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Renewing a Subsidiary's Innovative Capabilities through Flexible Design, Contextual Ambidexterity, and External Embeddedness

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Abstract

Purpose – The primary purpose of this paper is to show that to renew static innovative capabilities, a subsidiary needs to have a flexible design to support exploitation-exploration innovation and external embeddedness as a source of new knowledge. **Theoretical framework –** We combine organizational structure, organizational innovation, contextual ambidexterity, and network theory to investigate how innovative capabilities can be built in foreign subsidiaries operating in Brazil. **Design/methodology/approach** – Data were collected from foreign subsidiaries installed in Brazil through a survey of 289 valid respondents. We used the PLS-SEM technique to test relationships involving flexible structure, contextual ambidexterity, external embeddedness, and innovative capabilities to run a moderate-mediate model. **Findings** – The evidence indicates that a flexible structure, contextual ambidexterity as a dynamic capability, and external embeddedness are relevant elements for renewing a subsidiary's innovative capabilities. The findings suggest that external embeddedness is a crucial knowledge source, depending on the trust and commitment at the network level. High external embeddedness enables the subsidiary to achieve optimized levels of exploration and exploitation, helping in the renewal of innovative capabilities. **Practical & social implications of research –** We provide managers with information on developing and renewing innovative capabilities by creating a flexible design that facilitates the acquisition of unique network resources and allows contextual ambidexterity as a dynamic capability to reconfigure and transform innovative capabilities. **Originality/value** – The article contributes to the strategic management and capability-based view of MNE subsidiaries literature. We introduce the construct of a *flexible organizational*

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structure, which combines organizational structure theory and organizational innovation characteristics. We show that a flexible design is essential to build a trustful local network and implement contextual ambidexterity as a dynamic capability to renew innovative subsidiary capabilities.

Keywords: Organizational structure, organizational innovation, contextual ambidexterity, external embeddedness, innovative capabilities.

1 Introduction

MNE subsidiaries face increasingly turbulent environments and tough local and global competition, leading them to focus on innovation, through which they seek to attain a competitive advantage. Innovative capabilities are static (Helfat & Peteraf, 2003); however, dynamic capabilities are required (Teece, 2007) for static capabilities to be adjusted and further developed (Rothaermel & Hess, 2007) and to adapt to changing environments. Dynamic capabilities are managerial activities through which managers transform their static capabilities (Teece, 2007). An example of such dynamic capabilities is organizational ambidexterity, which is the simultaneous exploitation-exploration of innovation activity (Birkinshaw et al., 2016; O'Reilly & Tushman, 2008), and which may be used in innovative capabilities (Bessant & Tidd, 2015). Organizational ambidexterity can therefore be seen as an antecedent of an MNE subsidiary's innovative capability.

However, how a subsidiary advances towards developing organizational ambidexterity, which can be used to develop innovative capabilities, is unclear. One probable reason for this is that the research has mainly conceptualized organizational ambidexterity as an antecedent. It is limited to focusing on the factors through which subsidiaries develop organizational ambidexterity. Some studies suggest that the organizational structure can be a crucial factor in determining how an organization develops ambidexterity (Kortmann, 2012). However, again, it is unclear what types of structures and what contingent factors might strengthen or weaken the organizational structure-ambidexterity relationship.

To this end, we seek to examine the relationship among organizational structures, organizational ambidexterity, and the subsidiary's innovative capabilities. We argue that a flexible organizational design will encourage organizational ambidexterity. Furthermore, we assume that organizational ambidexterity is an antecedent of the subsidiary's innovation capabilities. In other words, we assume that innovation in a firm is a result of operational capabilities (subsidiary innovation capabilities) reconfigured and maintained by dynamic capabilities (organizational ambidexterity). Hence, the research question is: "*what conditions are necessary for a subsidiary to develop renewable innovative capabilities through flexible designs*?"

We focus on organizational design through two critical organizational elements: internal configuration and external embeddedness. The source of new knowledge comes from the opportunities in the external environment, more specifically from the subsidiary's external network. We argue that developing external embeddedness (EE) is a source of differentiated knowledge for exploitation and exploration tasks that help renew innovative capabilities (Vahlne & Jonsson, 2017). Hence, we test external embeddedness as a moderator in the organizational structure and organizational ambidexterity relationship.

Similarly, we argue that the subsidiary needs a flexible organizational structure (FOS) to develop and maintain subsidiary capabilities. FOS borrows elements from organizational structure theory (Burton & Obel, 2018; Burns & Stalker, 1961; Lawrence & Lorsch, 1967) and organizational innovation (Damanpour & Aravind, 2012; Vaccaro et al., 2012). Organizational structure derives from Burns and Stalker's (1961) and Lawrence and Lorsch's (1967) seminal studies, identifying innovative and non-innovative organizations and organic and mechanistic structures. Organizational innovation relates to changes in the organizational structure, rules, management systems, and the effective use of resources (Damanpour & Aravind, 2012; Vaccaro et al., 2012). FOS is flexible enough to encourage changes in rules and procedures, functions, management systems, communication, and an organizational structure adaptable to internal and external demands (Damanpour & Aravind, 2012; Vaccaro et al., 2012).

Our study takes contextual ambidexterity (CAMB) as a dynamic capability, external embeddedness (EE) as a source of knowledge, and flexible organizational structure

(FOS) as a critical factor in developing and renewing the subsidiary's innovative capabilities (SIC). We conceptualize and test a moderated mediation model, where CAMB mediates the relationship between FOS and SIC, and external embeddedness moderates FOS and CAMB.

We identify several contributions that extend the current knowledge of organizational theory. We first identify a flexible organizational design as an antecedent to organizational ambidexterity in the context of MNE subsidiaries and contribute to the organizational theory research. Second, we use a conditional process analysis technique (moderate-mediate model), which is still rare in the strategic management and organizational theory literature, identifying external embeddedness as contingent on the structure-ambidexterity relationship. Third, we perform a synthesis of various research streams. This includes dynamic capabilities (DCs), contextual ambidexterity (CAMB), innovative capabilities, organizational design, and the network literature that shows that subsidiaries require dynamic capabilities to achieve simultaneous exploitation-exploration and the knowledge acquired from the local network (Lessard et al., 2016). Lastly, we offer implications for theory and management practice, and in particular, for managers, we suggest the role of external embeddedness in enhancing their subsidiary's innovative capabilities. Although a flexible organizational structure is essential to create innovative capabilities (Kortmann, 2012), contextual ambidexterity and external embeddedness are central in renewing innovative capabilities.

2 Theoretical background and hypotheses

We start with organizational capabilities theory, highlighting the role of operational and dynamic capabilities (DCs) and contextual ambidexterity as a dynamic capability. Then, we detail the theoretical background that supports this study and corresponding hypotheses in seven subsections, as follows.

2.1 Organizational capabilities

Helfat and Peteraf (2003) define organizational capabilities (OCs) as "the ability of an organization to perform a coordinated set of tasks, utilizing organizational resources, to achieve a particular result" (p. 999). Winter (2003) and Danneels (2008) argued that there are ordinary capabilities (also known as operational or functional) and dynamic capabilities (DCs). The former are static capabilities that require dynamic capabilities to be developed, changed, and reconfigured to adapt the subsidiary to environmental changes (Wu & Vahlne, 2020). The subsidiary's innovative capability (SIC) is an ordinary capability that needs dynamic capabilities to be renewed. Thus, we define SIC as an organizational capability that uses existing organizational resources and knowledge in exploitative tasks. The latter can modify ordinary capabilities, reconfiguring and transforming existing and new resources and capabilities (O'Reilly & Tushman, 2013), allowing the firm to innovate (Teece, 2007, p. 1344).

