Journal of Business Research 123 (2021) 333–342

Contents lists available at ScienceDirect

Journal of Business Research

journal homepage: www.elsevier.com/locate/jbusres

Entrepreneurial capital leveraging innovation in micro firms: A mixed-methods perspective

Nuno Fernandes Crespo [a,*], Carla Curado [a], Mírian Oliveira [b], Lucía Muñoz-Pascual [c]

[a] CSG/ADVANCE, Department of Management, ISEG - Universidade de Lisboa, Lisbon, Portugal
[b] ADCVANCE/CSG, Escola de Negócios, PUCRS - Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre, Brazil
[c] Multidisciplinary Institute for Enterprise (IME), Faculty of Economics and Enterprise, University of Salamanca, Salamanca, Spain

ARTICLE INFO

Keywords:
Micro firms
Knowledge sharing
Entrepreneurial capital
Innovation
Mixed methods

ABSTRACT

This study examines whether intangible resources such as entrepreneurial capital and collecting and donating knowledge contribute to building the absorptive capacity of micro firms to achieve innovation. The study adopts a mixed-methods approach that follows a complementary explanatory design strategy that uses a dataset of 228 micro firms from Brazil. The main findings are that knowledge sharing collection influences absorptive capacity; knowledge sharing collection has a partial mediator role between entrepreneurial capital and absorptive capacity; entrepreneurial capital, knowledge sharing collection, and absorptive capacity contribute to innovation; and knowledge sharing collection influences knowledge sharing donation. The theoretical contributions are the expansion of the view on antecedents of absorptive capacity and innovation in micro firms. The study also has managerial consequences by disclosing the contribution of intangible resources to innovation. Additionally, the study presents the alternative configurations that managers can choose to implement in order to reach absorptive capability and innovation.

1. Introduction

Knowledge is a critical intangible resource for organizations to achieve a sustainable competitive advantage in a dynamic environment (Le & Lei, 2018; Yadav, Choudhary, & Jain, 2019; Muñoz-Pascual, Galende, & Curado, 2020). Knowledge sharing is an essential practice from a knowledge management perspective (Yadav et al., 2019) that involves different aspects (Balle & Oliveira, 2018), for example, an individual's involvement in sharing (Xue, Bradley, & Liang, 2011). This sharing consists of two processes: the donation and collection of knowledge (Hooff and Ridder, 2004). Several studies have used these two processes to represent knowledge sharing (e.g., Tuan, 2015; Kambey, Wuryaningrat, & Kumajas, 2018; Yadav et al., 2019).

Knowledge sharing is "the process where individuals mutually exchange their knowledge and jointly create new knowledge" (Hooff & Ridder, 2004, p. 118). According to these authors, knowledge sharing donation refers to an individual communicating their knowledge to another individual, while knowledge sharing collection means the process of consulting another individual to obtain their knowledge. The literature shows that knowledge sharing influences absorptive capacity (Costa & Monteiro, 2016; Curado, Oliveira, Maçada, & Nodari, 2017; Lo & Tian, 2019). Absorptive capacity means "the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends" (Cohen and Levinthal, 1990, p. 128). Nevertheless, knowledge sharing only explains part of absorptive capacity.

Absorptive capacity deals with external sources of knowledge that are especially relevant to micro firms. Based on the small number of employees, they need external knowledge to enhance innovation. Soo, Tian, Teo, and Cordery (2017) find that studies do not explore the relation between entrepreneurial capital and absorptive capacity. Entrepreneurial capital regards proactive employees with a strong commitment to the firm (Inkinen, Kianto, Vanhala, & Ritala, 2017) and can determine what makes some startups survive while others do not (Dyer & Mortensen, 2005; Rico & Cabrer- Borrás, 2019). To address this gap, this study examines the contribution of intangible resources (entrepreneurial capital, knowledge sharing collection, and knowledge sharing donation) to build absorptive capacity in micro firms to achieve innovation. This study attempts to clarify the following research questions:

* Corresponding author at: Rua Miguel Lupi, nº 20, office 314, 1249-078 Lisboa, Portugal.
E-mail addresses: ncrespo@iseg.ulisboa.pt (N. Fernandes Crespo), ccurado@iseg.ulisboa.pt (C. Curado), miriano@pucrs.br (M. Oliveira), luciamp@usal.es (L. Muñoz-Pascual).

https://doi.org/10.1016/j.jbusres.2020.10.001
Received 20 June 2020; Received in revised form 29 September 2020; Accepted 2 October 2020
Available online 14 October 2020

Q1. Do knowledge sharing donation and collection influence absorptive capacity?
Q2. Do knowledge sharing donation and collection have a partial or total mediator role between entrepreneurial capital and absorptive capacity?
Q3. Do entrepreneurial capital, knowledge sharing donation and collection, and absorptive capacity influence innovation?
Q4. Does knowledge sharing collection influence knowledge sharing donation?

This research adopts a mixed-methods approach. First, it tests an original model that uses a dataset of Brazilian micro firms by adopting structural equation modelling based on a partial least squares. Following that, the study adopts a fuzzy-set qualitative comparative analysis (fsQCA). The results contribute to a better understanding of the contribution of entrepreneurial capital and knowledge sharing to absorptive capacity and their influence on innovation from a knowledge-based perspective.

This paper is structured as follows: the next section presents the literature review; we describe the methodological procedures in section 3; sections 4 and 5 present the data analysis and a discussion of the quantitative results, respectively; sections 6 and 7 present the data analysis and discussion of the qualitative results, respectively; section 8 integrates the quantitative and qualitative approaches; and section 9 offers the study's conclusions, limitations, and suggestions for future work.

2. Theoretical background and research model

Micro firms commonly survive a shorter period than large firms (Wee & Chua, 2013). This study classifies micro firms the same way as the European Union (2015): turnover or balance sheets of less than or equal to €2 million, and less than 10 employees. Micro firms have some characteristics related to knowledge flow (Wee & Chua, 2013; Marzo & Scarpino, 2016). On one hand, these firms use more tacit than explicit knowledge as a consequence of the number of employees and their flat and flexible structure. On the other hand, they depend on external knowledge because of their internal resource constraints.

Knowledge management is a group of processes that create, store, share, and use knowledge (Zaim, Muhammed, & Tarim, 2019). Knowledge sharing is the key process in knowledge management that helps an organization achieve sustainable competitive advantage (Han, Yoon, & Chae, 2020; Lo & Tian, 2019). Knowledge sharing can be classified as explicit and tacit, knowledge sharing collection and knowledge sharing donation, and internal knowledge sharing and external knowledge sharing (Zhao, Wang, Zhang, & Pablos, 2020; Yao, Crupi, Minin, & Zhang, 2020). Knowledge sharing donation occurs when the individual communicates their knowledge to others, while knowledge sharing collection occurs when the individual asks somebody to share their knowledge. These two processes should be examined separately (Nguyen, 2019).

