Management international
International Management
Gestiòn Internacional

Exploring the impact of dynamic capabilities on entrepreneurial orientation in healthcare organizations: Findings from symmetric and asymmetric modeling

Exploration de l'impact des capacités dynamiques sur l'orientation entrepreneuriale des établissements de santé : résultats de la modélisation symétrique et asymétrique

Exploración del impacto de las capacidades dinámicas en la orientación empresarial de los establecimientos de salud: resultados de la modelización simétrica y asimétrica

Arafet Bouhalleb and Karim Messeghem

Volume 28, Number 6, 2024

URI: https://id.erudit.org/iderudit/1115327ar
DOI: https://doi.org/10.59876/a-gygn-yawn

See table of contents

Publisher(s)

HEC Montréal
Université Paris Dauphine

ISSN

1206-1697 (print)
1918-9222 (digital)

Explore this journal

Cite this article

Bouhalleb, A. & Messeghem, K. (2024). Exploring the impact of dynamic capabilities on entrepreneurial orientation in healthcare organizations: Findings from symmetric and asymmetric modeling. *Management international / International Management / Gestiòn Internacional*, *28*(6), 7–20. https://doi.org/10.59876/a-gygn-yawn

Article abstract

This work considers strategic flexibility (SF), structural flexibility (SX) and information acquisition (IA) as dynamic capabilities that promote entrepreneurial orientation in the health sector. Based on a quantitative survey carried out with managers of healthcare organizations in France, we demonstrate that IA positively impacts EO and that SF mediates the IA–EO relationship. The findings also indicate that SX moderates the effect of SF on EO. Our research has relevant theoretical implications because it extends the entrepreneurship literature through a novel focus on EO determinants in the healthcare sector. Practical implications for managers and decision-makers are also noted. The findings offer insights to healthcare care managers that will allow them to review the management method to fully involve and engage teams and to be more entrepreneurial.

Exploring the impact of dynamic capabilities on entrepreneurial orientation in healthcare organizations: Findings from symmetric and asymmetric modeling

Exploration de l'impact des capacités dynamiques sur l'orientation entrepreneuriale des établissements de santé : Résultats de la modélisation symétrique et asymétrique

Exploración del impacto de las capacidades dinámicas en la orientación empresarial de los establecimientos de salud: resultados de la modelización simétrica y asimétrica

Arafet Bouhalleb
LED Université Paris 8, France, Le LaRA
ICD Business School, IGS-groupe, Paris, France
arafet.bouhalleb@gmail.com

Karim Messeghem
University of Montpellier
karim.messeghem@umontpellier.fr

ABSTRACT

This work considers strategic flexibility (SF), structural flexibility (SX) and information acquisition (IA) as dynamic capabilities that promote entrepreneurial orientation in the health sector. Based on a quantitative survey carried out with managers of healthcare organizations in France, we demonstrate that IA positively impacts EO and that SF mediates the IA–EO relationship. The findings also indicate that SX moderates the effect of SF on EO. Our research has relevant theoretical implications because it extends the entrepreneurship literature through a novel focus on EO determinants in the healthcare sector. Practical implications for managers and decision-makers are also noted. The findings offer insights to healthcare care managers that will allow them to review the management method to fully involve and engage teams and to be more entrepreneurial.

Keywords: Dynamic capabilities; entrepreneurial orientation; fsQCA; Structural equation modeling (SEM)

Résumé

Ce travail considère la flexibilité stratégique (SF), la flexibilité structurelle (SX) et l'acquisition d'informations (IA) comme des capacités dynamiques qui favorisent l'orientation entrepreneuriale dans le secteur de la santé. Sur la base d'une enquête quantitative menée auprès de responsables d'établissements de santé en France, nous démontrons que l'IA a un impact positif sur l'EO et que la SF joue un rôle de médiateur dans la relation entre l'IA et l'EO. Les résultats indiquent également que SX modère l'effet de SF sur EO. Notre recherche a des implications théoriques pertinentes car elle élargit la littérature sur l'entrepreneuriat en mettant l'accent sur les déterminants de l'EO dans le secteur de la santé. Elle a également des implications pratiques pour les gestionnaires et les décideurs. Les résultats offrent des perspectives aux responsables des établissements de santé qui leur permettront de revoir leurs méthodes de gestion afin d'impliquer et de faire participer pleinement les équipes en adoptant une approche plus entrepreneuriale.

Mots-clés : Capacités dynamiques; orientation entrepreneuriale; fsQCA; les méthodes d'équations structurelles (MES)

Resumen

Este trabajo considera la flexibilidad estratégica (SF), la flexibilidad estructural (SX) y la adquisición de información (IA) como capacidades dinámicas que promueven la orientación empresarial en el sector sanitario. A partir de una encuesta cuantitativa realizada a directivos de organizaciones sanitarias de Francia, demostramos que la AI influye positivamente en la EO y que la FE media en la relación IA-EO. Los resultados también indican que la SX modera el efecto de la SF en la EO. Nuestra investigación tiene implicaciones teóricas relevantes, ya que amplía la literatura sobre iniciativa empresarial mediante un enfoque novedoso sobre los determinantes de la EO en el sector sanitario. También se observan implicaciones prácticas para directivos y responsables de la toma de decisiones. Las conclusiones ofrecen ideas a los gestores de la asistencia sanitaria que les permitirán revisar el método de gestión para implicar y comprometer plenamente a los equipos y ser más emprendedores.

Pour citer cet article : Bouhalleb, A. & Messeghem, K. (2024). Exploring the impact of dynamic capabilities on entrepreneurial orientation in healthcare organizations: Findings from symmetric and asymmetric modeling. *Management international*, *28*(6), 7-20.

DOI: https://doi.org/10.59876/a-gygn-yawn

Over the last decades, the health sector has faced significant changes in terms of costs and resources and technological advances (Adams, 2016; Chahal *et al.*, 2019; Haschar-Noé and Basson, 2019). In France, this sector is based on multiple structures and characterized by the involvement of various medical, paramedical, technical, administrative, and social actors—and it is considered a landscape for entrepreneurship and innovation (Gaudron, 2020; Nobre, 2013). The French health sector is under intense pressure to change its management. Hospitals, for example, have been subject to new reforms to improve their operation. The HPST[1] law of 2009 clearly defines a new health and medico-social organization. This law invites the regional health agencies to support local actors' mobilization capacities, recognize their competencies, and sign local health contracts (LHC), ensuring the articulation between regional projects and local action (Honta and Basson, 2017). This sector is also characterized by a hybridity of organizations and professions (Gallouj *et al.*, 2015). Similarly, the boundaries between the private and public sectors are gradually disappearing (Emery and Giauque, 2014), and public-private partnerships and the pooling of resources are developing to promote technological and social innovations and prevent individual risks (Haschar-Noé and Basson, 2019).

Furthermore, the COVID-19 pandemic has brought about a significant transformation, as changes emerge with the rise of innovations for contactless services and operational processes to improve organizational agility (Corond *et al.*, 2020).

With the increase in innovations, healthcare organizations such as hospitals, clinics, and nursing homes have undergone transformations and radical changes at both the medical and organizational levels. The medical shift concerns innovation in products and technologies and medical and therapeutic innovation that translates into treatments for better care or to deal with novel diseases (Nobre, 2013). Furthermore, entrepreneurial orientation (EO), as reflected in innovativeness, proactiveness, and risk-taking, seems particularly important in these organizations. It enables them to deal with the rapid development of technologies and users' needs for a higher quality of care and service. EO is also a way to improve patients' healthcare, raising innovation and transforming these organizations. From an organizational perspective, it provides managers with tools to strengthen the use of their resources and capabilities (Lages *et al.*, 2017).

Despite developing an entrepreneurial culture in healthcare organizations at the managerial and organizational levels (Simonet, 2013), few studies explain the factors that promote EO (Paula Monteiro *et al.*, 2019). To bridge this gap, this study investigates the role of dynamic capabilities (DCs), expressed through information acquisition (IA), strategic flexibility (SF), and structural flexibility (SX), in promoting EO in the French healthcare sector.

1. LOI n° 2009-879 du 21 juillet 2009 portant réforme de l'hôpital et relative aux patients, à la santé et aux territoires

DCs are defined as "the ability of an organization to integrate, build and reconfigure internal and external competencies to cope rapidly with changes in the environment" (David et al., 1997, p. 516). Scholars have demonstrated that DCs are associated with entrepreneurial behavior by facilitating a sense of opportunities and threats, seizing opportunities, and transforming them to maintain competitiveness (Teece, 2007; 2014). This dynamic is strongly present in healthcare organizations undergoing evolution on all levels, prompting managers to rethink their operations by restructuring different services to address internal and external pressures.

Therefore, we aim to analyze the impact of these DCs on the development of EO based on a quantitative study carried out with 133 managers of healthcare organizations in France. We test our model using structural equation modeling (SEM) and fuzzy set qualitative comparative analysis (fsQCA). The results provide interesting insights and offer three main contributions to the literature. Our first contribution is enriching the DC and EO literature by empirically confirming the significant role of these capabilities in developing entrepreneurial activities.