Although the definition of dynamic capabilities is far from consensual (Birkinshaw et al., 2016), we adopt the definition of Wang and Ahmed (2007), who offered a comprehensive definition. In this respect, we focus on the central element of DCs, *i.e.*, the reconfiguration and renewal of the organizational capabilities, in agreement with the studies of Tuzovic et al. (2018) and O'Reilly & Tushman (2008). These authors argue that ambidexterity is a specific type of dynamic capability and is a significant DC in the innovation process. Accordingly, DCs in the firm are defined as the "behavioral orientation to continuously integrate, reconfigure, renew, and recreate its resources and capabilities, focusing on upgrading and reconstructing its core capabilities in line with the dynamic, changing environment to obtain and sustain a competitive advantage" (O'Reilly & Tushman, 2008, p.35).

2.2 Flexible organizational structures and the subsidiary's innovative capability

Organizations can use different designs contingent upon their strategy and context (Campanella et al., 2020) to build innovative capabilities, which are essential for the firm's progress and existence in changing environments (Wang & Ahmed, 2007). We conceptualize *flexible organizational structure* (FOS) as an organizational design to manage changing internal and external environments. FOS combines organizational structure and organizational innovation approaches. The organizational structure literature retraces its steps to Burns and Stalker's (1961) and Lawrence and Lorsch's (1967) studies in defining mechanistic (hierarchical) and organic (non-hierarchical) structures. A mechanistic structure exhibits centralized and formalized decision-making, poor vertical communication, and rigid routines (Teece et al., 2016); however, it is efficient and appropriate for stable environments and

continuous innovation. Conversely, the organic structure is decentralized, characterized by a weak hierarchy, low formalization, loose rules, poor performance, and radical innovation (Sine et al., 2006). FOS requires characteristics of mechanistic and organic structures to achieve control, efficiency, decentralized decision-making, experimentation, and organizational innovation. From the organizational innovation perspective, FOS supports the renewal of rules, tasks, management systems, communication, and organizational structure (Damanpour & Aravind, 2012; Vaccaro et al., 2012), creating an internal configuration adaptable to (internal and external) environmental changes. These abovementioned features of FOS are vital to the subsidiary developing internal and external environments conducive to developing and adjusting innovative capabilities (SIC), which are intrinsically static. Thus, we hypothesize the following:

> H1: The subsidiary's flexible structure is positively associated with innovative capabilities.

2.3 Flexible organizational structures and contextual ambidexterity

Duncan (1976) was the first to suggest *organizational ambidexterity*, arguing that a firm needs to deploy two types of conflicting organizational structures to support innovation and face changing environments, *i.e.*, mechanistic and organic (Burns & Stalker, 1961; Csaszar, 2013). Accordingly, based on growing local and global competition, Tushman and Nadler (1986) anticipated the idea of ambidextrous organizations, arguing that "organizations can gain competitive advantage only by managing effectively for today while simultaneously creating innovation for tomorrow" (p. 92). The authors argue that organizational structure is a central factor in achieving the benefits of innovative activities. However, to cope with today's changing environments, the organizational structure must be flexible enough to support managers in renewing rules and procedures, communication, and management systems rapidly, and the organizational structure itself to facilitate innovation (Burns & Stalker, 1961; Lawrence & Lorsch, 1967; Vaccaro et al., 2012). This new organizational design (FOS) is in line with Damanpour and Aravind's (2012), Csaszar's (2013), and Atuahene-Gima's (2005) studies, which suggest that there is a close relationship between organizational structure and exploitative-explorative innovation.

Contextual and structural ambidexterity are the two main ambidexterity approaches investigated (O'Reilly & Tushman, 2013). O'Reilly and Tushman (2013) defined *ambidexterity* as the subsidiary's ability to balance conflicting activities, the simultaneous search for efficiency, control, and incremental improvement (exploitation/mechanistic structure), as well as flexibility, adaptability, and discontinuous innovation (exploration/organic structure). Although organizations can implement either structural or contextual ambidexterity, we suggest that contextual ambidexterity is appropriate to study foreign subsidiaries operating in Brazil since they are usually small to medium subsidiaries with single structures, which facilitates building a supportive context that allows vertical and horizontal integration, resource allocation, and adaptation to changing environments (Fourné et al., 2019). A flexible structure that helps simultaneous exploitation and exploration innovation (Foss et al., 2015) is beneficial to the subsidiary as it helps renew innovative capabilities. Thus, we hypothesize the following:

> H2a: The subsidiary's flexible structure is positively associated with contextual ambidexterity.

2.4 External embeddedness, contextual ambidexterity, and flexible structure

As defined by Andersson et al. (2005), network embeddedness is "a relationship characterized by a high degree of mutual, long-term adaptation in terms of relation-specific investments" (p. 103). The literature shows that international business network research often concentrates on structural and relational embeddedness (Gulati, 1998). We adopt relational embeddedness and suggest that trust and commitment facilitate accessing unique and differentiated information, knowledge, and technology (Hansen, 1999; Gulati, 1998), which we call external embeddedness (EE). Indeed, a trustful network can continuously provide the subsidiary with new knowledge for innovation (Alinaghian et al., 2020), which is necessary for exploitative-explorative innovation. Thus, the knowledge and innovation relationship is clear (Kogut, 1988), where knowledge is considered a significant antecedent factor of innovation.

Contextual ambidexterity and a flexible structure make up the subsidiary's organizational design that allows for renewing innovative capabilities. The flexible structure facilitates innovation through exploration-exploration

activities (Damanpour & Aravind, 2012) and sustains trustful interorganizational ties to acquire unique and differentiated knowledge (Schöllhammer & Gibb, 2019). Depending on the strength of the ties (Granovetter, 1983), *i.e.* whether they are strong or weak, the subsidiary may have more or less access to unique knowledge (Dahlander et al., 2016). Strong ties grounded on trust are efficient mechanisms to access valuable knowledge (Kadushin, 2012), while weak ties extend the network to more diversified but ordinary knowledge (Kadushin, 2012).

External embeddedness is expected to change the influence of the organizational structure on contextual ambidexterity, contingent on the strength of the ties between the network actors (Granovetter, 1993; Gulati, 1998). This suggests that external embeddedness moderates the relationship between flexible structure and contextual ambidexterity. Thus, we hypothesize the following:

> H2b: External embeddedness positively moderates the relationship between flexible structure and contextual ambidexterity.

2.5 The subsidiary's innovative capability and contextual ambidexterity

The subsidiary's innovative capabilities (SIC) are static (Helfat & Winter, 2011), and to cope with changing environments, they need to be reconfigured and developed by dynamic capabilities (DCs) (Bessant & Tidd, 2015). Parashar and Singh (2005) argue that dynamic capabilities renew innovation capabilities. Rothaermel and Hess (2007) and Teece (2007) also state that dynamic capabilities enable the organization to adapt to change through innovation. According to O'Reilly and Tushman (2008, 2013), organizational ambidexterity is a specific firm's capability that allows the organization to reconfigure and transform new knowledge, resources, and capabilities.

We assume that contextual ambidexterity is a dynamic capability that can renew the subsidiary's innovative capabilities through exploitative-explorative activities (O'Reilly & Tushman, 2008). Exploration is related to search, variation, risk-taking, experimentation, flexibility, discovery, and radical innovation, while exploitation refers to refinement, choice, production, efficiency, selection, implementation, execution, and incremental innovation (Rogbeer et al., 2014).