The relation between intellectual capital and knowledge sharing is rarely examined (Attar, Kang & Sohaib, 2019). Knowledge management, intellectual capital, and entrepreneurship are related to improving firm performance (Paoloni, Coluccia, Fontana, & Solimene, 2020). Entrepreneurial capital is related to the individual's entrepreneurial behavior in the organization (Inkinen et al., 2017), and it is associated with innovation (Paoloni et al., 2020). According to Inkinen et al. (2017), entrepreneurial behavior comprises two characteristics: commitment and proactivity. Commitment can explain the influence of entrepreneurial capital on knowledge sharing donation and means the individual thinks first of the firm and not of themselves, because knowledge sharing donation is the giving of knowledge to others. Proactivity regards the influence of entrepreneurial capital on knowledge sharing collection that means the individual will not wait for something to happen but will search for new knowledge. Furthermore, entrepreneurial capital promotes exploration (Cabrilo & Dahms, 2020) that can increase knowledge sharing. Thus, this study formulates the following hypotheses:

H1 – Entrepreneurial capital is positively related to the knowledge sharing donation in micro firms.
H2 - Entrepreneurial capital is positively related to the knowledge sharing collection in micro firms.

Absorptive capacity is a multidimensional concept that involves four capabilities: acquisition that is the ability to identify valuable knowledge, assimilation that is the ability to understand the acquired knowledge, transformation that is the ability to combine prior knowledge with the assimilated knowledge, and exploitation that is the ability to apply the transformed knowledge (Zahra & George, 2002). According to Nodari, Oliveira and Maçada (2016), absorptive capacity is relevant to effective knowledge sharing.

The firm develops absorptive capacity based on past experiences (Cohen & Levinthal, 1990) that indicates learning. All firms can absorb external knowledge (Ibarra-Cisneros & Hernandez-Perlines, 2019). According to Buenechea-Elberdin, Sáez, and Kianto (2017), Inkinen et al. (2017), and Cabrilo and Dahms (2020), entrepreneurial capital is important to the capability of learning. Thus, the following hypothesis is:

H3 - Entrepreneurial capital is positively related to the absorptive capacity in micro firms.

Several studies do not include the relation between knowledge sharing collection and knowledge sharing donation in their models (Le & Lei, 2018; Binsawad, Sohaib, & Hawryszkiewycz, 2019; Nguyen, Nguyen, Nguyen, Do, & Nguyen, 2019; Yadav et al., 2019). Nevertheless, knowledge sharing collection can stimulate individuals to donate their knowledge to the firm (Hooff & Ridder, 2004; Nodari et al., 2016). An illustrative example is provided by the empirical evidence from SMEs (Kambey, Wuryaningrat, & Kumajas, 2018). Thus, we formulate the following hypothesis:

H4 – Knowledge sharing collection is positively related to the knowledge sharing donation in micro firms.

Many studies identify knowledge sharing as an antecedent of absorptive capacity (e.g., Curado et al., 2017; Peltokorpi, 2017; Supartha & Ratih, 2017; Lo & Tian, 2019). According to them, the exposure of individuals to new knowledge can increase their chance of absorbing it. These authors measure knowledge sharing as one construct. Supartha and Ratih (2017) admit that knowledge sharing comprises two processes, although they measure it as one construct. Our study measures knowledge sharing as two constructs, knowledge sharing collection and knowledge sharing donation, in accordance with Hooff and Ridder (2004). The process of collection exposes the individual to new knowledge, in this case knowledge sharing collection positively influences absorptive capacity. In the same vein, the donation of knowledge also exposes their colleagues to new knowledge. Due to the smallness of the firm, knowledge sharing donation also influences absorptive capacity. Thus, the next hypotheses are:

H5 – Knowledge sharing donation is positively related to absorptive capacity in micro firms.
H6 – Knowledge sharing collection is positively related to absorptive capacity in micro firms.

Innovation is defined as "the production or adoption of novel and useful systems, processes, products, or services'' (Yoo, Vonderembse, & Ragu-Nathan, 2011, p. 333). Absorptive capacity has a positive influence on innovation (Oliveira, Curado, Maçada, & Nodari, 2015; Curado

et al., 2017; Kang & Lee, 2017; Lo & Tian, 2019). New knowledge is fundamental to innovation, the firm also needs to have the capacity to absorb this knowledge. Absorptive capacity is relevant to transform new knowledge into organizational innovation. According to Hong, Zheng, Deng, and Zhou (2019, p. 5), absorptive capacity "has significant impacts on innovation speed, innovation frequency and innovation degree." Thus, the next hypothesis is:

H7 – Absorptive capacity is positively related to the innovation in micro firms.

3. Methods

This study adopts a mixed-methods approach with a complementary explanatory design (Johnson & Onwuegbuzie, 2004) that uses a dataset of micro firms from Brazil. Studies have adopted this approach to gain a better understanding of a phenomenon by using qualitative and quantitative methods (Venkatesh, Brown, & Bala, 2013). To fully implement this approach we use sequential phases (Creswell & Tashakkori, 2007): data collection, analysis, and integration. The literature presents mixed-methods designs in the context of several disciplines, such as innovation (Curado et al., 2018; Muñoz-Pascual et al., 2019a; Muñoz-Pascual et al., 2020). Following Creswell and Clark (2011), this study adopts a complementary explanatory design because a) the study had limited time, so we simultaneously collected data for both methods; and b) the research team had skills in both quantitative and qualitative methods of research and therefore could manage both the data collection and analysis. The mixed methods offer the concurrent collection, analysis, and interpretation of the data and findings (Stentz, Plano, Clark, & Matkin, 2012).

3.1. Data collection and sample

The data come from an electronic questionnaire. The questionnaire was made available by Qualtrics®. The questionnaire was sent via e-mail to micro firms in the south of Brazil. The sample was not probabilistic. It was chosen by judgment, and the results obtained cannot be extrapolated. We received 251 responses to the questionnaire but removed 23 observations after applying cleaning procedures (Hair, Black, Babin, & Anderson, 2009). This procedure left 228 valid observations that represented one person from each firm who was either a manager or a director.

3.2. Measures

The instrument is based on pre-existing measures, and using uses a seven-point Likert scale that ranges from "strongly disagree" to "strongly agree" to measure the answers to the questions, as recommended by Cooper and Schindler (1998). The scale for innovation comes from Hussinki, Ritala, Vanhala, and Kianto (2017). In this scale, the respondents compared their firm to their main competitors in the same industry. The absorptive capacity is measured with a scale from Yoo et al. (2011). The scales for knowledge sharing collection and knowledge sharing donation come from Nodari et al. (2016), even though the original scales were developed by Hooff and Ridder (2004). The scale for entrepreneurial capital comes from Inkinen et al. (2017).

The study adopts the following procedures to guarantee quality: a reverse translation (English-Portuguese-English), content validity, and face validity. Appendix A presents the final version of the items.