Second, using DC theory enables us to better understand how entrepreneurial capabilities such as innovativeness, proactiveness, and risk-taking manifest in organizations by configuring their internal and external competencies. This study contributes to the debate on EO antecedents by linking the three dynamic capabilities (IA, SF, and SX), which have been gaining interest in the management and entrepreneurship literature.

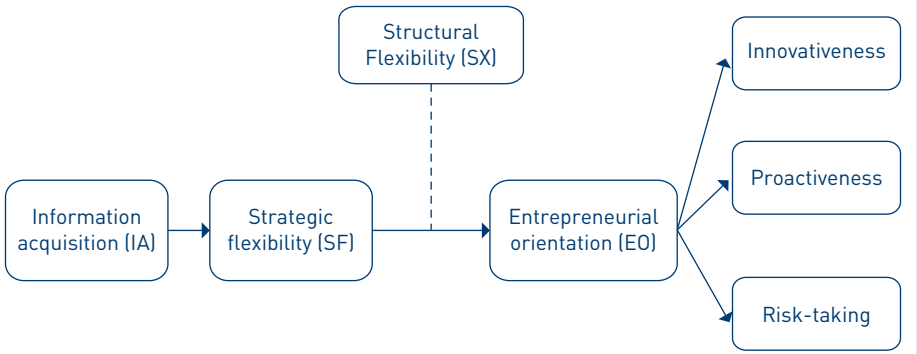
Third, the findings contribute to the emerging field of EO research related to healthcare organizations (Chahal *et al.*, 2019, Lages *et al.*, 2017, Miller and French, 2016). Prior work addressing the antecedents of EO in the service sector has been scant in general but more specifically in the healthcare sector (e.g., Martens *et al.*, 2016; Vecchiarini and Mussolino, 2013). This study contributes to this stream of research by proposing DCs as critical determinants of EO. Through its findings, the study offers managerial implications for healthcare managers, who are fundamentally concerned about the reinvention of their organizations in a dynamic environment.

The rest of this article is organized as follows. Section 2 outlines the relevant arguments on the proposed relationships among IA, SF, SX, and EO to develop the hypotheses. Section 3 presents the methodology and research design, while Section 4 discusses the proposed model's results. Finally, Section 5 highlights the contributions, limitations, and directions for future research.

Theory and hypotheses

The focal point of the study is to investigate the role of IA, SF, and SX in developing EO in healthcare organizations. This section discusses the theoretical framework and hypotheses.

FIGURE 1
Conceptual Model



Entrepreneurial orientation (EO)

EO refers to the organization's strategic position toward entrepreneurial behavior at the individual and organizational levels (Wales *et al*., 2020). The EO literature has significantly advanced during the past decade regarding theoretical development and outcomes (Covin and Wales, 2019; Ferreira *et al*., 2019). Notably, its conceptualization has been the subject of several studies (Anderson *et al*., 2015; Covin and Wales, 2018). Since the work of Covin and Slevin (1989), several conceptualizations have emerged. Lumpkin and Dess (1996) defined EO using five dimensions: innovativeness, proactiveness, risk-taking, autonomy, and competitive aggressiveness. The past decade was also characterized by the development of this conceptualization work (Anderson *et al*., 2015;). Anderson *et al*. (2015) depicted it in terms of two dimensions: (1) entrepreneurial behaviors, which are mainly based on innovativeness and proactiveness, and (2) managerial attitude toward risk, which focuses on risk-taking.

Despite these diverse conceptualizations, there is a near consensus on the level of the three dimensions forming EO: (1) innovativeness is defined as the efforts made by an organization in terms of pursuing new products, processes, or business models; (2) proactiveness entails how an organization reacts to different trends in its environment by introducing new methods and technologies, etc. (3), and risk-taking is the willingness to take advantage of opportunities with a reasonably high chance of failure (Covin and Slovin, 1989, Miller, 1983)

Furthermore, some recent studies have focused on better understanding the factors that promote EO (e.g., Eshima and Anderson, 2016; Paula Monteiro *et al*., 2019). Scholars argue that internal and external factors may influence EO. It has been argued that EO is internally facilitated by the firm's structure (Green *et al*., 2008) and the firm's efforts to generate new alternatives and frameworks that promote strategic adjustments (Gao *et al*., 2018). EO may be externally influenced by the environment's complexity and dynamism (Wales *et al*., 2013), political and business ties, and social capital (García-Villaverde *et al*., 2018).

In this part, we present our hypotheses. First, we discuss the influence of information acquisition on entrepreneurial orientation.

Information acquisition (IA) and entrepreneurial orientation (EO)

IA is the organization's capability to collect and assimilate valuable information from internal and external sources. Internally, organizations collect and incorporate helpful information from reports, databases, internal analyses, and managers' previous experiences (Santos-Vijande *et al*., 2012). Externally, organizations search for information to anticipate stakeholders' needs, new tendencies, and potential opportunities (Parra-Requena *et al*., 2015). IA is part of scanning the environment and monitoring its activities (Keh *et al*., 2007).

Studies have shown that information, more specifically, the acquisition of new information, is critical in identifying entrepreneurial opportunities. The acquisition of information can take many forms, such as the discovery of new technology to better meet the user's needs, new work reforms, or new sources of funding (e.g., Rezazadeh and Nobari, 2018). Nadkarni and Barr (2008) reported that managers interpret their dynamic environment to make sense of events and changes and are open to new information—enabling them to identify and pursue opportunities and new ways of performing activities. IA is vital to developing the entrepreneurial mindset's first steps and is especially important in determining opportunities. Accordingly, studies assert that organizations with effective mechanisms to assimilate external resources and integrate them into the decision-making process are more favorable in innovative activities (Crescenzi and Gagliardi, 2008).

Similarly, in the entrepreneurial literature, information is associated with entrepreneurial alertness. Tang *et al*. define alertness as *"consisting of three distinct elements: scanning and searching for information, connecting previously disparate information, and making evaluations on the existence of profitable business opportunities"* (Tang *et al*., 2012, p. 77).

From a dynamic capability perspective, IA facilitates the early detection of fundamental changes, thus providing managers with additional time to react to external pressures (Teece and Leh, 2016).

In the health sector, IA facilitates the understanding of changes that affect the governance of health institutions, their organizational level, and their professions (Tissioui *et al*., 2016). The objective is to develop user-centered innovation models where patients and health professionals are at the center of the experimentation. This requires new ways of accessing data (Kletz and Marcellin, 2019).

IA facilitates this process by providing signals for managers to adapt their decision to respond to patients' and users' needs. This adaptation process is ensured not only through the firm's internal resources but also through its ability to acquire information from different sources of critical stakeholders.

More importantly, Teece (2014) saw the DC framework as an entrepreneurial approach that includes (1) the internal facet related to the strategy and the critical resources and (2) the external facet that organizes the firm–external partners' relationship. It focuses on information and knowledge acquisition to facilitate the discovery, evaluation, and exploitation of opportunities. Therefore, organizations with a high level of IA have a solid potential to attract and exploit the external resources inherent in their networks to capitalize on emerging opportunities and develop their EO.

In light of these arguments, the following is posited:

H1: Information acquisition has a positive impact on entrepreneurial orientation.

In the following, we analyze the mediating effect of strategic flexibility on the IA-EO relationship. This part will be divided into three subhypotheses: (H2a), which addresses the impact of IA on SF; (H2b), which concerns the effect of SF on EO; and (H2c), which focuses on the mediating role of SF.

Mediating effects of strategic flexibility (SF)

SF refers to the organization's ability to manage environmental risks by adopting a reactive or proactive stance regarding environmental threats and opportunities (Grewal and Tansuhaj, 2001). Scholars assess that SF is vital for organizational adaptation because it helps managers deal with internal and external changes (Brosovic, 2018). It facilitates the transformation of strategic choices by helping the organization respond to change (Sanchez, 1995). At this level, Volberda (1996) distinguishes two types of SF. Internal SF is the management's capability to adapt the organization to new environmental conditions. External SF is defined as the organization's ability to influence the environment through proposing new technologies or new products and services but also through anticipation.

Regarding its antecedents, previous studies arising from different disciplines have identified a set of factors affecting SF. These can be linked to two types of factors: the strategic orientation of an organization, which can be associated with learning orientation (Santos-Vijande *et al*., 2012), absorptive capacity (Volberda *et al*. 2010), knowledge acquisition (Miroshnychenko *et al*., 2020), and organizational design (Herhausen *et al*., 2021). It is important to note that information promotes this dynamic capacity by allowing managers to have a more accurate picture of the functioning of the organization and by adapting their management to the situation.

H2a: Information acquisition has a positive impact on strategic flexibility.

