interview lower-level collaborators; a more holistic approach to data collection would strengthen research and open up new perspectives on the bottom-up issues that characterize attempts to foster contextual ambidexterity. Indeed, although clear signs of cooperation seem to appear between the upper

level and other fintech collaborators, the stability of this configuration cannot be taken for granted. However, based on the current findings, we believe that such a setup can be reasonably assumed to be the final form of ambidexterity in fintechs, at least in the medium term. The validity of such a hypothesis should, however, be tested by future research. Although the role of ambidexterity as an antecedent of organizational sustainability is in our view sufficiently established, the actual mechanisms linking ambidextrous capabilities to the development of effective business practices should be explored through more direct investigations in future research.

Ambidexterity also leads to laying the foundations for a research path centered on the “mixedness” of ambidexterity identified in the mobilization of exploration and exploitation capacities. This “mixedness” should be explicitly investigated in future research by examining the ways in which it is organized in entrepreneurs’ agendas. Since “mixedness” also refers to the combination of short- and medium-term activities (exploitation) and the creation of a long-term vision (exploration), how is it operationalized in entrepreneurs’ daily lives? Finally, the “connectionist” approach (networking) opens up other avenues that join existing scientific work on the development of networks, mobilizing the theory of social capital, for example (Bourdieu, 1984; Coleman, 1988; Putman, 1995). These are all avenues that could be explored in future research.

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