3.3. Quantitative study

The quantitative study adopts a traditional statistical analysis based on the PLS-SEM approach, in accordance with Hair, Hult, Ringle, and Sarstedt, (2014), to test the hypotheses in the model and to estimate the specific indirect effects to verify mediation. The software the study uses is Smart PLS 3.0®. The factorial exploratory analysis and descriptive statistics are calculated with SPSS 21.0®. The study initially presents the descriptive measures and exploratory factor analysis and then sequentially addresses the assessment of the measurement model, the assessment of the SEM, and the mediation test.

3.4. Qualitative study

The qualitative study uses fsQCA (Ragin, 1987) to get a deeper understanding of the complex, nonlinear, and synergistic effects of the entrepreneurial sources that result in innovation at micro firms. The application of fsQCA in entrepreneurship and innovation research is on the rise according to Kraus, Ribeiro-Soriano, and Schüssler (2018) and is adequate for the entrepreneurship and innovation research of SMEs (Curado, 2018; Curado et al., 2018; Muñoz-Pascual et al., 2019b). This technique uses an interplay among conditions, combinations of conditions, and a given outcome (Ragin, 1987, 2000). Each configuration of causal conditions and the associated outcome becomes a case (Fiss, 2007). This study follows a sequential qualitative approach by using fsQCA (Lisboa, Skarmeas, & Saridakis, 2016; Skarmeas, Lisboa, & Saridakis, 2016) that reflects the mediated model tested in the quantitative approach in order to establish the configurations of conditions that lead to innovation. The use of fsQCA represents an advantage compared to traditional quantitative statistical techniques. These techniques only estimate a single solution (net effects) for the presence of the outcome based on correlations (Rihoux & Ragin, 2009). Thus, they have important limitations in their ability to account for complex interactions between variables (Osabutey & Jin, 2016). The use of fsQCA also offers the possibility of generating a solution for the absence of the outcome that is an advantage that traditional quantitative statistical techniques cannot match.

4. Data analyses: Quantitative study

4.1. Exploratory factor analysis and descriptive measures

This study adopts an exploratory factorial analysis (EFA) with a principal component analysis and a varimax rotation method according to Hair et al. (2014). It removes items EC1, EC5, and AC1 because their values are lower than 0.7. Table 1 presents the EFA and the descriptive measures. The variance explained by the factors found in the analysis correspond to 74.56% of the variance in the instrument, which is above the recommended value of 60%.

4.2. Assessment of the measurement model

We test the reliability by using Cronbach́s Alpha, rho_A, and the composite reliability. As shown in Table 2, all constructs have values higher than the minimum recommended by Hair et al. (2014). Further, we test the convergent validity in two ways: an analysis of variance extracted (AVE) that should exceed 0.5 in each construct as recommended by Bagozzi and Yi (1988), and the composite reliability (CR) that should be over 0.8 as recommended by Koufteros (1999).

The discriminant validity is assessed with two criteria: the Fornell-Larcker and the heterotrait-monotrait ratio of correlations (HTMT). The square root of the AVE for each construct is larger than the correlations between the constructs (Table 3), which is as recommended by Hair et al. (2014).

The maximum HTMT value is below 0.90 that is the most conservative HTMT value as recommended by Hair et al. (2014). The results for the discriminant validity are in Tables 3 and 4.

The model does not suffer from collinearity (Table 5) as the variance inflation factor (VIF) is below 5, which is the threshold recommended by Hair et al. (2014). Further, the model does not suffer from a common method bias (Table 5) because the VIF is below 3.3, which is also the threshold recommended by Hair et al. (2014).

Table 1
Exploratory factorial analysis and descriptive measures.

Construct	Item	KSc	KSd	IN	EC	AC	Average	Standard deviation
EC	EC2				0.780		4.71	1.739
	EC3				0.797		4.25	1.656
	EC4				0.782		4.98	1.546
	EC6				0.772		4.45	1.762
KSd	KS1		0.848				5.63	1.323
	KS2		0.889				5.67	1.335
	KS3		0.803				5.64	1.256
KSc	KS4	0.804					5.83	1.212
	KS5	0.844					5.70	1.364
	KS6	0.746					5.57	1.548
AC	AC2					0.794	5.99	1.191
	AC3					0.784	5.68	1.347
	AC4					0.743	5.68	1.386
	AC5					0.753	5.86	1.235
IN	IN1			0.708			5.16	1.688
	IN2			0.783			4.99	1.699
	IN3			0.730			5.05	1.611
	IN4			0.743			4.38	1.841
	IN5			0.833			4.82	1.658

Table 2
Reliability and Convergent Validity.

	Cronbach's Alpha	rho_A	CR	AVE
Innovation (IN)	0.8633	0.8747	0.9014	0.6474
Absorptive capacity (AC)	0.8955	0.9009	0.9274	0.7618
Knowledge sharing collection (KSc)	0.9256	0.9274	0.9529	0.8708
Knowledge sharing donation (KSd)	0.9279	0.9361	0.9545	0.8750
Entrepreneurial Capital (EC)	0.8971	0.9038	0.9284	0.7644

Table 3
Fornell-Larcker.

	AC	EC	IN	KSc	KSd
AC	**0.8728**				
EC	0.5132	**0.8743**			
IN	0.5943	0.3857	**0.8046**		
KSc	0.5156	0.6095	0.2894	**0.9332**	
KSd	0.4985	0.5707	0.3097	0.7798	**0.9354**

Table 4
The heterotrait-monotrait ratio of correlations (HTMT).

	AC	EC	IN	KSc	KSd
AC					
EC	0.5698				
IN	0.6679	0.4395			
KSc	0.5628	0.6651	0.3168		
KSd	0.5427	0.6204	0.3360	0.8388	

Table 5
VIF.

	AC	EC	IN	KSc	KSd
AC			1.0000		
EC	1.5910			1.0000	1.5910
IN					
KSc	1.5910				1.5910
KSd					

4.3. Assessment of the structural model and mediation test

We verify the significance of the relations with a bootstrapping algorithm. The *t* values support all the hypotheses except H5. They are above 1.96, but the *t* value for H5 is less than 1.96 (Table 6).

According to the results, approximately 35.3% of the variance in the innovation can be explained by the constructs knowledge sharing collection, entrepreneurial capital, and absorptive capacity; approximately 32.9% of the variance in the absorptive capacity can be explained by the constructs knowledge sharing collection and entrepreneurial capital; approximately 37.1% of the variance in the knowledge sharing collection can be explained by the construct entrepreneurial capital; and approximately 62.3% of the variance in the knowledge sharing donation can be explained by the knowledge sharing collection and entrepreneurial capital. Fig. 1 shows the R^2.

The study uses bootstrapping to test the mediation. There are significant indirect effects that confirm the mediation (Table 7).