Thus, in a very dynamic context, a high level of flexibility favors entrepreneurial behaviors that make anticipating changes and meeting the expectations of various internal and external stakeholders possible. Li *et al*. (2008) argue that entrepreneurial organizations, through SF, are more oriented toward innovative practices than traditional ones. Therefore, this capability facilitates the implementation of innovative strategic initiatives and innovation in terms of products and services (Fan *et al*., 2013)

Developing this capability within an organization aims to identify changes and propose suitable answers by deploying and configuring resources and developing knowledge and skills. Patel *et al*. (2012) state that flexible organizations are more oriented toward understanding uncertainty factors to integrate them into decision-making. Similarly, SF enables organizations to enhance the repertoire of managerial capabilities and grants them the speed to mobilize them.

H2b: Strategic flexibility has a positive impact on entrepreneurial orientation.

SF is also facilitated through other dynamic capabilities necessary for its development within the organization and for its survival. Its interdependence with other variables has been explained well in the work of Miroshnychenko *et al*. (2020), who highlight the impact of absorptive capability on its development. They assert that flexibility is impacted primarily by the ability to acquire and use computerized news. Flexible organizations can proactively identify environmental changes by improving their IA activities. Analyzing their environment, technological changes, and relationships between stakeholders are always helpful because they provide an essential knowledge source (Roy and Thérin, 2008). The information and knowledge-gathering process allows organizations to anticipate market tendencies and renew strategic responses in light of new opportunities (Santos-Vijande *et al*., 2012).

Thus, entrepreneurial practices depend on the organization's emphasis on the innovative strategy-making process (Anderson *et al*., 2015). EO can partly explain the strategic actions that permit adjustments to environmental changes. Furthermore, this strategic orientation can be used to respond to restructuring internal resources to ensure a better match with external changes. Resource-based view (RBV) proponents suggest that knowledge-based resources help organizations achieve sustainable competitive advantage (Dai and Si, 2019). These resources may facilitate organizations' internal entrepreneurial activities through the acquisition and sharing processes. Additionally, Wiklund and Shepherd (2005) argue that EO depends on combinations of internal resources with environmental changes. SF is recommended to ensure the fit between two constraints: resources and change.

Furthermore, a growing body of literature considers entrepreneurial behavior a product of management practices' capabilities. The methods that promote this view include the firm's strategic management (Barringer and Bluedorn, 1999), and learning (Sirén *et al*., 2016). According to Lumpkin and Dess (1996), EO is analogous to Stevenson and Jarillo's (1990) concept of entrepreneurial management. Similarly, Anderson *et al*. (2015) state that EO relates to entrepreneurial behaviors and managerial attitudes.

In sum, entrepreneurial organizations are defined through decision-making practices oriented toward pursuing opportunities with uncertain outcomes, creating a culture of innovation, and implementing an offensive strategy.

In light of these arguments, the following is posited:

H2c: Strategic flexibility positively mediates the information acquisition–entrepreneurial orientation relationship.

Finally, we analyze the moderating effect of structural flexibility (SX) on the SF-EO relationship.

The moderating effect of structural flexibility (SX)

SX is the ability of an organization to adapt its organizational structure and its decision and communication processes to new conditions and to reconfigure different resources to perform better further actions (Anser *et al*., 2020). It is considered a dynamic capability that enables organizations to reconfigure their structure and their communication processes (Volberda, 1998) to adapt decisions to environmental change.

SX also facilitates resilience to change, especially in sectors characterized by strong dynamism, such as healthcare. Healthcare organizations require a certain degree of flexibility to adapt to patients' and customers' expectations and respond promptly to their needs (Brozovic *et al*., 2016). Accordingly, SX facilitates introducing organizational changes in response to new circumstances, such as crises or competitive pressure (Huber, 1990). Since 2010, the health sector in France has seen many collaborative spaces aimed at encouraging innovation, whether in hospitals or other healthcare structures. The living lab, which aims to strengthen the partnership between private and public actors (companies, universities, users, etc.), is the most impactful space that encourages open innovation. It is a space that allows products and services to be tested in real conditions (Le Chaffotec, 2016).

The COVID-19 crisis has also demonstrated the importance of SX within these organizations through more dynamic coordination between different healthcare providers (Albert-Cromarias and Dos Santos, 2020, Defrancq *et al*., 2020). Several initiatives have been taken to improve interorganizational communication and to encourage collaborations between various partners, such as hospitals and other healthcare organizations. Similarly, the development of flexibility also requires the training of multifunctional teams and the adaptation of control systems to meet different needs. This phenomenon was widely observed in healthcare facilities during the crisis, where managers were forced to rearrange activity flows to ensure resilience.

Previous academic works explain that the organizational structure impacts information flows and the context and nature of interorganizational relationships. The organizational structure specifies the coordination mode, divides powers and responsibilities, and prescribes levels of formality and complexity. Miller and Friesen (1982) note that the structure and decision-making process ultimately have the same goals: to enact control, achieve predictability, and extend collective cognitive abilities. Therefore, these factors enable managers to handle uncertainty and understand environmental complexity.

Entrepreneurial organizations ensure internal coherence between their structure and decision-making processes. On the one hand, the implementation of entrepreneurial actions depends on the strategic behavior of an organization, its strategic choices, and the manager's EO (Anderson *et al*., 2015). On the other hand, it depends on the organizational structure (e.g., Green *et al*., 2008; Wales *et al*., 2013), which is considered a key determinant of entrepreneurial behavior, such as innovation and proactiveness (Green *et al*., 2008). Nahm *et al*. (2003) argue that the organization's structure can facilitate or prevent the implementation of innovations. An organic design enhances product innovation development, while a mechanistic structure enables the execution of product innovation.

Green *et al*. (2008) also discussed the effects of alignment in structure and decision-making processes on the ability to handle changes. They confirmed that this internal coherence enhances the organization's response capability by recognizing relevant signals and information. Subsequently, the organizational structure contributes to the systemic discovery of innovative opportunities through facilitation and motivation (Pittino *et al*., 2016). Thus, SX, as a valuable organizational capability, may facilitate responding to new environmental circumstances, as organizations can evolve their structures by proposing, for example, new structural configurations. Consequently, the potential impact of SF on EO can be powerful in organizations with a high degree of SX.

H3. Structural flexibility moderates the strategic flexibility–entrepreneurial orientation relationship.

Methods

Sample

To test the hypotheses, the study examines empirical data from France's healthcare sector, particularly healthcare organizations, such as hospitals, specialized clinics, and nursing homes. This sector has undergone profound changes for several years, including regulatory, social (aging population, chronic diseases, etc.), financial difficulties, and privatization (Noguera and Lartigau, 2009). To address these dynamic conditions, public and private actors must adapt and anticipate users' needs and innovate in terms of the quality of service and care. At this level, collaborations between hospitals and private organizations have emerged to facilitate the exchange of knowledge and experiences.

This sector provides an appropriate setting to test the relationships between dynamic capabilities (IA, SF, and SX) and EO. In France, the legislative and regulatory context of health policy has experienced changes aiming to modernize and promote innovation by diversifying services and funding sources. It is also characterized by various actors, such as the state and private nonprofit and for-profit commercial actors and associations. Subsequently, this presents conflicting perspectives, along with promising opportunities, with various constraints relating to financial resources, governance, and the size of operators. Similarly, the sector is denoted by the diversity of the proposed activities, such as professions of care, medical-technical, research and innovation, and hygiene quality. Thus, dynamic capabilities are needed to address the complexity and high degree of change (Blanken, 2008; Rechel *et al*., 2009).

A questionnaire was prepared following an exhaustive literature review and was pretested with ten managers to eliminate statistical and semantic issues (Malhotra *et al*., 1996). Potential respondents were located through databases and professional and personal networks. Consequently, we compiled a database of 981 potential respondents and contacted them by email.

The initial email included a brief presentation explaining the purpose of the research and a detailed questionnaire incorporating all the variables in the study. The second email was a reminder, urging respondents to complete and return the questionnaire. Of the 146 respondents who returned the questionnaire, only 133 could be used for analysis due to missing data. The following characteristics were observed: 60% were women, 40% were men, and the age ranged between 45 and 55 years; the average experience in the field was ten years; and they occupied positions such as directors of the health structure (53%), administrative managers (25%), and heads of medical service (22%). Their operations were principally related to managing i) nursing homes, ii) specialized clinics, and iii) hospitals in France.

Common method bias

Since the data were collected from a single sample, we adopted specific practices to address common method bias. The recommendations of Podsakoff *et al*. (2003) were used to ensure confidentiality and protection of personal data. The questionnaire was divided into several sections based on the variables used in our model (e.g., IA, SF, SX, EO), separated into small paragraphs. The questionnaire was pretested with managers and researchers to ensure its clarity. We used Harman's one-factor test to detect common method bias (Podsakoff *et al*., 2003). We conducted a factorial analysis of all the items used in this analysis. Six factors emerged from this analysis, with an eigenvalue more significant than one and a cumulative variance of 70.7%.

We employed the approach of Cote and Buckley (1987), which consists of comparing several models. In Model 1, all IA, SF, SX, and EO items were loaded on a single model. In Model 2, all items were assigned to their respective construct. Model 3 employed a common latent variable linking all the dimensions used in Model 2.