Exploration and exploitation are considered to be conflicting activities (Rogbeer et al., 2014) that require specialized dual structures, one for exploitation and the other for exploration, called structural ambidexterity (O'Reilly & Tushman, 2008). However, some researchers argue that exploitation-exploration can coexist since the subsidiary creates a supportive context based on a flexible organizational structure that stimulates individuals to freely split their time between exploitative and explorative demands in a single structure called contextual ambidexterity (Gibson & Birkinshaw, 2004; Haveli et al., 2015). That means contextual ambidexterity and the subsidiary's innovative capabilities (SIC) are closely connected. Thus, we propose the following hypothesis:

> H3a: Contextual ambidexterity is positively associated with the subsidiary's innovative capabilities.

2.6 Flexible structures, contextual ambidexterity, and innovative capabilities

Scholars such as Schöllhammer and Gibb (2019) and Damanpour and Aravind (2012) have observed that organizations have changed gradually to more flexible structures to transform existing and new resources, technology, and capabilities. Thus, subsidiaries should implement agile and flexible structures that combine features of mechanistic-organic structures (Escrig et al., 2020). A flexible organizational structure (FOS) enables the renewal of routines, modifies functions and communication structures, and employs diverse management systems to improve control, efficiency, and innovation (Vaccaro et al., 2012).

Tushman and O'Reilly (1996) define ambidexterity in terms of innovation as "the ability to simultaneously pursue both incremental and discontinuous innovation and change results from hosting multiple contradictory structures, processes, and cultures within the same firm" (p. 24). This suggests that the firm's structure is dually constituted of separate units for exploitation (hierarchical) and exploitation (non-hierarchical). Conversely, in Gibson and Birkinshaw's (2004) proposal, a single structure can cope with the exploitation and exploration activities of contextual ambidexterity. According to the authors, a single structure provides the housing for simultaneous exploitative and explorative tasks since top management develops a supportive context that includes FOS to help

simultaneous exploration and exploitation and renew innovative capabilities. Indeed, contextual ambidexterity is a dynamic capability that can renew static capabilities (Helfat & Winter, 2011). Recent literature shows studies using contextual ambidexterity as a mediator at the micro and macro levels (Gibson & Birkinshaw, 2004; Muhammad et al., 2021). Therefore, we propose the following hypothesis:

> H3b: Contextual ambidexterity mediates the association between flexible structure and the subsidiary's innovative capabilities.

2.7 Conceptual framework and hypotheses

Figure 1 shows the moderate-mediate framework and hypotheses. It indicates that contextual ambidexterity (CAMB) mediates the relationship between flexible organizational structure (FOS) and the subsidiary's innovative capabilities (SIC). CAMB is a dynamic capability (DC) that enables CAMB to renew SIC. We suggest external embeddedness (EE) as a source of new knowledge that moderates the relationship between FOS and CAMB.

3 Methodology

Our universe of foreign subsidiaries in Brazil is the result of a mailing list based on different sources of information (magazines and rankings) of the 1,000 most significant foreign subsidiaries in terms of sales operating in Brazil (later reduced to 972 valid contacts), from different segments such as industry, commerce, and services. After discarding missing data, the final sample comprised 289 respondents (see SUPPLEMENTARY DATA 2 – company data). These subsidiaries are primarily small and medium-sized (93%) units and a few large subsidiaries (7%). We utilized an online questionnaire based on well-cited researchers and answered by the subsidiaries' responsible managers. The mode of entry was predominantly via mergers and acquisitions, followed by alliances and greenfield investments. The countries of origin of the firms that participated in the study are European (74%), North American (17%), Asian (5%), and South American (4%) (see SUPPLEMENTARY DATA 2 – company data).

The questions in the Appendix show the constructs and scholars involved. Flexible Organizational Structure focuses on an organizational structure that allows the subsidiary to adapt to environmental changes (adapted from Vaccaro et al., 2012). External Embeddedness explores how the subsidiary improves its interorganizational ties (Hallin et al., 2011; Kingshott, 2006). Contextual Ambidexterity involves exploitative and explorative activities (He & Wong, 2004), and Subsidiary's Innovative Capabilities measures innovative activities (Andersson et al., 2014) (see SUPPLEMENTARY DATA 3 - questionnaire).

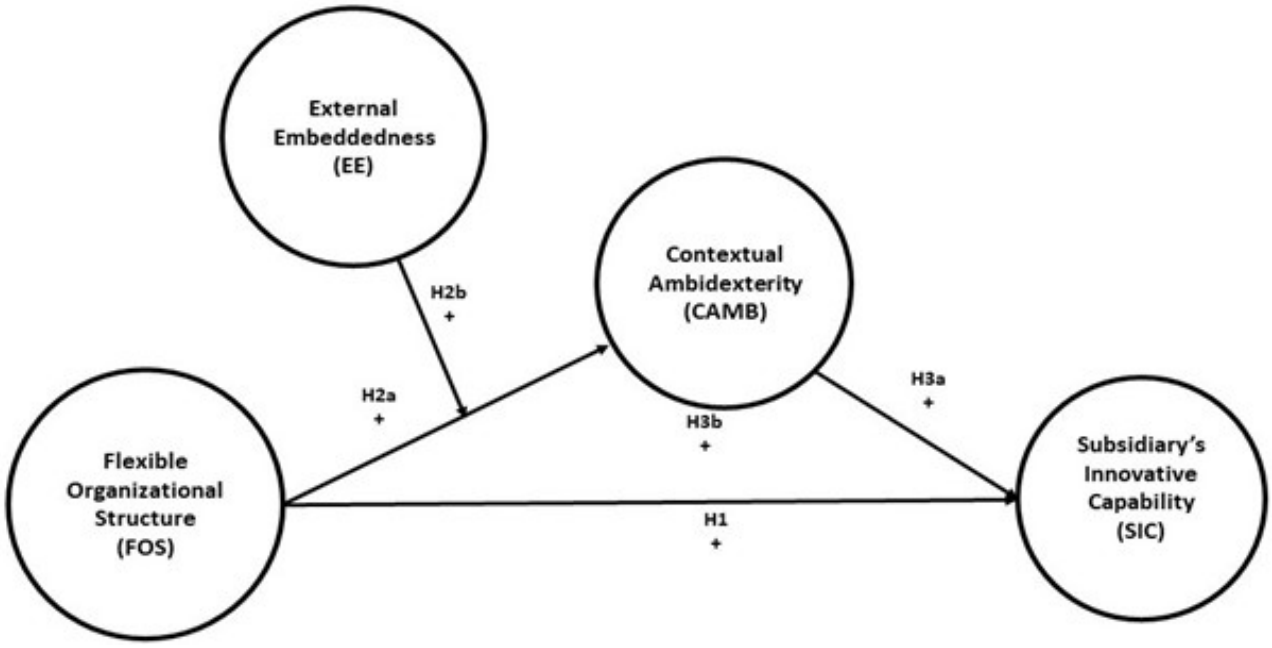

Figure 1. Conceptual framework and hypotheses

We conducted a data normality test to define the most suitable multivariate technique for our study by calculating skewness and kurtosis. The skewness and kurtosis values were -1.1 and 1.8, respectively, representing a slightly non-normal curve. However, skewness values between –2 and +2, and kurtosis values close to 2, are considered acceptable (Hair et al., 2022). According to Hair et al. (2022), "PLS-SEM's statistical properties provide very robust model estimations with data that have normal as well as non-normal distributional properties" (p. 27), since PLS-SEM usually makes no assumptions about data distributions. However, it is important to confirm that the data are not too far from normal. According to Henseler et al. (2016), Souzabido and Silva (2019), and Hair et al. (2020), PLS utilizes a non-parametric technique, called bootstrapping, which consists of taking the original sample as a universe and repeatedly re-sampling it, obtaining a "normal-like" distribution. The bootstrap sample enables the estimated coefficients and significance tests of PLS-SEM (Henseler et al., 2009). We used SmartPLS 3 (Ringle et al., 2015), a partial least square (PLS) software package that enables multiple regression models (SEM), to test the proposed conditional process framework (Figure 1) (see SUPPLEMENTARY DATA 1 – settings).