The f-square (f^2) for the relations EC → AC, KSc → AC, and EC → KSd are between 0.02 and 0.15, which according to Hair et al. (2014) is small. On the other hand, the f^2 of the relations AC → IN, EC → KSc, and KSc → KSd are above 0.35, which according to Hair et al. (2014) are large. Table 8 shows the results for the f^2.

5. Quantitative study: Discussion

This research confirms that entrepreneurial capital influences knowledge sharing collection and knowledge sharing donation as well as absorptive capacity. Entrepreneurial capital reflects a commitment to the firm that may explain its influence on knowledge sharing donation (H1) and proactivity that can reflect the influence on knowledge sharing collection (H2) and absorptive capacity (H3). Knowledge sharing collection is a partial mediator of the relation between entrepreneurial capital and absorptive capacity.

We confirm H4 that is in alignment with Hooff and Ridder (2004),

Table 6
Results of the hypothesis test.

Hypotheses: Path	Coefficient	t value	P	Hypotheses
H1: EC → KSd	0.152	2.7180	0.0067	**Supported**
H2: EC → KSc	0.609	11.9428	0.0000	**Supported**
H3: EC → AC	0.316	3.6684	0.0003	**Supported**
H4: KSc → KSd	0.687	3.7442	0.0002	**Supported**
H5: KSd → AC	–	1.783	0.0749	**Not supported**
H6: KSc → AC	0.323	10.9832	0.0000	**Supported**
H7: AC → IN	0.594	11.1868	0.0000	**Supported**

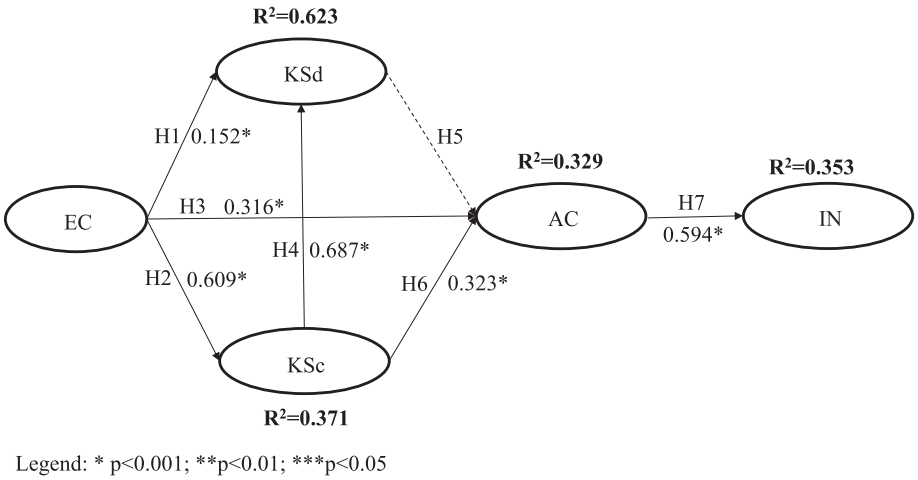

Fig. 1. Final model.

Table 7
Specific indirect effects.

Paths (P)	t statistics	p value
P1: EC → KSc → AC	3.3949	0.0007
P2: EC → AC → IN	3.3961	0.0007
P3: KSc → AC → IN	3.4318	0.0006
P4: EC → KSc → AC → IN	3.1193	0.0019
P5: EC → KSc → KSd	8.1418	0.0000

Table 8
- f^2.

	AC	EC	IN	KSc	KSd
AC			**0.5462**		
EC	0.0938			**0.5910**	0.0384
IN					
KSc	0.0975				**0.7868**
KSd					

Kamasak and Bulutlar (2010), and Kambey et al. (2018). The collection behavior influences the donation behavior possibly due to reciprocity. According to Nodari et al. (2016), knowledge sharing donation occurs after knowledge sharing collection, because donation has a greater cost than its benefit, and collection has a greater benefit than its cost. This result is relevant, because several studies have not tested it in their models.

Knowledge sharing donation does not significantly increase the quantity of knowledge of the emitter that explains the fact that there is no support for H5. Knowledge sharing collection increases the quantity of knowledge that somebody possesses and therefore promotes absorptive capacity and supports H6. Studies have identified the influence of knowledge sharing on absorptive capacity (Curado et al., 2017; Peltokorpi, 2017; Supartha & Ratih, 2017; Lo & Tian, 2019), and this study partially supports this influence. The use of two processes to measure knowledge sharing makes possible the identification of knowledge sharing collection (and not knowledge sharing donation) as the only influence on absorptive capacity.

This study shows support for H7. This result is in alignment with Oliveira et al. (2015), Kang and Lee (2017), and Lo and Tian (2019). The renewal of the knowledge base is relevant to promoting innovation that explains the influence of absorptive capacity on innovation.

6. Data analyses: Qualitative study

6.1. Calibration

The conditions used in the qualitative approach correspond to constructs from the quantitative approach. In order to perform fsQCA, the different variable levels need to represent meaningful groups (Ragin, 2008; Crilly, Zollo, & Hansen, 2012) from full membership (1.00) to full non-membership (0.00) and a crossover point of membership at the maximum ambiguity (0.50) that reflects theoretical and empirical knowledge of the variables (Ragin, 2005; 2008). Researchers use theoretical arguments to establish the thresholds of the three breakpoints and knowledge of the collected data to classify the empirical evidence as in the different subsets. Following Ragin (2008), we set the threshold for full membership at 0.95, the crossover point of membership ambiguity at 0.50, and the threshold for full non-membership at 0.05. Table 9 gives the statistics of the conditions and the outcome, and the cut-off points used for calibration.

Regarding the conditions and outcomes measured with the Likert scale, we compute the average values of the items for each variable (Woodside, Hsu, & Marshall, 2011). Further, we adjust full non-membership, the crossover point, and full membership based on the number of items in each scale and the descriptive statistics (Woodside, Prentice, & Larsen, 2015).

6.2. Necessity and sufficiency analysis

Following best practices, we assess the necessity and sufficiency of the causal conditions. The causal condition's degree of necessity indicates how much the outcome requires the condition to occur, yet its presence is not sufficient to obtain the outcome. According to Ragin

Table 9
Descriptive statistics and calibration.

Conditions and Outcome	Descriptive Statistics (n = 172)	Calibration
Entrepreneurial capital (EC)	μ = 4.82, σ = 1.31, min = 1, max = 7	(6.6;5.1;2.8) *
Knowledge sharing collection (KSc)	μ = 5.70, σ = 1.28, min = 1, max = 7	(6.9;6.0;5.1) *
Knowledge sharing donation (KSd)	μ = 5.65, σ = 1.22, min = 1, max = 7	(6.9;5.7;4.9) *
Absorptive capacity (AC)	μ = 5.85, σ = 1.07, min = 1.2, max = 7	(6.9;5.9;5.1) *
Innovation (IN)	μ = 4.88, σ = 1.36, min = 1, max = 7	(6.7;5.1;2.7) *

* - cut-off points at 0.95; 0.50; 0.05

(2000), the necessary conditions must present consistency values that surpass a 0.80 threshold. There are no necessary conditions to achieve AC, IN, or ~ IN, but there is a necessary condition to achieve ~ AC: ~EC.