The findings indicate that Model 1 ($\chi 2/df$= 2.389, NFI= 0.69, CFI= 0.79, RMSEA=0.1) and Model 2 ($\chi 2/df$=1.436, NFI=0.81, CFI=0.93, RMSEA=0.0057) have a better quality of fit than Model 3 ($\chi 2/df$=4.66, NFI=0.37, CFI=0.418, RMSEA=0.16). The result confirms that common method bias is not a concern in this study.

Construct measurement and validation

All variables in the proposed model were measured using reflective indicators (Appendix I provides a complete list of these items). The SF includes five items adapted from scales by Tsai and Shih (2004), and Vorhies and Morgan (2003). We asked respondents to rate their organizations' levels of expertise in rapidly responding to changes and detecting new opportunities and threats. All items in this construct were measured using a seven-point scale. The reliability was examined using Cronbach's alpha value (α=0.82).

The SX construct was measured using items related to communication between departments and different services, decreasing bureaucracy, and structure flexibility through decentralized decision-making, flexibility in work, communication, and human resources management. The three items were adapted based on Rudd *et al*. (2008). This scale indicated a Cronbach's alpha coefficient of 0.74.

Additionally, five items were employed for the IA construct to measure firms' efforts regarding internal and external IA as adapted from the scale developed by López-Sánchez *et al*. (2011). Respondents rated their level of agreement on a seven-point Likert-type scale (1= strongly disagree; 7= strongly agree). The Cronbach's alpha value (α=0.86) indicated good reliability.

Finally, we measured the EO construct through nine items adapted from previous studies (Covin and Wales, 2012; Hughes and Morgan, 2007) on a seven-point scale (1=strongly disagree; 7=strongly agree). Next, we performed exploratory factor analysis (EFA) and examined the psychometric proprieties of each dimension using Cronbach's alpha (Innov= 0.82; Proac= 0.80 and Risk= 0.83). Table 1 presents the descriptive statistics of the variables.

TABLE 1
Descriptive statistics

Variables	Mean	SD	α	1	2	3	4	5	6	7	8
1.Information acquisition (IA)	4.54	1.552	0.86	1							
2.Strategic flexibility (SF)	5.22	0.929	0.82	0.176*	1						
3.Structural flexibility (SX)	4.26	0.953	0.74	0.091	0.343**	1					
4.Innovativeness (INNOV)	5.06	1.219	0.82	0.108	0.287**	0.337**	1				
5.Proactiveness (PROAC)	5.12	1.092	0.80	0.310**	0.282**	0.223**	0.495**	1			
6.Risk-taking (RISK)	5.08	1.133	0.83	0.254**	0.176*	0.280**	0.449**	0.498**	1		

Statistical techniques

Hypotheses are tested using structural equation modeling (SEM) and fuzzy set qualitative comparative analysis (fsQCA). SEM is a variable-oriented technique that focuses on the net effect of the independent variable on the dependent variable (testing the significance of relationships between variables). It treats the independent variables as competing to explain variation in the dependent variables and relies on the principles of additive effects, linearity, and unifinality (Woodside, 2013). It was conducted to test the causal path's potential, such as the direct, mediating, and moderating effects of the variables under investigation. However, fsQCA was utilized to provide an in-depth understanding of antecedents' complex, nonlinear, and synergistic effects (e.g., IA, SF, and SX on EO). fsQCA is a case-based technique focusing on configurational products (Ragin, 2008). It considers multiple configurations and supposes that an outcome is rarely the result of a single cause, that these causes are rarely separate and that a specific cause can have effects of opposite sign (e.g., negative or positive), depending on the context. It assumes asymmetry between independent and dependent variables and equifinality, in which multiple paths and solutions lead to the same outcome. fsQCA also allows for multifinality, in which identical conditions can lead to different results (e.g., a configuration between SF, SX, and IA can generate a high level of EO or a low level of EO).

Results and analysis

This section discusses the measurement-testing results, followed by the model-testing results.

Measurement testing

The statistical software AMOS 20 was employed, and the maximum likelihood (ML) estimation method was used to avoid normality issues. The model fit was assessed using chi-square (χ^2= 294.938), comparative fit index (CFI=0.938), incremental fix index (IFI=0.939), Tucker-Lewis's index (TLI=0.928), and root mean square error of approximation (RMSEA=0.05) tests, which suggest that the model fits the data. Furthermore, we used confirmatory factor analysis (CFA) with an ML estimation procedure to examine reliability and validity. The first set of the model included IA, SF, and SX. The second set comprised the three dimensions of EO: innovativeness, proactiveness, and risk-taking.

Item IA5, "The members of the organization use informal means to determine about recent events regarding the market, or the environment," was dropped following a preliminary analysis because its loading on the IA construct was very low (0.12), negatively impacting the quality of the model. After its elimination, χ^2 declined from 350.3 to 258.5.

Subsequently, all variables were assessed for reliability and convergent and discriminant validity (Anderson and Gerbing, 1988). Reliability was evaluated by Cronbach's alpha, which all satisfied the recommended threshold of 0.7 (Cronbach, 1951). Regarding composite reliability (Fornell and Larcker, 1981), all variables' coefficients range from 0.78 to 0.89, suggesting satisfactory internal consistency. Validity was assessed using average variance extracted (AVE), in which a value greater than 0.5 confirms validity (Table 2). Additionally, Fornell and Larcker's (1981) approach mandates that the square root of the AVE for every pair of variables must exceed the correlations between the latent variables.

TABLE 2

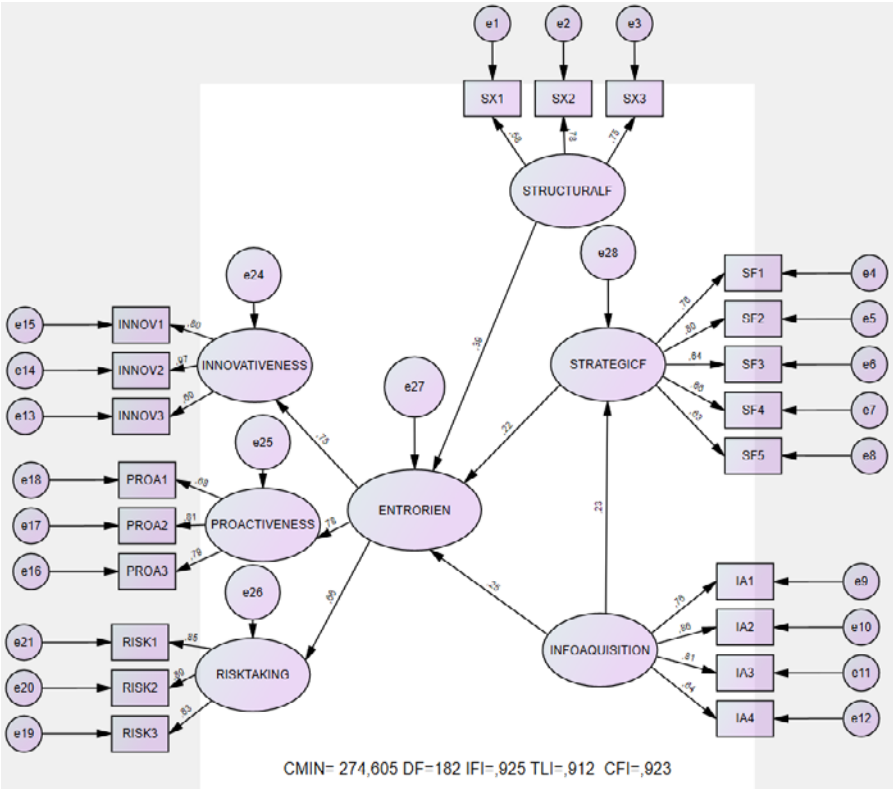
Construct measurement summary—Confirmatory factor analysis and scale reliability

Constructs and items	Factor loading	SE	T-Statistics	AVE	CR	Joreskog's Rho
Information acquisition (IA)				0.68	0.89	0.71
IA1: We collect and use the information generated during organizational changes.	0.74	0.76	1			
IA2: We constantly evaluate the need to adapt to the business environment.	0.85	0.86	9.619			
IA3: We collect information through different means about our competitors' activities.	0.83	0.81	9.187			
IA4: We constantly evaluate the need to change even when there is optimal adaptation to the business environment.	0.64	0.64	7.162			
Strategic Flexibility (SF)				9.59	0.87	0.84
SF1: Entry of new competitors	0.75	0.76	1			
SF2: Change in customers' product/service preferences.	0.79	0.79	8.479			
SF3: Radical technological changes or current technologies' anticipated obsolescence.	0.64	0.63	6.897			
SF4: Important economic changes	0.66	0.66	7.186			
SF5: Detection of new business threats and opportunities	0.64	0.63	6.842			
Structural Flexibility (SX)				0.66	0.85	0.77
SX1: Communicating between departments.	0.58	0.58	1.000			
SX2: Reducing bureaucracy	0.79	0.75	5.693			
SX3: Being structurally flexible	0.73	0.76	5.698			
Entrepreneurial Orientation						
Innovativeness (INNOV)				0.74	0.89	0.72
INNOV1: We actively introduce improvements and innovations in our organization.	0.78	0.80	1.000			
INNOV2: Our organization is creative in its methods of operation.	0.99	0.96	10.991			
INNOV3: Our organization seeks out new ways to do things.	0.59	0.61	7.359			
Proactiveness (PROA)				0.72	0.88	0.78
PROA1. We always try to take the initiative in every situation (e.g.. against competitors. or in projects when working with others).	0.66	0.69	1.000			
PROA2. We excel at identifying opportunities.	0.79	0.81	7.635			
PROA3. We initiate actions to which other organizations respond.	0.83	0.79	7.559			
Risk-taking (RISK)				0.74	0.89	0.73
RISK1: The term "risk" is considered a positive attribute for people in our organization	0.83	0.85	1.000			
RISK2: People in our business are encouraged to take calculated risks with new ideas.	0.91	0.89	10.517			
RISK 3: Our business emphasizes both exploration and experimentation for opportunities.	0.62	0.63	7.359			

Structural model and result

The SEM results indicate that the structural model (Figure 2) is a good representation of the data collected (χ 2 = 274.605, IFI = 0.925; TLI = 0.912, CFI = 0.923). Table 3 synthesizes the structural model based on AMOS by focusing on the standardized path coefficients (β) and their significance (t values).