3.1 Model metrics

The conceptual framework was modeled in SmartPLS 3, adopting reflective structural modeling (SUPPLEMENTARY DATA 4 – database). The sample size of 289 valid respondents is greater than the minimum quantity of 77, calculated by the G*Power 3.1.9.2 software. The model metrics assessment follows these steps: confirmatory factor analysis (CFA), the conceptual model assessment via the PLS algorithm/bootstrapping results, and the global fit via the standardized root mean square residuals (SRMR). CFA is commonly applied in CB-SEM studies and rarely in PLS-SEM (Henseler, 2018). The reliability and validity assessments of both steps are presented in subsections 3.1.1, 3.1.2, 4.1, and 4.2.

3.1.1 *Step 1 - confirmatory factor analysis assessment*

According to Hair et al. (2020), CFA enables us "to improve item and scale reliability, identify and provide an indication of items that need to be revised or in some instances eliminated for content validity, and facilitate achieving convergent validity and discriminant validity." CFA requires a saturated model that links all LVs, *i.e.*, all constructs are allowed to be freely correlated. We used PLS-CFA for the factor weighting scheme and a significance level of 0.05 (two-tailed).

The measurement model shows that all loading indicators are above 0.708, except for two indicators with values around 0.600 (SIC 1 and 5), but still acceptable (Hair et al., 2022), indicating satisfactory item reliability (see SUPPLEMENTARY DATA – CFA).

The internal consistency reliability examines the composite reliability, Cronbach's alpha, or a value between both. The values are below 0.95, indicating acceptable internal consistency reliability (Henseler, 2018). The convergent validity is assessed by the average variance extracted (AVE) for each construct and should be 0.50 or higher. All AVE values are above 0.50, indicating an acceptable convergent validity (see SUPPLEMENTARY DATA – CFA).

The structural model evaluates the discriminant validity through the HTMT ratio. All values are below 0.90, indicating acceptable discriminant validity (Henseler et al., 2015). Additionally, all path coefficients from the saturated model are significant, with *p*-values below 0.1% and *t* statistics above 1.96 (see SUPPLEMENTARY DATA – CFA).

3.1.2 *Step 2 (conceptual model assessment) - reliability and validity*

Table 1 shows that the Cronbach's alpha and composite reliability values are below 0.95 (Henseler, 2018), indicating a high level of internal consistency reliability.

As we utilize a reflective model, convergent validity assesses the average variance extracted (AVE) and outer loadings. The AVE values are higher than 0.50, and all outer loadings are higher than 0.70, indicating

Table 1
Cronbach's alpha, composite reliability, and AVE

Construct	Cronbach's Alpha	Composite Reliability	AVE
CAMB	0.913	0.929	0.590
IN	0.910	0.927	0.670
EE	0.906	0.924	0.584
HSTR	0.902	0.933	0.604

adequate indicator reliability and convergent reliability (see SUPPLEMENTARY DATA 1 – reliability).

Table 2 presents the values for discriminant validity obtained for the Fornell and Larcker (1981) and HTMT criteria, which meet the cutoff limits (Hair et al., 2022). According to Henseler et al. (2015), in PLS-SEM, the heterotrait-monotrait ratio of correlations (HTMT) is more consistent than the Fornell and Larcker (1981) criterion (SUPPLEMENTARY DATA 1 – HTMT ratio).

All questions were answered by the same 289 respondents, so the internal reliability can potentially be compromised, resulting in common method bias. We used split-half testing (Steinke & Kopp, 2020) to complement the internal consistency reliability measurement. We ran RELEX, an excel-based software tool for sampling split-half reliability, examining 10,000 iterations. Ninety-five percent of the sampled reliability coefficients are between ρ_{SC} = 0.86 and ρ_{SC} = 0.95, with a median reliability coefficient of ρ_{SC} = 0.92, showing a high correlation and internal consistency reliability (see SUPPLEMENTARY DATA 5 – RELEX).

Finally, Henseler et al. (2016) state that "currently, the only approximate model fit criterion implemented for PLS path modeling is the standardized root mean square residual (SRMR)" (p. 9). Some scholars have proposed a cutoff value of 0.08 for the SRMR (Cho et al., 2020; Henseler et al., 2016). We obtained a SRMR value of 0.064, indicating that the overall fit is acceptable (see SUPPLEMENTARY DATA – SRMR).

4 Results

The structural model involves the model's predictive capacity and the relationships among constructs. A reflective model assesses inner collinearity, the R-squared, f-squared, Q-squared, and the significance and size of the path coefficients.

The inner VIF values are lower than 1.2, indicating negligible collinearity (see SUPPLEMENTARY DATA 1 – inner VIF). Following Cohen's (2013) proposal, the total effect of flexible structure, contextual ambidexterity, and embeddedness on SIC substantially explain its variability (47%), while the variance of contextual ambidexterity (30%) is explained by the indirect effect of structure on it, and the moderating effect of EE.

According to Hair et al. (2022), to assess the model quality the effect size (f^2) and Q^2 should also be evaluated (Table 3). As Chin (1998) and Cohen (2013) stated, f^2 measures each predictor's strength in explaining endogenous variables. Thus, f^2 values of 0.02, 0.15, and 0.35 represent weak, moderate, and substantial effects. Table 3 indicates that the f-squared value for contextual ambidexterity presents a substantial effect on SIC (0.434),

Table 2
Discriminant validity – Fornell & Larcker (1981) and HTMT

FORNELL-LARCKER CRITERION					HTMT RATIO				
	CAMB	EE	HSTR	IN		CAMB	EE	HSTR	IN
CAMB	0.789				CAMB				
EE	0.450	0.825			EE	0.491			
HSTR	0.360	0.322	0.819		HSTR	0.391	0.354		
IN	0.619	0.426	0.507	0.858	IN	0.670	0.464	0.561	

Table 3
R-squared, f-squared, and Q-squared values

R-SQUARED		F-SQUARED				Q-SQUARED
		CAMB	EE	HSTR	IN	
CAMB	0.280				0.417	0.159
EE		0.112				
HSTR		0.050			0.178	
IN	0.476					0.320

Table 4
Path coefficients, total effects, t statistics, and p-values

	Hypotheses	Results			CI bias corrected	
		Path	T	P	2.5%	97.5%
FOS → SIC	H1 (p_1)	0.290	5.578	< 0.001	0.187	0.389
FOS → CAMB	H2a (p_2)	0.208	3.605	< 0.001	0.091	0.315
EE → (FOS-CAMB)	H2b	-0.123	3.345	0.001	-0.192	-0.049
EE → CAMB	-	0.318	6.075	< 0.001	-	-
CAMB → SIC	H3a (p_3)	0.519	9.822	< 0.001	0.401	0.611

while FOS has a medium impact on SIC (0.136) (see SUPPLEMENTARY DATA 1 – R2 & F2). Chin (1998) suggests that the Q-squared evaluates predictive relevance. For good predictive relevance, Q^2 values should be higher than zero. As the Q^2 values are significantly higher than zero, good model predictiveness was achieved.

Path coefficient values above 0.20 are usually significant (Hair et al., 2022); nonetheless, they must be statistically assessed through *t* statistics and the probability error (*p*-value). Table 4 shows that the path coefficients, *t* statistics, *p* values, and hypotheses H1, H2a, and H3a are significant (p < 0.01%). Hypothesis H2b (-0.123) corresponds to a moderating effect of EE between FOS and CAMB and is statistically significant (t = 3.345; p < 0.1%; -0.192, -0.049) (see SUPPLEMENTARY DATA 1 – statistics).