On the other hand, the causal condition's degree of sufficiency shows how much it contributes to the outcome (Fiss, Sharapov, & Cronqvist, 2013). The configurations (combinations of causal conditions that lead to the outcome) are also known as sufficient condition sets. When conducting the sufficiency analysis, we confirm that the truth table analysis respects the minimum consistency thresholds for raw consistency (0.80) and PRI consistency (0.75) (Ragin, 2006). Based on Ragin (2008), we report the intermediate solutions of the models. The configurations in the reported solutions are exclusively core conditions (Ragin, 2000, 2008; Fiss, 2011; Fiss et al., 2013). Table 10 shows that there are three configurations that lead to AC and two that lead to IN.

Table 11 presents the intermediate solutions for ~ AC and ~ IN. There is a single configuration that leads to ~ AC and two that lead to ~ IN.

6.3. Quality criteria

Regarding the qualitative component of the study we propose a methodological approach that permits replication that removes possible researcher bias from the study and enables the assessment of the internal or descriptive (Maxwell, 1992) validity of the research. Following Venkatesh et al. (2013), we have exploited the rigor in the application of methods (design validity) and the rigor in the interpretation of the data (analytical and inferential validities). Regarding design validity, we carefully designed the qualitative component of the study to produce credible results. Regarding analytical validity, we collected and analyzed data to generate consistent and reasonable results. Finally, regarding inferential validity, we provided a clear interpretation of the results that allows others to validate them. Although the dependence on context in qualitative studies prevents generalization of the results, the analysis can be replicated without restrictions.

7. Qualitative study: Discussion

The results show three configurations that lead to AC and only two configurations that lead to IN. These configurations indicate that AC is easier to reach than IN in Brazilian micro firms. Additionally, there is a single configuration that leads to the absence of AC and two configurations that lead to the absence of IN. Such findings reinforce that IN is really more difficult to reach than AC.

The paths that lead to AC involve both KS conditions, and KSc and KSd separately with EC. These findings are consistent with H5 and H6 and H2, H3, H5 and H6, respectively. First, having KSd and KSc leads to AC. Second, having either KSc or KSd with EC also results in AC. Such results point to the relevancy of KS and its complementarity with EC in support of AC.

The paths that lead to IN involve AC and KSc * ~KSd * EC. These findings are consistent with H4 and H7. Such results show that IN may depend directly on AC. Alternatively, having KSc and EC, even in the absence of KSd, leads to IN. Such findings show the importance of AC because it is a sufficient but not necessary condition to reach IN. The second configuration that leads to IN (KSc * ~KSd * EC) raises an interesting issue for knowledge protection: it includes ~ KSd. We can relate shielding knowledge (not donating it) to preventing unrequested knowledge donation from occurring. Since AC involves organizational resources, this mechanism is most probably intentional to protect the sources of competitive advantage.

Regarding the solutions that lead to the absence of the outcomes, there is a single path that leads to ~ AC. It involves ~ KSc * ~EC, which *a contrario* is consistent with the results from the quantitative phase (H3 and H6 in Table 6). ~ EC is a necessary condition for ~ AC, yet ~ EC alone is not a sufficient condition for ~ AC. It is just one of the conditions in the configuration that leads to ~ AC. The configuration shows managers that no KSc and not having any EC leaves the firms with very low levels of (at worst, none) AC.

There are two paths that lead to ~ IN, and they both involve ~ AC: ~KSd * ~AC and KSc * ~AC. Thus, such findings may be considered consistent with the quantitative analysis (H7 in Table 6). The configurations show that not being able to develop AC is fatal to the innovation capability of firms. This finding highlights the central role of AC in reaching IN for managers.

The qualitative study's results complement the quantitative study by providing alternative configurations that lead to both AC and IN as well as configurations that lead to ~ AC and ~ IN. They emphasize the relevance of AC, KSc, and EC to IN as well as providing configurations for the ~ IN. The qualitative results show that the addressed phenomena are complex and that there are several alternative paths that lead to both the presence and the absence of the outcomes. All in all, the managers of Brazilian micro firms have reasons to be optimistic: there are more configurations that lead to the presence than to the absence of both AC and IN.

Table 10
Intermediate solutions for AC ([a]) and IN ([b]).

Model a: AC = f (EC, KSc, KSd)					
Model b: IN = f (EC, KSc, KSd, AC)					
Configurations		Configuration's Coverage	Configuration's Consistency	Solution's Coverage	Solution's Consistency
AC 1	KSc * KSd	0.663288	0.828409	0.791856	0.816183
AC 2	KSc * EC	0.639883	0.883659		
AC 3	KSd * EC	0.664934	0.880498		
IN 1	AC	0.792150	0.790591	0.815551	0.780598
IN 2	KSc * ~ KSd * EC	0.336506	0.879061		

8. Integration of approaches

We reached our findings by combining qualitative and quantitative findings and thus developing a consensus result. This procedure is particularly suitable for our sequential mixed-methods approach (Venkatesh et al., 2013) in which this study provides an expanded view of the antecedents of absorptive capacity and innovation in Brazilian micro firms. This work was much guided by quality criteria, both regarding the quantitative and qualitative components of the study.

Regarding the quantitative component of validity, this study provides a methodological approach that tests an original research model that used a survey. We report accurate findings that objectively represent the phenomenon and that ensure the measurement and inferential validities of the results in the quantitative component (Cook and Campbell 1979; Shadish, Cook, & Campbell, 2002). Measurement validity regards reliability and construct validity. In this study we confirm the internal consistency by using Cronbachs Alpha, rho_A, and composite reliability. Construct validity comes from the discriminant validity of the model by considering two criteria (Fornell-Larcker and heterotrait-monotrait ratio of correlations) and an additional factorial analysis. Inferential validity assesses the correct statistical conclusion based on inferences about the correlation (covariation) between the independent and dependent variables. In this study the quantitative research model presents no collinearity by explaining approximately 35.3% of the variance in the innovation.

The qualitative component of the study uses a methodological approach that permits replication by removing possible researcher bias from the study and enabling the assessment of the internal or descriptive validity of the research (Maxwell, 1992). Following Venkatesh et al.

Table 11
Intermediate solutions for ~ AC ([c]) and ~ IN ([d]).