FIGURE 2
Structural model



The results (t=2.351, p<0.05) support H1, which supposed that IA positively impacts EO. The results also support H2a (t=2.211, p< 0.05), indicating that a greater degree of IA is associated with a high level of SF. H2b suggested that SF has a positive effect on EO. This relationship is confirmed based on the critical ratio (t=1.988, p<0.05).

TABLE 3
Structural model—Standardized path coefficients and robust t values

Specified path	Expected sign	Standardized path coefficients	Robust t value	Results
1. Information acquisition → EO	+	0.15	2.351	0.019*
2. Information acquisition → Strategic flexibility	+	0.13	2.211	0.027*
3. Strategic flexibility → EO	+	0.21	1.988	0.047*

H2c posited the mediating effect of SF on the IA–EO relationship. Following Baron and Kenny's (1986) approach, we checked the three conditions of mediation. Concerning the first condition, the impact of the independent variable, IA, on the dependent variable, EO, must be significant. This condition is fulfilled. The second condition addresses the independent variable's impact on the mediating variable. We previously concluded that IA significantly positively affects SF; therefore, the second condition is also fulfilled. The third condition requires a significant relationship between the mediating and dependent variables. This condition is corroborated as a significant t value (2.231) between SF and EO is observed. Therefore, the mediating role of SF meets the specified requirements. To verify whether it is a partial or complete mediation, we controlled the mediator (SF) and observed that the independent variable (IA) no longer influences the dependent variable (EO) (t= 0.193 and p=0.84). Thus, we conclude that SF completely mediates the IA–EO relationship. Hypothesis H2c is supported.

Moreover, when only the significance of the regression coefficients is analyzed, the results may lead to the confirmation of a statistically erroneous mediating effect. Therefore, examining the significance of this effect and its absolute value is recommended. According to Hayes (2009), it is necessary to mobilize a nonparametric approach through bootstrapping resampling to analyze indirect effects. This method allows for better control of the type I error. Thus, following the recommendations of Preacher and Hayes (2008), we analyzed the importance of indirect effects using a macro for SPSS 10 and extracting confidence intervals. The results of the indirect impact of IA on EO through SF confirmed its validity (Tables 4 and 5).

TABLE 4
Direct effect of IA on EO

Effect	SE	T	P	LLCI*	ULCI**
1.408	0.5413	2.601	0.0104	0.3374	2.479

* Lower limit confidence interval (95%)
** Upper limit confidence interval (95%)

TABLE 5

Indirect effect(s) of IA on EO

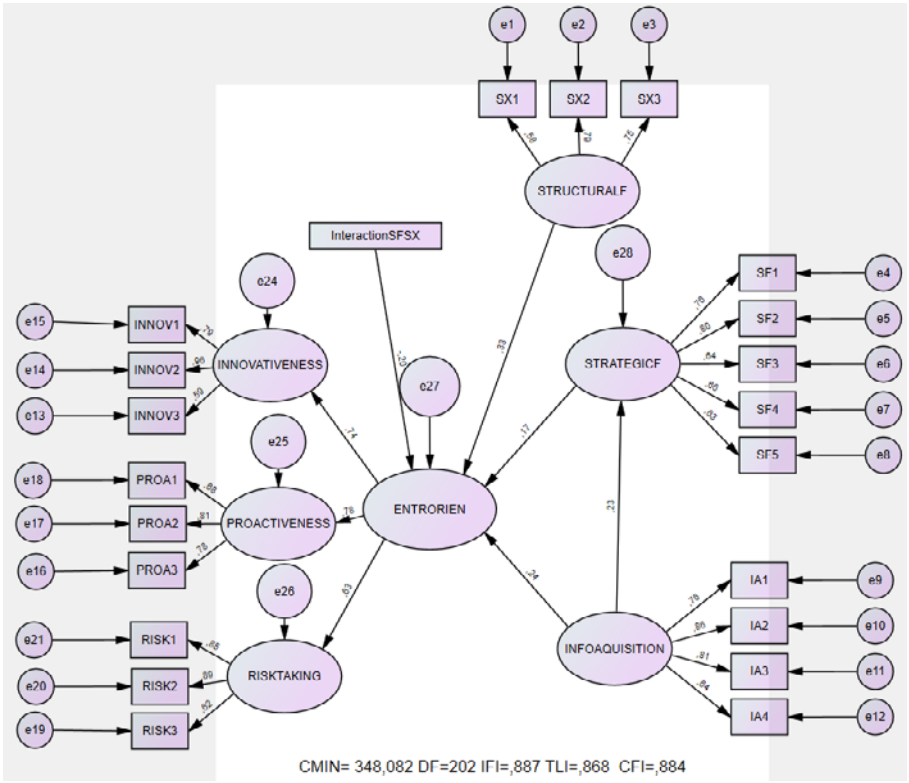
Effect	Mediator	Effect	BootSE	BootLLCI***	BootULCI****
Indirect effect(s) of X on Y	Strategic flexibility	0.3143	0.2467	-.0339	0.9063
Partially standardized indirect effect (s) of X on Y		0.0479	0.0367	-.0053	0.1357
Completely standardized indirect effect (s) of X on Y		0.0479	0.0371	-.0051	0.1367

*** Bootstrap lower limit confidence interval (95%) **** Bootstrap upper limit confidence interval (95%)

Regarding the effect of SX, the results (Figure 3) show that it has a negative and significant moderating effect on the SF-EO relationship (t=-2.091 and p <0.05).

FIGURE 3

Structural model (moderation effect)



fsQCA results

In fsQCA, the calibration of different values is required. In line with previous research, 0.95, 0.5, and 0.05 quantiles were selected to represent full set membership, the crossover point, and no set membership, respectively (Ragin, 2008). Following Ordanini *et al.* (2014), while using the direct calibration method, the following threshold values were used: 5 and 6 for full membership, 3 for the crossover point, and 2 for full nonmembership. The fsQCA software version 3 was used for fuzzy-set calibration.

The next step involves an analysis of the necessity or configuration elements. A condition is considered necessary when its consistency score is above 0.8. Consistency indicates the degree of coherence of a subset relationship. It is analogous to the notion of statistical significance (Schneider and Wagemann, 2010), while coverage measures are analogous to R-square in regression analysis and must be above 0.75 (Ragin, 2000).

TABLE 6

Analysis of necessary conditions for predicting entrepreneurial orientation (EO)

	High		Low	
Configurational Element	Consistency	Coverage	Consistency	Coverage
IA	0.84	0.97	0.7	0.032
SF	0.99	0.96	0.94	0.037
SX	0.92	0.98	0.61	0.026

To compute the degree of sufficiency, the fsQCA algorithm was used to produce a truth table. To avoid including less significant configurations, a frequency threshold of ten observations was adopted (Rihoux and Ragin, 2009), which did not lead to the exclusion of any case in the sample. Subsequently, to identify the configurations of sufficient conditions for organizations to achieve high levels of EO, this study applied the thresholds proposed by Skarmeas *et al.* (2014) for determining sufficiency and coverage: 0.74 and 0.27, respectively. The fsQCA results on sufficiency conditions are presented in Table 6. The analysis produces three configurations leading to a high level of EO.

Table 7 shows that the results of Solution 2a—high levels of IA and SF—provide a high degree of consistency (0.97) and explain an increased number of cases (0.84), indicating that the combination of high levels of IA and SF mainly contributes to high levels of EO.

Solution 3a has the highest degree of consistency (0.98) and the highest number of cases (0.92), which confirms the effect of the combination (SF*SX) on EO.