4.1 Mediation effects analysis

Recent literature has introduced new procedures to evaluate the mediation effect (Hair et al. 2022, p. 233; Nitzl et al. 2016, p. 7). First, it should be determined whether the product of $p_2.p_3$ is significant. Second, the sign and statistical significance of p_1 should be analyzed if the product of $p_2.p_3$ is significant. Third, if both are significant and have the same sign it configures complementary partial mediation.

Table 5 shows the mediating values of CAMB, characterizing partial mediation of CAMB between FOS and SIC (Nitzl et al., 2016). The research (Hair et al., 2022; Zhao et al., 2010) recommends using the VAF for assessing partial mediation (20% - 80%).

The VAF value for the paths FOS→CAMB→SIC and FOS→SIC is 24%, indicating the partial mediation of contextual ambidexterity, in line with the procedure of Nitzl et al. (2016) (see SUPPLEMENTARY DATA 1 – indirect effects).

Table 5
Specific indirect effects via bootstrapping spreadsheet

Mediating Effect (H3b)	Path	T-statistics	P-value
FOS → CAMB →SIC ($p_2.p_3$)	0.108	3.659	< 0.001
FOS → SIC (p_1)	0.290	5.578	< 0.001

4.2 Conditional process analysis (moderation-mediation effect)

The moderation of external embeddedness occurs at the first stage of mediation of contextual ambidexterity (Edwards & Lambert, 2007), constituting a conditional process model (Figure 1) (Hayes, 2015). The mediating effect depends on moderator values (Edwards & Lambert, 2007, p. 6; Hayes, 2015, p. 2). Consistently with the proposal of Muller et al. (2005), the conditional process occurs when the moderating effect of EE significantly moderates at least one path of the causal process (Figure 1). Table 6 shows that the moderating effect is significant (t = 3.345; p = 0.1%); consequently, external embeddedness is statistically a moderator.

Plotting the linear regression facilitates the analysis and can explain the meaning of the negative value of the EE moderating effect (-0.123). The moderation literature recommends using a simple slope test (Figure 2) to interpret the moderating effect (Hayes, 2015; Gardner et al., 2017). Figure 2 was built based on three criteria. First, flexible organizational structure (FOS) is a continuous variable plotted linearly on a scale from 1 to 10 and labeled at the ends as *high* and *low effectiveness*. *High FOS effectiveness* means that the subsidiary has successfully deployed a flexible structure that straightforwardly adapts to internal

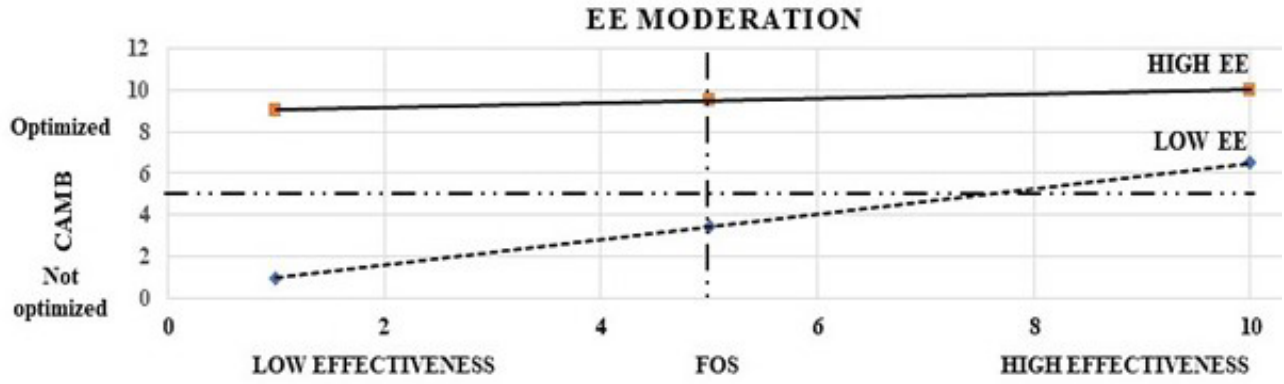

Figure 2. Slopes for high and low external embeddedness moderation

Table 6
Moderating effect of external embeddedness

	Structural coefficient (β)	T statistics	P value
Moderating Effect (EE)	- 0.123	3.345	0.001

and external changes. *Low FOS effectiveness* means the subsidiary has problems adapting to changes.

Second, external embeddedness (EE) is categorized as high and low EE (Cohen et al., 2014). *High EE* represents success in acquiring reliable and valuable knowledge via trustful interorganizational relationships. *Low EE* denotes that the subsidiary has failed to build trustful ties, leading to difficulties in accessing differentiated knowledge. Third, contextual ambidexterity is also a continuous variable on a scale from 1 to 10 and is labeled as *optimized* and *not optimized* at the ends. A high exploration-exploitation score means that the subsidiary has achieved an optimized exploration-exploitation balance. A balanced but not optimized exploration-exploitation level can weaken the outcomes of contextual ambidexterity, *i.e.*, the renewal of innovative capabilities. Graphically, EE is calculated using one standard deviation above the mean (high EE) and one standard deviation below the mean (low EE) (Cohen et al., 2014) (SUPPLEMENTARY DATA 1 – slopes).

Figure 2 suggests that EE moderates the positive relationship between FOS and CAMB, strengthening (synergizing) and accentuating the interaction effect as EE increases (Gardner et al., 2017). For low EE, CAMB is more sensitive to variations in FOS (steeper slope); whereas for high EE, there is a minor influence of FOS on CAMB due to its almost flat slope.

5 Discussion

The results respond to the research question, *"what conditions are necessary for a subsidiary to develop renewable innovative capabilities through flexible designs,"* and they support the five hypotheses. A flexible organizational structure (FOS) is critical to renewing innovative capabilities (Kortmann, 2012). Indeed, FOS can support the regeneration of rules, tasks, management systems, and communication (Damanpour & Aravind, 2012), adjustable to environmental changes, which means that renewable innovative capabilities allow for adjustment to the internal environment and responding to or even shaping the external environment (Teece, 2009).

Additionally, to renew its innovative capabilities, the subsidiary requires dynamic capabilities to exploit existing resources and simultaneously explore new knowledge (contextual ambidexterity) (O'Reilly & Tushman, 2013; Parashar & Singh, 2005), supporting hypothesis H3a. Therefore, we show that a flexible organizational structure is positively related to innovative capabilities and contextual ambidexterity, supporting hypotheses H1 and H2a (see Tables 4 and 5).

Moreover, knowledge can quickly become outdated in dynamic environments, and a trustful local network is a reliable source that can continuously provide differentiated knowledge (Alinaghian et al., 2020). The results indicate that contextual ambidexterity partially mediates the relationship between flexible structure and

innovative capabilities (H3b), while external embeddedness as a source of reliable knowledge moderates the relationship between flexible structure and contextual ambidexterity (H2b). These findings validate the proposed conditional process (moderation-mediation model – Figure 1) (Hayes, 2015, 2022).

We can highlight some theoretical and managerial contributions, which extend the recent strategic management, international business, and organizational theories research. First, in the context of MNE subsidiaries, we detect that a flexible structure is an important organizational antecedent to ambidexterity, specifically in enterprises with single structures, since the subsidiary needs to manage the conflicts that arise from simultaneous exploitation-exploration activities (Gibson & Birkinshaw, 2004). A flexible organizational structure combines features of a traditional organizational structure, mechanistic and organic structures (Burns & Stalker, 1961; Lawrence & Lorsch, 1967), and organizational innovation (Damanpour & Aravind, 2012). FOS helps achieve the simultaneous balance between exploitation and exploration, supporting fast changes in rules, procedures, management systems, and innovation processes (Damanpour & Aravind, 2012; Vaccaro et al., 2012).