Model c: ~AC = f (EC, KSc, KSd) Model d: ~IN = f (EC, KSc, KSd, AC)					
Configurations		Configuration's Coverage	Configuration's Consistency	Solution's Coverage	Solution's Consistency
~ AC 1	~ KSc * ~ EC	0.707579	0.855819	0.707579	0.855819
~ IN 1	~ KSd * ~ AC	0.637327	0.828869	0.732055	0.814930
~ IN 2	KSc * ~ AC	0.294010	0.821890		

(2013), we have rigorously applied methods (design validity) and rigorously interpreted the data (analytical and inferential validities). We have carefully designed the qualitative study that generated credible results. Further, we collected and analyzed data that generated consistent and reasonable results. Finally, we provide a clear interpretation of the results that others can validate.

Table 12
Comparison between this study's results and the literature.

Results from this research	Previous contributions
Entrepreneurial capital influences both knowledge sharing collection and donation. Entrepreneurial capital directly influences knowledge sharing collection and entrepreneurial capital influences knowledge sharing donation but is partially mediated by knowledge sharing collection.	Cabrillo and Dahms (2020) indirectly support the relation between entrepreneurial capital and both knowledge sharing collection and donation. However, studies have not tested them before.
Entrepreneurial capital influences absorptive capacity but is partially mediated by knowledge sharing collection that emphasizes the relevance of entrepreneurial capital and knowledge sharing collection in support of absorptive capacity.	Buenechea-Elberdin, Sáez, and Kianto (2017), Inkinen et al. (2017), and Cabrilo and Dahms (2020) did not test the relation but indirectly support it.
Knowledge sharing collection influences knowledge sharing donation and could be explained as a reciprocity behaviour. When an individual collects knowledge, they know that somebody is donating knowledge to them that leverages their knowledge donating behaviour.	Hooff and Ridder (2004) and Nodari et al. (2016) find similar results. Although Le and Lei (2018), Binsawad et al. (2019), Nguyen et al. (2019), and Yadav et al. (2019) do not consider the influence of knowledge sharing collection on knowledge sharing donation.
Only knowledge sharing collection influences absorptive capacity and is explained by the creation of new knowledge.	Curado et al. (2017), Peltokorpi (2017), Supartha and Ratih (2017), and Lo and Tian (2019) show the influence of knowledge sharing in absorptive capacity. However, none of them have used knowledge sharing split into two processes.
Knowledge sharing collection and entrepreneurial capital influence innovation but is mediated by absorptive capacity. Assessing new knowledge is relevant for innovation, but it is not enough. Individuals need to understand, transform, and apply it that means absorptive capacity is necessary.	The influence of absorptive capacity in innovation was identified by Oliveira et al. (2015), Curado et al. (2017), Kang and Lee (2017), and Lo and Tian (2019).
This study considers absorptive capacity as a mediator variable in the SEM analysis and simultaneously displays the configurational analysis of the mediating variable (absorptive capacity) and the contribution of the mediating variable (absorptive capacity) to the dependent variable (innovation). Additionally, no early study complements the investigation by addressing the configurational analysis that leads to the absence of the outcomes.	Ali, Kan, and Sarstedt's (2016) mix methods study uses the SEM (absorptive capacity as the antecedent to innovation) and fsQCA (absorptive capacity and innovation as the causal conditions for organizational performance). Yáñez-Araque, Hernández-Perlines, and Moreno-Garcia's (2017) mix methods study uses the SEM (absorptive capacity as antecedent to innovative capacity and organizational performance) and fsQCA (absorptive capacity and innovative capacity as the causal conditions for organizational performance.)

Considering both methods, the study's major achievements are listed and compared with previous research works in Table 12.

9. Conclusion

This study examines the sources of innovation in micro Brazilian firms by considering the contributions of entrepreneurial capital, knowledge sharing, and absorptive capacity. It combines a quantitative study with a qualitative one. Implications for theory and recommendations for managers emerge from this research. The theoretical contributions expand the view on the antecedents of absorptive capacity and innovation in micro firms that highlights the contribution of intangible resources to innovation. Theoretically, the study not only estimates a solution for innovation based on correlations; but additionally, it displays the complex and alternative interactions between variables that also generate absorptive capacity and innovation. Further, it shows the alternative interactions between variables that generate the absence of absorptive capacity and innovation (Osabutey & Jin, 2016; Rihoux & Ragin, 2009). From a theoretical standpoint the study shows that the complexity of the addressed phenomena as well as the complexity of the absence of such occurrences involve collecting and donating knowledge.

The methodological contribution regards the original approach to the data analysis by paralleling the mediation tests from the quantitative study with the sequential configurational analysis developed in the qualitative study. Such a methodological option validates the pivotal role of the mediating variable. On the one hand, the quantitative study offers evidence from the mediation tests and, on the other hand, the qualitative study simultaneously displays the configurational analysis of the mediating variable and the contribution of the mediating variable to the dependent variable. Such a methodological approach results in the corroboration of findings from the two studies and thus a robust contribution. Additionally, no earlier study complements the investigation by addressing the configurational analysis that leads to the absence of the outcomes.

The study also provides an original example of using a double rationale for knowledge sharing: collection and donation. Following Hooff and Ridder (2004), knowledge sharing should be measured as two constructs, because they can lead to different results. This study confirms that these two processes are important because they lead to different results. While collecting knowledge is relevant to increasing absorptive capacity, it is equally important to increasing the donation of knowledge. Knowledge sharing donation is not relevant to enhancing absorptive capacity, namely when analyzing its net effects. Nevertheless, the configurational approach shows that simultaneously taking both processes may lead to absorptive capacity as well as each of these processes combined with entrepreneurial capital.

The managerial and practical implications of this study regard the potential use of results from Brazilian micro firms. The study provides guidance on decision-making for managers on what leads to innovation and what generates the lack of innovation. Thus, managers can better decide which decisions to adopt and which to avoid. Managers have a clear demonstration of the contribution of intangible antecedents to absorptive capacity and consequently to innovation. Micro firms' managers should encourage their employees to collect knowledge when

the intention is to increase absorptive capacity and innovation. Furthermore, they could adopt practices to increase this collection, such as at meetings for the lessons learned, communities of practice, and internal knowledge yellow pages. In micro firms, because of their small number of employees, they must collect knowledge from outside stakeholders. This collection could occur when developing partnerships and engaging in networks or by participating in industrial associations and professional meetings. The other way to increase absorptive capacity is by focusing on entrepreneurial capital. Human resource managers could consider this focus during the processes of recruitment and selection of employees, and by incentivizing the employees' proactivity. Entrepreneurial capital positively influences absorptive capacity and knowledge sharing (collection and donation).

Like others, this study suffers from limitations. First, it does not control for the effects of industry. Future research should consider the distinction among different types of industries (e.g., knowledge intensive vs. non-intensive, technological vs. manufacturing firms) and expand the findings to small, medium, and large firms. Second, the findings are based on one answer per firm. Nevertheless, the effect on the results should be negligible because micro firms have a reduced number of employees. Third, absorptive capacity involves four dimensions (identify, understand, transform, and apply) and is a single first-order construct. Future research could measure absorptive capacity as a second order construct and explore whether donating knowledge is related to any of its dimensions. The sample is not probabilistic, so the results cannot be generalized. Future research could repeat this research in different cultures using a probabilistic sample.