TABLE 7
Configurations for achieving high EO scores

Solution	IA	SF	SX	Consistency	Raw coverage	Unique coverage
1a	•	•	•	0.84	0.01	0.004
2a	•	•	◦	0.97	0.84	0.05
3a	◦	•	•	0.98	0.92	0.12
Solution coverage	0.980605					
Solution consistency	0.967889					

Discussion

Despite the growing literature in recent years on the determinants of EO, research articulating the impact of different types of dynamic capabilities remains limited. To address this research gap, this study investigated the role of three dynamic capabilities in developing EO in the French healthcare sector—IA, SF, and SX. In light of the results, IA constitutes a critical dynamic capability that favors EO. It feeds decision makers with signals facilitating the understanding of the external environment and adjusting their decisions according to new circumstances. Such an approach enables the generation of strategic choices and innovations at different levels (Herhausen *et al.*, 2021). In our context, as a part of their environmental scanning, healthcare organizations seek innovative information to help them become more entrepreneurial.

Additionally, the SEM results confirm the mediating effect of SF on the IA-EO relationship. Such findings address recent calls in the extant entrepreneurship literature, including Wales *et al.*'s (2021) and Chahal *et al.*'s (2019) appeals for more studies on EO antecedents. Likewise, the findings shed more light on the importance of DCs in developing entrepreneurial activities in healthcare organizations to adjust to demographic, societal, and technological changes.

The results also indicate a significant but negative moderating effect of SX on the SF–EO relationship. This negative effect can be explained by the lack of fit between the organizational structure and strategic decision-making within these organizations. Indeed, the structure can be a handicap to adapting quickly to new conditions and acting in an entrepreneurial way.

Furthermore, using the configuration approach fsQCA, this paper addresses the complexity underlying these relationships, focusing on the healthcare sector. EO is more likely to be associated with various combinations of dynamic capabilities, thus confirming equifinality and complexity.

First, three patterns emerge from our analysis, confirming that entrepreneurial orientation cannot result from a single factor. Instead, it combines a set of factors (e.g., IA+SF and SF+SX). Thus, EO in this sector requires effort at several levels. Individuals, organizations, and institutions must work together to manage constraints (financial, administrative, hierarchical, etc.) to adapt to change and the imponderability of future developments. The development of EO is not a singular fact resulting from managerial behavior but also from an organizational context favoring it. The degree of this entrepreneurial orientation differs between the private and public sectors, as the institutions in these sectors need to be managed similarly.

Second, the results of the fsQCA highlight the importance of strategic flexibility, which is present in the two configurations. This could be explained by the complexity of this sector, which brings together several actors, several professions, and a multitude of innovations to be managed. Managers face a significant challenge in balancing structural and financial constraints with the demands and needs of users. Being flexible facilitates the introduction of new working methods and, above all, a certain agility in decision-making.

Research contributions

The findings provide several critical contributions to the literature on the determinants of EO (Anderson and Eshima, 2016; Gao *et al.*, 2016; Rodrigo-Alarcon *et al.*, 2017), a field of research that remains understudied (Wales *et al.*, 2020). In their bibliometric study on this concept, Wales *et al.* (2020) observed that very little work has been done on the determinants of this strategic posture. They called for mediator–moderator models to identify the interactions between organizational, human, and process factors facilitating EO and translating it into performance.

First, the present research clarifies the interaction between several factors and their contribution to the development of EO within healthcare organizations. The study empirically investigates the direct, mediating, and moderating effects of IA, SF and SX on EO by analyzing simultaneous relationships in a structural equation model, which is novel research in this domain. Furthermore, fsQCA helps provide a more comprehensive understanding of EO antecedents. The aim is to adopt a more holistic method (i.e., configuration analysis) that captures complex interactions leading to EO. We therefore add further evidence to the nascent wider body of works calling for a complex approach when studying entrepreneurial behavior in general (Douglas *et al.*, 2021; Sahin *et al.*, 2019).

Second, our study contributes to the field of management of healthcare organizations. Studying entrepreneurial behavior in these structures sheds light on the factors that can facilitate innovation and change in their management methods. Only a few studies in English have explored the role of specific dynamic capacities in the health field by examining the literature in this field. This study answers theorists' call for a greater understanding of EO in the context of the hospital and healthcare sector (Chahal *et al.*, 2019;), which is characterized by strong entrepreneurial dynamism and profound change (Lages *et al.*, 2017; Guo, 2006; Jansen and Moors, 2013; Brandt and Znodtka, 2019, Nobre, 2013, Haschar-Noé and Basson, 2019).

Managerial and policy implications

Our findings provide practical managerial and policy implications. In today's competitive and challenging environment characterized by technological, health, social, and economic changes, there is a consensus on the need for healthcare organizations to establish an organizational culture encouraging entrepreneurial behaviors and healthy managerial attitudes toward risky activities to survive.

However, the ambiguity lies in the tools and means that can be mobilized to develop this posture. This study proposes three dynamic capabilities that enable these organizations to develop agility by sensing and monitoring the environment to respond rapidly to new threats or opportunities. Accordingly, flexibility in decision-making and organizational design is needed to enhance these organizations' ability to adapt and anticipate unique needs. Flexibility in policies is widely recommended to cope with the seismic changes faced in uncertain environments. As a dynamic capability, it facilitates adaptation to internal and external changes and empowers managers to swiftly react to disruptions while benefiting from unexpected opportunities and challenges. Our findings may encourage healthcare managers to introduce innovative actions to support their resilience in coping with environmental changes and constraints.

Conclusion, limitations, and directions for future research

Empirical studies focus primarily on EO's direct effect on performance (Covin and Wales, 2012; Shan *et al.*, 2016; Lisboa *et al.*, 2016), while less attention has been devoted to how firms can develop this strategic orientation. This study investigated the factors influencing EO in firms and demonstrated that an organization's ability to promote its EO is determined mainly by the fit of its organizational structure and management practices with its entrepreneurial activities.

This study offers a perspective to understand EO antecedents, as these have rarely been examined in the entrepreneurship and strategy literature; nevertheless, many limitations must be addressed. One principal limitation arises from the sample, which includes data from a particular area (healthcare) in one country (France). Sector- and country-specific factors—as well as the industry's rate of change—may significantly impact organizations' strategic actions and structure. In addition, the distinction between the private and public sectors has not been clearly put forward in this study. The degree of flexibility is not the same in both sectors. Future studies could address this point and extend their study to other contexts to see the specificities of each country. Furthermore, new insights could also be derived by including other potential EO determinants, such as the role of legislation. The legal framework is a predominant external influencing factor in the healthcare sector. Extensive legal constraints are typical in the public sector, but private organizations are also tightly controlled and must meet specific requirements. The legislative branch encourages health actors to act entrepreneurially, but legal standards are inappropriate for implementing entrepreneurial culture in many cases.

References

Adams, A. (2016). Collaborating in an evolving health care system- Opportunities for redesigning healthcare delivery. *Journal of the American Psychiatric Nurses Association*, *22* (1), 62-69.

Anderson, B. S., Kreiser, P. M., Kuratko, D. F., Hornsby, J. S., and Eshima, Y. (2015). Reconceptualizing entrepreneurial orientation. Strategic Management Journal, 36(10), 1579-1596.

Anderson, J. C., and Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. Psychological Bulletin, 103(3), 411–423.

Anser, MK, Yousaf, Z., Usman, M., Yousaf, S., Fatima, N., Hussain, H. and Waheed, J. (2021), "Strategic business performance through network capability and structural flexibility", Management Decision, Vol. 59 , 426-445.

Baron, R. M., and Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology, 51(6), 1173–1182.

Barringer, B. R., and Bluedorn, A. C. (1999). The relationship between corporate entrepreneurship and strategic management. Strategic Management Journal, 20(5), 421–444.

Blanken, A. (2008). Flexibility against efficiency? An international study on value for money in hospital concessions (Unpublished Ph.D. thesis). University of Twente, Enschede.

Brozovic, D, Nordin, F, Kindstrom, D, (2016), Service flexibility: conceptualizing value creation in service", Journal of Service Theory and Practice, Vol. 26, 6, 868-888.

Chahal, H., Gupta, M., Lonial, S., and Raina, S. (2019). Operational flexibility-entrepreneurial orientation relationship: Effects and consequences. Journal of Business Research, 105, 154–167.

Cote, J. A., and Buckley, M. R. (1987). Estimating trait, method, and error variance: Generalizing across 70 construct validation studies. *Journal of Marketing Research, 24*(3), 315–318.

Covin, J. G., and Slevin, D. P. (1989). Strategic management of small firms in hostile and benign environments. Strategic Management Journal, 10(1), 75–87.

Covin, J. G., and Wales, W. (2012). The measurement of entrepreneurial orientation. Entrepreneurship Theory and Practice, 36(4), 677–702.

Covin, J. G., and Wales, W. (2019). Crafting high-impact entrepreneurial orientation research: Some suggested guidelines. Entrepreneurship Theory and Practice, 43(1) 3–18.

Covin, J.G, Slevin, D.P., (1990), New venture strategic posture, structure, and performance: An industry life cycle analysis. Journal of Business Venturing 5 (2), 123-135.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. Psychometrika, 16, 297–334.

Crescenzi, R., Gagliardi, L., & Percoco, M. (2013). Social Capital and the Innovative Performance of Italian Provinces. Environment and Planning A: Economy and Space, 45(4), 908–929.