Second, we use a conditional process analysis technique (Hayes, 2022) and the analytical integration of mediation and moderation analysis, a technique used in the behavioral and psychological research streams. Conditional process analysis is a methodological technique that is appropriate for studies involving complex relationships of several variables that work in consonance (Edwards & Lambert, 2007), as observed in recent studies in organizational theory research. Our study illustrates the usefulness of conditional process analysis in concurrently evaluating the mediation by contextual ambidexterity between a flexible structure and innovative capabilities and the moderation by external embeddedness between a flexible structure and ambidexterity.

Third, we contribute to the strategic management, international business, and organizational theory literature by synthesizing various research streams, including dynamic capabilities, contextual ambidexterity, innovative capabilities, organizational design, and network literature. We show that subsidiaries require dynamic capabilities to achieve simultaneous and balanced exploitation-exploration by applying the knowledge attained from the external network (Lessard et al., 2016).

Lastly, we offer implications for management practice. Top managers should pursue flexible structure effectiveness, high external embeddedness levels, and optimized exploitative and explorative activities. Accordingly, the critical issue for top managers is to create a trusted and committed local network to attain unique and differentiated resources through high levels of external embeddedness (EE). By achieving high EE, regardless of reaching any level of flexible effectiveness (high or low), the subsidiary will attain an optimized exploitation-exploration balance (contextual ambidexterity), facilitating the renewal of its innovative capabilities (Figure 2). However, in the case of achieving low external embeddedness (a network that is not trustful), managers should pursue a highly effective structure by investing their efforts in renewing routines and practices, introducing benefits, improving communication, and adjusting the structure to respond to environmental changes. However, as observed in the findings, a small window on the low EE slope (Figure 2) allows optimized exploration-exploitation. Low EE values below this window lead to a non-optimized exploration-exploitation balance, compromising the renewal of innovative capabilities.

6 Final remarks, limitations, and future agenda

The article shows the importance of flexible designs and dynamic capabilities in explaining renewable innovative capabilities. Flexible designs include contextual ambidexterity, combine traditional organizational structure theory and organizational innovation, and provide new knowledge for innovation through the development of a trustful local network. We highlight the role of dynamic capability and contextual ambidexterity in creating new knowledge and capabilities to renew innovative capabilities.

The primary limitation relates to using a cross-sectional study. Considering that dynamic environments can change significantly over time, it is important to develop longitudinal studies to evaluate how subsidiaries respond to environmental changes. Second, the sample and the survey were restricted to the management team actor's point of view. Thus, applying the survey instrument to the network actors, the primary source of knowledge, would enhance the analysis.

Our study focused on flexible designs and contextual ambidexterity as a dynamic capability for accessing reliable knowledge from the local network to

renew the subsidiary's innovative capabilities. However, the effectiveness of this process depends on how the subsidiary's individuals, such as the CEO, top and middle managers, and employees, orchestrate the existing and new resources and managerial systems that orientate the individuals in their activities. Therefore, we suggest for a future agenda that scholars also investigate the influence of individuals, human resources management practices (HRMP) (routines, managerial systems, and benefits), and corporate culture on renewing innovative capabilities. Additionally, we propose examining how different levels of environmental volatility, uncertainty, complexity, and ambiguity (VUCA) influence the operationality of the subsidiary's strategies. Using the microfoundations of dynamic capability, sense, seize, and transform, the subsidiary can maintain competitiveness by enhancing, combining, protecting, and reconfiguring the company's intangible and tangible assets (Teece, 2007), *i.e.*, improving exploration and exploitation activities (contextual ambidexterity). The use of multilevel analysis (O'Reilly & Tushman, 2008; Simsek et al., 2009) allows researchers to simultaneously examine the micro level (individuals and HRMP) and macro level (culture, organizational design, and environment) of the organization.

References

ALINAGHIAN, L., KIM, Y., & SRAI, J. (2020). A relational embeddedness perspective on dynamic capabilities: A grounded investigation of buyer-supplier routines. *Industrial Marketing Management*, *85*, 110-125. http://dx.doi.org/10.1016/j.indmarman.2019.10.003.

ANDERSSON, U., BJÖRKMAN, I., & FORSGREN, M. (2005). Managing subsidiary knowledge creation: The effect of control mechanisms on subsidiary local embeddedness. *International Business Review*, *14*(5), 521-538. http://dx.doi.org/10.1016/j.ibusrev.2005.07.001.

ANDERSSON, U., DELLESTRAND, H., & PEDERSEN, T. (2014). The contribution of local environments to competence creation in multinational enterprises. *Long Range Planning*, *47*(1-2), 87-99. http://dx.doi.org/10.1016/j.lrp.2013.10.002.

ATUAHENE-GIMA, K. (2005). Resolving the capability–rigidity paradox in new product innovation. *Journal of Marketing*, *69*(4), 61-83. http://dx.doi.org/10.1509/jmkg.2005.69.4.61.

BESSANT, J., & TIDD, J. (2015). *Innovation and entrepreneurship* (3rd ed.). John Wiley & Sons.

BIRKINSHAW, J., ZIMMERMANN, A., & RAISCH, S. (2016). How do firms adapt to discontinuous change? Bridging the dynamic capabilities and ambidexterity perspectives. *California Management Review*, *58*(4), 36-58. http://dx.doi.org/10.1525/cmr.2016.58.4.36.

BURNS, T., & STALKER, G. M. (1961). *The management of innovation.* Tavistock.

BURTON, R. M., & OBEL, B. (2018). The science of organizational design: Fit between structure and coordination. *Journal of Organization Design*, *7*(1), 1-13. http://dx.doi.org/10.1186/s41469-018-0029-2.

CAMPANELLA, F., DEL GIUDICE, M., THRASSOU, A., & VRONTIS, D. (2020). Ambidextrous organizations in the banking sector: An empirical verification of banks' performance and conceptual development. *International Journal of Human Resource Management*, *31*(2), 272-302. http://dx.doi.org/10.1080/09585192.2016.1239122.

CHIN, W. W. (1998). The partial least squares approach for structural equation modeling. In G. A. Marcoulides (Ed.*), Methodology for business and management. Modern methods for business research* (pp. 295-336). Lawrence Erlbaum Associates Publishers.

CHO, G., HWANG, H., SARSTEDT, M., & RINGLE, C. M. (2020). Cutoff criteria for overall model fit indexes in generalized structured component analysis. *Journal of Marketing Analytics*, *8*(4), 189-202. http://dx.doi.org/10.1057/s41270-020-00089-1.

COHEN, J. (2013). *Statistical power analysis for the behavioral sciences* (2nd ed.). Routledge. http://dx.doi.org/10.4324/9780203771587.

COHEN, P., WEST, S. G., & AIKEN, L. S. (2014). *Applied multiple regression/Correlation analysis for the behavioral sciences.* Psychology Press. http://dx.doi.org/10.4324/9781410606266.

CSASZAR, F. A. (2013). An efficient frontier in organization design: Organizational structure as a determinant of exploration and exploitation. *Organization Science*, *24*(4), 1083-1101. http://dx.doi.org/10.1287/orsc.1120.0784.

DAHLANDER, L., O'MAHONY, S., & GANN, D. M. (2016). One foot in, one foot out: How does individuals' external search breadth affect innovation outcomes? *Strategic Management Journal*, *37*(2), 280-302. http://dx.doi.org/10.1002/smj.2342.

DAMANPOUR, F., & ARAVIND, D. (2012). Organizational structure and innovation revisited: From organic to ambidextrous structure. In M. D. Mumford (Ed.), *Handbook of organizational creativity* (pp. 483-513). Academic Press. http://dx.doi.org/10.1016/B978-0-12-374714-3.00019-7.