Acknowledgements

We gratefully acknowledge financial support from CNPq and CAPES (Brazil), FCT (Fundação para a Ciência e Tecnologia - Portugal) under project UID/SOC/04521/2019 and Ministerio de Ciencia e Innovación del Gobierno de España under project PID2019-107546GA-I00– AEI/FEDER, UE.

Appendix A. – Constructs and items

Absorptive Capacity (Yoo et al., 2011):
My firm has the capacity to:
AC1 - Use existing knowledge.
AC2 – Recognize the value of new information or knowledge.
AC3 - Link their knowledge to stakeholders' knowledge.
AC4 - Integrate various opinions from team members.
AC5 - Apply prior knowledge to create new knowledge.
Entrepreneurial capital (Inkinen et al., 2017):
EC1 - Risk-taking is regarded as a positive personal quality in our company.
EC2 - Our employees take deliberate risks related to new ideas.
EC3 - Our employees are excellent at identifying new business opportunities.
EC4 - Our employees show initiative.
EC5 - The operations of our company are defined by independence and freedom in performing duties.
EC6 - Our employees have the courage to make bold and difficult decisions.
Innovation (Hussinki et al., 2017):
Compared to our main competitors, in the last year my firm was more innovative in:
IN1 - Products and services for customers.
IN2 - Methods and processes.
IN3 - Management practices.
IN4 - Marketing practices.
IN5 - Business models.
Knowledge sharing collection (Hooff and Ridder, 2004; Nodari et al., 2016)
KSc1 - When our employees need some specific knowledge, they ask their colleagues
KSc2 - Our employees ask their colleagues to share their skills when they need to learn something.
KSc3 - When one employee is good at something, the other employees ask them to teach it to them.
Knowledge sharing donation (Hooff and Ridder, 2004; Nodari et al., 2016)
KSd1 - When our employees learn something new, they share the subject with their colleagues.
KSd2 - Our employees share the information they have with their colleagues.
KSd3 - Our employees regularly share what they do with their colleagues.

References

Ali, M., Kan, K. A. S., & Sarstedt, M. (2016). Direct and configurational paths of absorptive capacity and organizational innovation to successful organizational performance. *Journal of Business Research, 69*, 5317–5323.

Attar, M., Kang, K., & Sohaib, O. (2019). Knowledge sharing practices, intellectual capital and organizational performance. *Proceedings of the 52nd Hawaii International Conference on System Sciences*.

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science, 16*(1), 74–94.

Balle, A. R., & Oliveira, M. (2018). The life cycle process of knowledge sharing in free software communities: Sharing profiles and motivations. *Knowledge & Process Management, 25*, 143–152.

Binsawad, M., Sohaib, O., & Hawryszkiewycz, I. (2019). Factors impacting technology business incubator performance. *International Journal of Innovation Management, 23*(1), 1–30.

Buenechea-Elberdin, M., Sáez, J., & Kianto, A. (2017). Exploring the role of human capital, renewal capital and entrepreneurial capital in innovation performance in high-tech & low-tech firms. *Knowledge Management Research and Practice, 15*(3), 369–379.

Cabrilo, S., & Dahms, S. (2020). The role of multidimensional intellectual capital and organizational learning practices in innovation performance. *European Academy of Management, 12396*.

Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning & innovation. *Administrative Science Quarterly, 35*(1), 128–152.

Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis issues for field settings*. Boston: Houghton Mifflin Company.

Cooper, D. R., & Schindler, P. S. (1998). *Business research methods*. Boston: McGraw-Hill.

Costa, V., & Monteiro, S. (2016). Knowledge processes, absorptive capacity & innovation: A mediation analysis. *Knowledge and Processes Management, 23*(3), 207–218.

Creswell, J., & Tashakkori, A. (2007). Editorial: Developing publishable mixed methods manuscripts. *Journal of Mixed Methods Research, 1*, 107–111.

Creswell, J. W., & Clark, V. L. P. (2011). *Designing and conducting mixed methods research* (2nd ed.). Thousand Oaks: Sage Publications.

Crilly, D., Zollo, M., & Hansen, M. T. (2012). Faking it or muddling through? Understanding decoupling in response to stakeholder pressures. *Academy of Management Journal, 55*(6), 1429–1448.

Curado, C., Oliveira, M., Maçada, A. C. G., & Nodari, F. (2017). Teams innovation: Getting there through knowledge sharing and absorptive capacity. *Knowledge Management Research and Practice, 15*(1), 45–53.