Dai, W., and Si, S. (2018). Government policies and firms' entrepreneurial orientation: Strategic choice and institutional perspectives. Journal of Business Research, 93, 23–26.

David J. Teece, Gary Pisano and Amy Shuen (1997), Dynamic Capabilities and Strategic Management, Strategic Management Journal, Vol. 18, No. 7, 509-533.

Douglas, E.J. Shepherd, D. A. Prentice, C, 2020. "Using fuzzy-set qualitative comparative analysis for a finer-grained understanding of entrepreneurship," Journal of Business Venturing, vol. 35(1).

Emery, Y., Giauque, D. (2014). L'univers hybride de l'administration au XXIe siècle. Introduction. Revue Internationale des Sciences Administratives, 80, 25-34.

Eshima, Y., and Anderson, B. S. (2016). Firm growth, adaptive capability, and entrepreneurial orientation. Strategic Management Journal, 38(3), 770–779.

Fan, Z., Wu, D., and Wu, X. (2013). Proactive and reactive strategic flexibility in coping with environmental change in innovation. Asian Journal of Technology Innovation, 21(2), 187–201.

Ferreira, J. J. M., Fernandes, C. I., and Kraus, S. (2019). Entrepreneurial research: Mapping intellectual structures and research trends. Review of Managerial Science, 13(1), 181–205.

Fornell, C., and Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research, 18(1), 39–50.

Gao, Y., Geb, B., Langa, X., and Xu, X. (2018). Impacts of proactive orientation and entrepreneurial strategy on entrepreneurial performance: Empirical research. Technological Forecasting and Social Change, 135, 178–187.

García-Villaverde, P. M., Rodrigo-Alarcón, J., Parra-Requena, G., and Ruiz-Ortega, M. J. (2018). Technological dynamism and entrepreneurial orientation: The heterogeneous effects of social capital. Journal of Business Research, 83, 51–64.

Green, K. M., Covin, J. G., and Slevin, D. P. (2008). Exploring the relationship between strategic reactiveness and entrepreneurial orientation: The role of structure–style fit. Journal of Business Venturing, 23(3), 356–383.

Grewal, R., and Tansuhaj, P. (2001). Building organizational capabilities for managing economic crisis: The role of market orientation and strategic flexibility. Journal of Marketing, 65, 67-80.

Gaudron, P (2020), La grande course des Centres Hospitaliers Universitaires Français afin de rester dans le groupe des leaders de la recherche et de l'innovation médicales, Management International, Vol 24 (1).

Gallouj, F., Merlin-Brogniart, C. & Moursli-Provost, A. (2015). Les partenariats public-privé et leur place dans l'innovation hospitalière: quels enseignements pour le management hospitalier? Innovations, 46, 161-195.

Corond, P., Faujour, V. & Hernu, R. (2020). Chapitre 15. Innovation organisationnelle et managériale aux HCL. Créer et piloter des hubs d'établissements publics et privés pour gérer la crise de la Covid (p. 270-287). Caen: EMS Editions.

Haschar-Noé, N., Basson, J. (2019). Innovations en santé, dispositifs expérimentaux et changement social: un renouvellement par le bas de l'action publique locale de santé: La Case de Santé de Toulouse (France).

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical Mediation Analysis in the New Millennium. Communication Monographs, 76(4), 408–420.

Herhausen, D, Morgan, R. E., Brozovic, D., and Volberda, H. W. (2020). Re-examining strategic flexibility: A meta-analysis of its antecedents, consequences, and contingencies. British Journal of Management.

Honta, M., Basson, J. (2017). 05. Entreprise métropolitaine en santé et ordre public local. Les limites socio-politiques à l'innovation institutionnelle. Le cas de l'agglomération bordelaise. Politiques & management public, 3-4, 287-300.

Huber, G, P (1990), A Theory of the Effects of Advanced Information Technologies on Organizational Design, Intelligence, and Decision Making, The Academy of Management Review, 15 (1),

Hughes, M., and Morgan, R. E. (2007). Deconstructing the relationship between entrepreneurial orientation and business performance at the embryonic stage of firm growth. Industrial Marketing Management, 36(5), 651–661.

Keh, T. K., Nguyen, T. T. M., and Ng, H. P. (2007). The effects of entrepreneurial orientation and marketing information on the performance of SMEs. Journal of Business Venturing, 22(4), 592–611.

Kletz, F., Marcellin, O. (2019). L'innovation avec le patient: un renouvellement par le design organisationnel. Innovations, 60, 93-120.

Lages, M., Marques, C. S., Ferreira, J.J.M., et al. (2017), Intrapreneurship and firm entrepreneurial orientation: insights from the health care service industry. Int Entrep Manag J 13, 837–854.

Li, Y, Liu, Y, Duan, Y, Li, M (2008), Entrepreneurial orientation, strategic flexibilities and indigenous firm innovation in transitional China, International Journal of Technology Management 41(1).

Lisboa, A., Skarmeas, D., and Saridakis, C. (2016). Entrepreneurial orientation pathways to performance: A fuzzy-set analysis. Journal of Business Research, 69(4), 1319–1324.

López-Sánchez, J. A., Santos-Vijande, M.L and Trespalacios-Gutiérrez, J.A (2011). The effects of manufacturer's organizational learning on distributor satisfaction and loyalty in industrial markets. Industrial Marketing Management, 40(4), 624–635.

Lumpkin, G. T., and Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. Academy of Management Review, 21(1), 135–172.

Malhotra, N. K, Agarwal, J., and Peterson, M. (1996). Methodological issues in cross-cultural marketing research. International Marketing Review, 13(5), 7–43.

Martens, C. P., Lacerda, F. M., Belfort, A. C., and de Freitas, H. M. R. (2016). Research on entrepreneurial orientation: Current status and future agenda. International Journal of Entrepreneurial Behavior and Research, 22(4), 556–583.

Miller, F.A., French, M, (2016), Organizing the entrepreneurial hospital: Hybridizing the logics of healthcare and innovation, Research Policy, Volume 45 (8), 1534-1544.

Miller, D, Friesen, P.H (1982), Innovation in conservative and entrepreneurial firms: Two models of strategic momentum, Vol3 (1). Strategic Management Journal.

Miroshnychenko, I., Strobl, A., Matzler, K., and De Massis, A. (2020). Absorptive capacity, strategic flexibility, and business model innovation: Empirical evidence from Italian SMEs. Journal of Business Research (in press).

Nadkarni, S., and Barr, P. S. (2008). Environmental context, managerial cognition, and strategic action: An integrated view. Strategic Management Journal, 29(13), 1395–1427.

Nadkarni, S., and Narayanan, V. K. (2007). Strategic schemas, strategic flexibility, and firm performance: the moderating role of industry clockspeed. Strategic Management Journal, 28(3), 243–270.

Anne Albert-Cromarias , Catherine Dos Santos (2020), Le Covid-19, un puissant catalyseur de coopération entre établissements de santé, The conversation

Defrancq, F, Van Oost, S, Lemtiri, J, Fontaine, S, Maisonneuve, A, Lambiotte,F, Elbeki, N, (2020), Prise en charge COVID-19 au sein des soins critiques du plus important centre hospitalier général de France: Comment la coordination urgences, réanimation et anesthésie a permis de gérer avec succès l'épidémie de coronavirus sur le territoire valenciennois?, Anesthésie & Réanimation, Vol 6 (5), 440-454.

Le Chaffotec, A. (2016). Quoi de neuf, Docteur? Les Living Labs en santé. Entreprendre & Innover, 31, 25-35.

Nahm, A.Y, Vanderembse, M.A, Koufteros, X (2003), The impact of organizational structure on time-based manufacturing and performance, Journal of Operations Management 21(3): 281-306.

Nobre, T (2013), L'innovation managériale à l'hôpital. Changer les principes du management pour que rien ne change? Revue Française de Gestion 6 (235), 113-127.

Noguera, F. Lartigau, J. (2009). De la prospective à la gestion prévisionnelle des métiers et des compétences dans la fonction publique hospitalière: enjeux et perspectives. Management & Avenir, 25, 290-314.

Ordanini, A.A, Parasuraman and Rubera, G (2014). When the recipe is more important than the ingredients: A qualitative comparative analysis (QCA) of service innovation configurations. Journal of Service Research, 17(2), 134–149.

Parra-Requena, G., Ruiz-Ortega, M. J., Garcia-Villaverde, P. M,. and Rodrigo-Alarcon, J. (2015)

The Mediating Role of Knowledge Acquisition on the Relationship Between External Social Capital and Innovativeness. European Management Review, 12(3), 149–169.

Patel, P. C., Terjesen, S., and Li, D. (2012). Enhancing effects of manufacturing flexibility through operational absorptive capacity and operational ambidexterity. Journal of Operations Management, 30(3), 201–220.

Paula Monteiro, A., Maria Soares, A,. and Lima Rua, O. (2019). Linking intangible resources and entrepreneurial orientation to export performance: The mediating effect of dynamic capabilities. Journal of Innovation and Knowledge, 179–187.