DANNEELS, E. (2008). Organizational antecedents of second-order competences. *Strategic Management Journal*, *29*(5), 519-543. http://dx.doi.org/10.1002/smj.684.

DUNCAN, R. B. (1976). The ambidextrous organization: Designing dual structures for innovation. *The Management of Organization*, *1*(1), 167-188.

EDWARDS, J. R., & LAMBERT, L. S. (2007). Methods for integrating moderation and mediation: A general analytical framework using moderated path analysis. *Psychological Methods*, *12*(1), 1-22. http://dx.doi.org/10.1037/1082-989X.12.1.1. PMid:17402809.

ESCRIG, E. D., BROCH, F. F., ALCAMÍ, R. L., & GOMEZ, R. C. (2020). How to enhance radical innovation? The importance of organizational design and generative learning. *Review of Managerial Science*, *14*(5), 1101-1122. http://dx.doi.org/10.1007/s11846-019-00326-7.

FORNELL, C., & LARCKER, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *JMR, Journal of Marketing Research*, *18*(3), 382-388. http://dx.doi.org/10.1177/002224378101800313.

FOSS, N. J., LYNGSIE, J., & ZAHRA, S. A. (2015). Organizational design correlates of entrepreneurship: The roles of decentralization and formalization for opportunity discovery and realization. *Strategic Organization*, *13*(1), 32-60. http://dx.doi.org/10.1177/1476127014561944.

FOURNÉ, S. P., ROSENBUSCH, N., HEYDEN, M. L., & JANSEN, J. J. (2019). Structural and contextual approaches to ambidexterity: A meta-analysis of organizational and environmental contingencies. *European Management Journal*, *37*(5), 564-576. http://dx.doi.org/10.1016/j.emj.2019.04.002.

GARDNER, R. G., HARRIS, T. B., LI, N., KIRKMAN, B. L., & MATHIEU, J. E. (2017). Understanding "it depends" in organizational research: A theory-based taxonomy, review, and future research agenda concerning interactive and quadratic relationships. *Organizational Research Methods*, *20*(4), 610-638. http://dx.doi.org/10.1177/1094428117708856.

GIBSON, C., & BIRKINSHAW, J. (2004). Contextual determinants of organizational ambidexterity. *Academy of Management Journal*, *47*(2), 209-226.

GRANOVETTER, M. (1983). The strength of weak ties: A network theory revisited. *Sociological Theory*, *1*, 201-213. http://dx.doi.org/10.2307/202051.

GRANOVETTER, M. (1993). The nature of economic relationships. In R. Swedberg (Ed.), *Explorations in economic sociology* (pp. 3-41). Russell Sage Foundation.

GULATI, R. (1998). Alliances and networks. *Strategic Management Journal*, *19*(4), 293-317. http://dx.doi.org/10.1002/(SICI)1097-0266(199804)19:4<293::AID-SMJ982>3.0.CO;2-M.

HAIR Jr, J. F., HOWARD, M. C., & NITZL, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, *109*, 101-110. http://dx.doi.org/10.1016/j.jbusres.2019.11.069.

HAIR Jr, J. F., HULT, G. T. M., RINGLE, C., & SARSTEDT, M. (2022). *A primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (3rd ed.). Sage Publications.

HALLIN, C., HOLM, U., & SHARMA, D. (2011). Embeddedness of innovation receivers in the multinational corporation: Effects on business performance. *International Business Review*, *20*(3), 362-373. http://dx.doi.org/10.1016/j.ibusrev.2010.09.002.

HANSEN, M. T. (1999). The search-transfer problem: The role of weak ties in sharing knowledge across organization subunits. *Administrative Science Quarterly*, *44*(1), 82-111. http://dx.doi.org/10.2307/2667032.

HAVELI, M. Y., CARMELI, A., & BRUELLER, N. (2015). Ambidexterity in human resource management. *Human Resource Management*, *54*(1), 223-238.

HAYES, A. F. (2015). An index and test of linear moderated mediation. *Multivariate Behavioral Research*, *50*(1), 1-22. http://dx.doi.org/10.1080/00273171.2014.962683. PMid:26609740.

HAYES, A. F. (2022). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (3rd ed.). The Guilford Press.

HE, Z. L., & WONG, P. K. (2004). Exploration vs. exploitation: An empirical test of the ambidexterity hypothesis. *Organization Science*, *15*(4), 481-494. http://dx.doi.org/10.1287/orsc.1040.0078.

HELFAT, C. E., & PETERAF, M. A. (2003). The dynamic resource-based view: Capability lifecycles. *Strategic Management Journal*, *24*(10), 997-1010. http://dx.doi.org/10.1002/smj.332.

HELFAT, C. E., & WINTER, S. G. (2011). Untangling dynamic and operational capabilities: Strategy for the (n) ever-changing world. *Strategic Management Journal*, *32*(11), 1243-1250. http://dx.doi.org/10.1002/smj.955.

HENSELER, J. (2018). Partial least squares path modeling: Quo Vadis? *Quality & Quantity*, *52*(1), 1-8. http://dx.doi.org/10.1007/s11135-018-0689-6.

HENSELER, J., HUBONA, G., & RAY, P. A. (2016). Using PLS path modeling in new technology research: Updated guidelines. *Industrial Management & Data Systems*, *116*(1), 2-20. http://dx.doi.org/10.1108/IMDS-09-2015-0382.

HENSELER, J., RINGLE, C. M., & SARSTEDT, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115-135. http://dx.doi.org/10.1007/s11747-014-0403-8.

HENSELER, J., RINGLE, C. M., & SINKOVICS, R. R. (2009). The use of partial least squares path modeling in international marketing. In R. R. Sinkovics & P. N. Ghauri (eds.), *New challenges to international marketing*. Emerald Group Publishing Limited. http://dx.doi.org/10.1108/S1474-7979(2009)0000020014.

ISAAC, V. R., BORINI, F. M., RAZIQ, M. M., & BENITO, G. R. (2019). From local to global innovation: The role of subsidiaries' external relational embeddedness in an emerging market. *International Business Review*, *28*(4), 638-646. http://dx.doi.org/10.1016/j.ibusrev.2018.12.009.

KADUSHIN, C. (2012). *Understanding social networks: Theories, concepts, and findings.* Oxford University Press Inc.

KINGSHOTT, R. P. J. (2006). The impact of psychological contracts upon trust and commitment within supplier–Buyer relationships: A social exchange view. *Industrial Marketing Management*, *35*(6), 724-739. http://dx.doi.org/10.1016/j.indmarman.2005.06.006.

KOGUT, B. (1988). Joint ventures: Theoretical and empirical perspectives. *Strategic Management Journal*, *9*(4), 319-332. http://dx.doi.org/10.1002/smj.4250090403.

KORTMANN, S. (2012). *The relationship between organizational structure and organizational ambidexterity: A comparison between manufacturing and service firms.* Gabler Verlag/Springer Fachmedien Wiesbaden. https://doi.org/10.1007/978-3-8349-3630-1.<bok>

LAWRENCE, P. R., & LORSCH, J. W. (1967). *Organization and environment: Managing differentiation and integration.* Harvard University.

LESSARD, D., TEECE, D. J., & LEIH, S. (2016). The dynamic capabilities of Meta-multinationals. *Global Strategy Journal*, *6*(3), 211-224. http://dx.doi.org/10.1002/gsj.1126.

MUHAMMAD, F., IKRAM, A., JAFRI, S. K., & NAVEED, K. (2021). Product innovations through ambidextrous organizational culture with mediating effect of contextual ambidexterity: An empirical study of it and telecom firms. *Journal of Open Innovation: Technology, Market, and Complexity*, *7*(1), 9. http://dx.doi.org/10.3390/joitmc7010009.