Pittino, D., Visintin, F., and Lauto, G. (2016). A configurational analysis of the antecedents of entrepreneurial orientation. European Management Journal, 35(2), 224–237.

Podsakoff, P., MacKenzie, S. B., Lee, J. Y., and Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. Journal of Applied Psychology, 88(5), 879–903.

Preacher, K. J., and Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. Behavior Research Methods, 40(3), 879-891.

Ragin, C.C (2000), Fuzzy-set social science. University of Chicago Press.

Ragin, C.C (2008). Redesigning Social Inquiry: Fuzzy Sets and Beyond. University of Chicago Press, 10.

Rechel, B., Wright, S., Edwards, N., Dowdeswell, B., and McKee, M. (2009). Investing in hospitals for the future. Copenhagen: The European Observatory on Health Systems and Policies.

Rihoux, B and Ragin, C.C (2009). Configurational comparative methods: Qualitative Comparative Analysis (QCA) and related techniques. Sage Publications.

Riviere, M, Romero-Martínez, A.M (2021), Network embeddedness, headquarters entrepreneurial orientation, and MNE international performance, International Business Review, 30 (3).

Rodrigo-Alarcon, J., García-Villaverde, P. M., Ruiz-Ortega, M. J., and Parra-Requena, G. (2017). From social capital to entrepreneurial orientation: The mediating role of dynamic capabilities, European Management Journal, 36(2), 1–15.

Rezazadeh, A., Nobari, N. Antecedents and consequences of cooperative entrepreneurship: a conceptual model and empirical investigation. Int Entrep Manag J 14, 479–507 (2018).

Roy, M.J and Thérin, F (2008). Knowledge acquisition and environmental commitment in SMEs. Corporate Social Responsibility and Environmental Management, 15(5), 249-259.

Rudd, J. M., Greenley, G. E., Beatson, A. T., and Lings, I. N. (2008). Strategic planning and performance: Extending the debate. Journal of Business Research, 61, 99–108.

Simonet, D, (2013), New public management and the reform of French public hospitals, Journal of public affairs, Vol 13 (3), 260-271.

Sanchez, R (1995), Strategic flexibility in product competition, Strategic Management Journal, 16(1), 135-159.

Santos-Vijande, M. L., Lopez-Sanchez, J. A., and Trespalacios, J. A. (2012). How organizational learning affects a firm's flexibility, competitive strategy, and performance. Journal of Business Research, 65(8), 1079–1089.

Schneider, C.Q., and Wagemann, C. (2010). Standards of Good Practice in Qualitative Comparative Analysis (QCA) and Fuzzy-sets. Comparative Sociology, 9(3), 397-418.

Shan, P., Song, M., and Ju, X. 2016. Entrepreneurial orientation and performance: Is innovation speed a missing link? Journal of Business Research, 69(2), 683–690.

Sirén, C., Hakala, H., Wincent, J., and Grichnik, D. (2016). Breaking the routines: Entrepreneurial orientation, strategic learning, firm size, and age. Long Range Planning, 50(2), 145–167.

Skarmeas, D., Leonidou, C. N., & Saridakis, C. (2014). Examining the role of CSR skepticism using fuzzy-set qualitative comparative analysis. Journal of Business Research, 67(9), 1796–1805.

Stevenson, H. H., and Jarillo, J. C. (1990). A paradigm of entrepreneurship: Entrepreneurship management. Strategic Management Journal, (11), 17–27.

Tang,J, Kacmar,K.M., Busenitz,L, (2012), Entrepreneurial alertness in the pursuit of new opportunities, Journal of Business Venturing, Volume 27, Issue 1, 2012, 77-94.

Teece, DJ (2007), Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance, Strategic Management Journal, 28 (13), 1319-1350.

Teece, DJ, (2014), A dynamic capabilities-based entrepreneurial theory of the multinational enterprise, Journal of Inter Business Studies, 45 (8-37).

Teece, D; Leih, S (2016). Uncertainty, Innovation, and Dynamic Capabilities: An Introduction. California Management Review, 58(4), 5–12.

Tsai, M. T., and Shih, C. M. (2004). The impact of marketing knowledge among managers on marketing capabilities and business performance. Inter Journal of Management, 21(4), 524–530.

Vecchiarini, M, Mussolino, D, (2013), Determinants of entrepreneurial orientation in family-owned healthcare organizations, Inter Journal of Healthcare Management, 6: 4, 237-251.

Volberda H. W. (1996). Towards the Flexible Form: How to Remain Vital in Hypercompetitive Environments. Organization Science, 7(4), 359–387.

Volberda, H. W., Foss, N. J., and Lyles, M.A. (2010). Absorbing the concept of absorptive capacity: how to realise its potential in the organization field. Organization Science, 21 (4), 931-951.

Vorhies, D. W., and Morgan, N. A. (2003). A configuration theory assessment of marketing organization fit with business strategy and its relationship with marketing performance. Journal of Marketing, 67(1), 100–115.

Wales, J. W., Kraus, S., Filser, M., Stockmann, C., and Covin, J. G. (2020). The status quo of research on entrepreneurial orientation: Conversational landmarks and theoretical scaffolding. Journal of Business Research.

Wales, W. J., Gupta, V. K., and Mousa, F. T. (2013). Empirical research on entrepreneurial orientation: An assessment and suggestions for future research. International Small Business Journal, 31(4), 357–383.

Wales, W. J., Parida, V., and Patel, P. C. (2013). Too much of a good thing? Absorptive capacity, firm performance, and the moderating role of entrepreneurial orientation. Strategic Management Journal, 34(5), 622–633.

Wales, W., Monsen, E., and McKelvie (2011). The organizational pervasiveness of entrepreneurial orientation. Entrep Theory and Practice, 35(5), 895–923.

Wiklund, J., and Shepherd, D. (2005). Entrepreneurial Orientation and Small Business Performance: A Configurational Approach. Journal of Business Venturing, 20, 71-91.

Woodside, A. G. (2013). Moving beyond multiple regression analysis to algorithms: Calling for adoption of a paradigm shift from symmetric to asymmetric thinking in data analysis and crafting theory. Journal of Business Research, 66(4), 463–472.

APPENDIX 1

Questionnaire

The aim of this questionnaire is to identify the determinants of entrepreneurial orientation in the French healthcare sector. Results from the questionnaire will be used for academic purpose only. The answers are anonymous, and we encourage the respondents to answer sincerely to the different questions.

Respondents' characteristics Please answer the following question by putting "X" in the option that describes you the best:

Gender: ☐ Female ☐ Male Please indicate your: Age: _____ Years of experience: _____ Position: _____

For all the following questions, please indicate your level of agreement or disagreement by selecting the answer that you feel is most appropriate. 1 = Strongly disagree, 2 = Disagree, 3 = Somewhat disagree, 4 = Neutral, 5 = Somewhat agree, 6 = Agree, 7 = Strongly agree	
Information acquisition	
	IA1: We collect and use the information generated during organizational changes.
	IA2: We constantly evaluate the need to adapt to the business environment.
	IA3. We collect information about what our competitors do through different means.
	IA4. We constantly evaluate the need to change even when there is optimal adaptation to the business environment.
	IA5.The members of the organization use informal means to find out about recent events regarding the market or the environment.
Strategic flexibility	
	SF1: We give importance to the entry of new competitors.
	SF2: We take into account the change of customers' product/service preferences.
	SF3: We consider radical technological changes or the anticipated obsolescence of current technologies.
	SF4: We take into account important economic changes.
	SF5: We detect new business opportunities and threats.
For all the following questions, please indicate your level of agreement or disagreement by selecting the answer that you feel is most appropriate. 1 = Strongly Disagree, 2 = Disagree 3 = Neutral, 4 = Agree, 5 = Strongly agree	
Structural flexibility	
	SX1: We facilitate communication between different departments.
	SX2: In our organization, we try to reduce bureaucracy (decision making, implementation of new projects, etc.)
	SX3: Our internal structures are flexible (multidisciplinary teams, decentralized decision-making, etc.)
For all the following questions, please indicate your level of agreement or disagreement by selecting the answer that you feel is most appropriate. 1 = Strongly disagree, 2 = Disagree, 3 = Somewhat disagree, 4 = Neutral, 5 = Somewhat agree, 6 = Agree, 7 = Strongly agree	
Entrepreneurial Orientation (EO)	
Innovativeness (EO_INNOV)	
	INNOV1: We actively introduce improvements and innovations in our business.
	INNOV2: Our business is creative in its methods of operation.
	INNOV3: Our business seeks out new ways to do things.
Proactiveness (EO_PRO)	
	PROAC1: We always try to take initiative in every situation (e.g., against competitors, in projects when working with others).
	PROAC2: We excel at identifying opportunities.
	PROAC3: We initiate actions to which other organizations respond.
Risk-taking (EO_RT)	
	RISK1: The term risk is considered a positive attribute for people in our business.
	RISK2: People in our business are encouraged to take calculated risks with new ideas.
	RISK3: Our business emphasizes both exploration and experimentation for opportunities.