MULLER, D., JUDD, C., & YZERBYT, V. (2005). When moderation is mediated and mediation is moderated. *Journal of Personality and Social Psychology*, *89*(6), 852-

863. http://dx.doi.org/10.1037/0022-3514.89.6.852. PMid:16393020.

NITZL, C., ROLDAN, J. L., & CEPEDA, G. (2016). Mediation analysis in partial least squares path modeling: Helping researchers discuss more sophisticated models. *Industrial Management & Data Systems*, *116*(9), 1849-1864. http://dx.doi.org/10.1108/IMDS-07-2015-0302.

O'REILLY 3rd, C. A., & TUSHMAN, M. L. (2008). Ambidexterity as a dynamic capability: Resolving the innovator's dilemma. *Research in Organizational Behavior*, *28*, 185-206. http://dx.doi.org/10.1016/j.riob.2008.06.002.

O'REILLY 3rd, C. A., & TUSHMAN, M. L. (2013). Organizational ambidexterity: Past, present, and future. *The Academy of Management Perspectives*, *27*(4), 324-338. http://dx.doi.org/10.5465/amp.2013.0025.

PARASHAR, M., & SINGH, S. K. (2005). Innovation capability. *IIMB Management Review*, *17*(4), 115-123.

RINGLE, C. M., WENDE, S., & BECKER, J. M. (2015). *SmartPLS 3.* SmartPLS GmbH. http://www.smartpls.com.

ROGBEER, S., ALMAHENDRA, R., & AMBOS, B. (2014). Open-Innovation effectiveness: When does the macro design of alliance portfolios matter? *Journal of International Management*, *20*(4), 464-477. http://dx.doi.org/10.1016/j.intman.2014.09.003.

ROTHAERMEL, F. T., & HESS, A. M. (2007). Building dynamic capabilities: Innovation driven by individual-, firm-, and network-level effects. *Organization Science*, *18*(6), 898-921. http://dx.doi.org/10.1287/orsc.1070.0291.

SCHÖLLHAMMER, S., & GIBB, S. (2019). Collectively innovating; modelling responsible exposure in heterarchical organisations. *International Journal of Innovation Science*, *12*(1), 127-141. http://dx.doi.org/10.1108/IJIS-03-2019-0023.

SIMSEK, Z., HEAVEY, C., VEIGA, J. F., & SOUDER, D. (2009). A typology for aligning organizational ambidexterity's conceptualizations, antecedents, and outcomes. *Journal of Management Studies*, *46*(5), 864-894. http://dx.doi.org/10.1111/j.1467-6486.2009.00841.x.

SINE, W. D., MITSUHASHI, H., & KIRSCH, D. A. (2006). Revisiting burns and stalker: Formal structure and new venture performance in emerging economic sectors. *Academy of Management Journal*, *49*(1), 121-132. http://dx.doi.org/10.5465/amj.2006.20785590.

SOUZABIDO, D., & SILVA, D. (2019). Smartpls 3: Specification, estimation, evaluation and reporting. *Administração: Ensino e Pesquisa–RAEP*, *20*(2), 465-514. https://link.gale.com/apps/doc/A600448544/IFME?u=anon~277825d&sid=googleScholar&xid=5bc272b6

STEINKE, A., & KOPP, B. (2020). RELEX: An excel-based software tool for sampling split-half reliability coefficients. *Methods in Psychology*, *2*, 100023. http://dx.doi.org/10.1016/j.metip.2020.100023.

TEECE, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of sustainable) enterprise performance. *Strategic Management Journal*, *28*(13), 1319-1350. http://dx.doi.org/10.1002/smj.640.

TEECE, D. J. (2009). *Dynamic capabilities and strategic management: Organizing for innovation and growth.* Oxford University Press on Demand.

TEECE, D. J., PETERAF, M., & LEIH, S. (2016). Dynamic capabilities and organizational agility: Risk, uncertainty, and strategy in the innovation economy. *California Management Review*, *58*(4), 13-35. http://dx.doi.org/10.1525/cmr.2016.58.4.13.

TUSHMAN, M. L., & O'REILLY 3rd, C. A. (1996). Ambidextrous organizations: Managing evolutionary and revolutionary change. *California Management Review*, *38*(4), 8-29. http://dx.doi.org/10.2307/41165852.

TUSHMAN, M., & NADLER, D. (1986). Organizing for innovation. *California Management Review*, *28*(3), 74-92. http://dx.doi.org/10.2307/41165203.

TUZOVIC, S., WIRTZ, J., & HERACLEOUS, L. (2018). How do innovators stay innovative? A longitudinal case analysis. *Journal of Services Marketing*, *32*(1), 35-45. http://dx.doi.org/10.1108/JSM-02-2017-0052.

VACCARO, I. G., JANSEN, J. J., VAN DEN BOSCH, F. A., & VOLBERDA, H. W. (2012). Management innovation

and leadership: The moderating role of organizational size. *Journal of Management Studies*, *49*(1), 28-51. http://dx.doi.org/10.1111/j.1467-6486.2010.00976.x.

VAHLNE, J. E., & JONSSON, A. (2017). Ambidexterity as a dynamic capability in the globalization of the multinational business enterprise (MBE): Case studies of AB Volvo and IKEA. *International Business Review*, *26*(1), 57-70. http://dx.doi.org/10.1016/j.ibusrev.2016.05.006.

WANG, C. L., & AHMED, P. K. (2007). Dynamic capabilities: A review and research agenda. *International Journal of Management Reviews*, *9*(1), 31-51. http://dx.doi.org/10.1111/j.1468-2370.2007.00201.x.

WINTER, S. G. (2003). Understanding dynamic capabilities. *Strategic Management Journal*, *24*(10), 991-995. http://dx.doi.org/10.1002/smj.318.

WU, J., & VAHLNE, J. E. (2020). Dynamic capabilities of emerging market multinational enterprises and the Uppsala model. *Asian Business & Management*. http://dx.doi.org/10.1057/s41291-020-00111-5.

ZHAO, X., LYNCH Jr, J. G., & CHEN, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *The Journal of Consumer Research*, *37*(2), 197-206. http://dx.doi.org/10.1086/651257.

APPENDIX - Questionnaire

Flexible Organizational Structure (FOS) in the last three years	*Authors*
Rules and procedures have been renewed.	Vaccaro et al. (2012)
The tasks and functions of our employees have been modified.	
New management systems have been implemented.	
The remuneration policy has been restructured.	
Communication within and between departments has been reorganized.	
The organizational structure has been improved.	
External Embeddedness (EE).	*Authors*
About external partners of the business network (suppliers, distributors, outsourcing) in the last three years	Hallin et al. (2011) Kingshott (2006)
More has been invested in the relationship with the main partners.	
A long-term relationship has been maintained with leading partners.	
It is vital to maintain the relationship with the main partners.	
The main partners are loyal.	
The main partners are honest and trustworthy.	
More trust has been acquired from leading partners.	
Mutual trust has helped the relationship with leading partners.	
The main partners keep the promises they make.	
Contextual Ambidexterity (CAMB) in the last three years	*Authors*
Exploration	He & Wong (2004)
Opened up new markets.	
Expanded product types.	
Entered new technological areas.	
Exploitation	
Improved product quality.	
Improved production flexibility.	
Reduced the cost of production.	
Improved yield or reduced raw material consumption.	
Subsidiary's Innovative Capability (SIC) in the last three years	*Authors*
Frequently provided higher quality products compared to the leading competitors.	Isaac et al. (2019) Andersson et al. (2014)
Developed new products.	
Developed new practices.	
The primary resources were allocated to develop diversified product lines.	

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