Curado, C. (2018). Human resource management contribution to innovation in small and medium-sized enterprises: A mixed methods approach. *Creativity and Innovation Management, 27*(1), 79–90.
Curado, C., Muñoz-Pascual, L., & Galende, J. (2018). Antecedents to innovation performance in SMEs: A mixed methods approach. *Journal of Business Research, 89*, 206–215.
Dyer, W. G., Jr, & Mortensen, S. P. (2005). Entrepreneurship and family business in a hostile environment: The case of Lithuania. *Family Business Review, 18*(3), 247–258.
European Union (2015). User guide to the SME definition. Available at: http://europa.eu. Access in December, 5, 2019.
Fiss, P. (2007). A set-theoretic approach to organizational configurations. *Academy of Management Review, 32*, 1180–1198.
Fiss, P. (2011). Building better causal theories: A fuzzy set approach to typologies in organization research. *Academy of Management Journal, 54*, 393–420.
Fiss, P. C., Sharapov, D., & Conqvist, L. (2013). Opposites attract? Opportunities and challenges for integrating large-N QCA and econometric analysis. *Political Research Quarterly, 66*(1), 191–235.
Hair, J. F., Black, W. C., Babin, B., Anderson, R., & Tatham, R. (2009). *Análise multivariada de dados*. Porto Alegre: Bookman.
Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A primer on partial least squares structural equation modelling (PLS-SEM)*. Los Angeles: SAGE.
Han, S. H., Yoon, S. W., & Chae, C. (2020). Building social capital and learning relationships through knowledge sharing: A social network approach of management students' cases. *Journal of Knowledge Management, 24*(4), 921–939.
Hong, J., Zheng, R., Deng, H., & Zhou, Y. (2019). Green supply chain collaborative innovation, absorptive capacity and innovation performance: Evidence from China. *Journal of Cleaner Production, 241*, 1–13.
Hooff, B. V. D., & Ridder, J. A. D. (2004). Knowledge sharing in context: The influence of organizational commitment, communication climate and CMC use on knowledge sharing. *Journal of Knowledge Management, 8*(6), 117–130.
Hussinki, H., Ritala, P., Vanhala, M., & Kianto, A. (2017). Intellectual capital, knowledge management practices and firm performance. *Journal of Intellectual Capital, 18*(4), 904–922.
Ibarra-Cisneros, M.-A. and Hernandez-Perlines, F. (2019). Entrepreneurial orientation, absorptive capacity and business performance in SMEs. Measuring Business Excellence, ahead-of-print.
Inkinen, H., Kianto, A., Vanhala, M., & Ritala, P. (2017). Structure of intellectual capital – an international comparison. *Accounting, Auditing and Accountability Journal, 30*(5), 1160–1183.
Johnson, R., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher, 33*(7), 14–26.
Kamasak, R., & Bulutlar, F. (2010). The influence of knowledge sharing on innovation. *European Business Review, 22*(3), 306–317.
Kambey, J. P., Wuryaningrat, N., & Kumajas, L. I. (2018). Examining leadership and knowledge sharing role on small and medium firms innovation capabilities. *International Journal of Economics and Business Administration, 6*(1), 24–38.
Kang, M., & Lee, M. J. (2017). Absorptive capacity, knowledge sharing, and innovative behaviour of R&D employees. *Technology Analysis and Strategic Management, 29*(2), 219–232.
Koufteros, X. A. (1999). Testing a model of pull production: A paradigm for manufacturing research using structural equation modeling. *Journal of Operations Management, 17*(4), 467–488.
Kraus, S., Ribeiro-Soriano, D., & Schüssler, M. (2018). Fuzzy-set qualitative comparative analysis (fsQCA) in entrepreneurship and innovation research – the rise of a method'. *International Entrepreneurship and Management Journal, 14*(1), 15–33.
Le, P. B., & Lei, H. (2018). The mediating role of trust in stimulating the relationship between transformational leadership and knowledge sharing processes. *Journal of Knowledge Management, 22*(3), 521–587.
Lisboa, A., Skarmeas, D., & Saridakis, C. (2016). Entrepreneurial orientation pathways to performance: A fuzzy-set analysis. *Journal of Business Research, 69*(4), 1319–1324.
Lo, M. F., & Tian, F. (2019). Enhancing competitive advantage in Hong Kong higher education: Linking knowledge sharing, absorptive capacity and innovation capability. *Higher Education Quarterly, early view*, 1–16.
Marzo, G., & Scarpino, E. (2016). Exploring intellectual capital management in SMEs: An in-depth Italian case study. *Journal of Intellectual Capital, 17*(1), 27–51.
Maxwell, J. (1992). Understanding and validity in qualitative research. *Harvard Educational Review, 62*(3), 279–301.
Muñoz-Pascual, L., Curado, C., & Galende, J. (2019a). The triple bottom line on sustainable product innovation performance in SMEs: A mixed methods approach. *Sustainability, 11*(6), 1–22.
Muñoz-Pascual, L., Curado, C., & Galende, J. (2019). How does the use of information technologies affect the adoption of environmental practices in SMEs? A mixed methods approach, Review of Managerial Science, In press: https://doi.org/10.1007/s11846-019-00371-2.
Muñoz-Pascual, L., Galende, J., & Curado, C. (2020). Human resource management contributions to knowledge sharing for a sustainability-oriented performance: A mixed methods approach. *Sustainability, 12*(1), 161–184.
Nguyen, T. P. L., Nguyen, K. N., Do, T. D., & Nguyen, T. T. M. (2019). Knowledge sharing and innovative work behavior: The case of Vietnam. *Uncertain Supply Chain Management, 7*(4), 619–634.
Nguyen, T.-M. (2019). Do extrinsic motivation and organisational culture additively strengthen intrinsic motivation in online knowledge sharing? An empirical study. *VINE Journal of Information and Knowledge Management Systems, 50*(1), 75–93.
Nodari, F., Oliveira, M., & Maçada, A. C. G. (2016). Organizational performance through the donation and collection of interorganizational knowledge. *VINE Journal of Information and Knowledge Management Systems, 46*(1), 85–103.
Oliveira, M., Curado, C., Maçada, A. C. G., & Nodari, F. (2015). Using alternative scales to measure knowledge sharing behavior: Are there any differences? *Computers in Human Behavior, 44*, 132–140.
Osabutey, E. L., & Jin, Z. (2016). Factors influencing technology and knowledge transfer: Configurational recipes for Sub-Saharan Africa. *Journal of Business Research, 69*(11), 5390–5395.
Paoloni, M., Coluccia, D., Fontana, S., & Solimene, S. (2020). Knowledge management, intellectual capital and entrepreneurship: a structured literature review. Journal of Knowledge Management, ahead-of-print.
Peltokorpi, V. (2017). Absorptive capacity in foreign subsidiaries: The effects of language-sensitive recruitment, language training, and interunit knowledge transfer. *International Business Review, 26*(1), 119–129.
Ragin, C. C. (1987). *The comparative method: Moving beyond qualitative and quantitative strategies*. Berkeley: University of California Press.
Ragin, C. (2000). *Fuzzy-set social science*. Chicago: University of Chicago Press.
Ragin, C. C. (2005). *From fuzzy sets to crisp truth tables*. Tucson: Department of Sociology, University of Arizona.
Ragin, C. C. (2006). Set relations in social research: Evaluating their consistency and coverage. *Political Analysis, 14*, 291–310.
Ragin, C. C. (2008). *Redesigning social inquiry: Fuzzy sets and beyond*. Chicago: University of Chicago Press.
Rico, P., & Cabrer- Borrás, B. (2019). Entrepreneurial capital of the region: The concept, manifestations and spatial localisation. *Technological and Economic Development of Economy, 25*(6), 1363–1379.
Rihoux, B., & Ragin, C. C. (2009). *Configurational comparative methods: Qualitative comparative analysis (QCA) and related research*. Los Angeles: Sage.
Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston: Houghton-Mifflin.
Skarmeas, D., Lisboa, A., & Saridakis, C. (2016). Export performance as a function of market learning capabilities and intrapreneurship: SEM and fsQCA findings. *Journal of Business Research, 69*(11), 5342–5347.
Soo, C., Tian, A. W., Teo, S. S. T., & Cordery, J. (2017). Intellectual capital – enhancing HR, Absorptive capacity, and innovation. *Human Resources Management, 56*(3), 431–454.
Stentz, J. E., Plano Clark, V. L., & Matkin, G. S. (2012). Applying mixed methods to leadership research: A review of current practices. *The Leadership Quarterly, 23*, 1173–1183.
Supartha, W. G., & Ratih, I. A. D. K. (2017). Antecedents of absorptive capacity: A proof of proposition. *Journal of Business and Retail Management Research, 11*(4), 90–107.
Tuan, L. T. (2015). From corporate social responsibility, through entrepreneurial orientation, to knowledge sharing. *The Learning Organization, 22*(2), 74–92.
Venkatesh, V., Brown, S. A., & Bala, H. (2013). Bridging the qualitative-quantitative divide: Guidelines for conducting mixed methods research in information systems. *MIS Quarterly, 37*(1), 21–54.
Wee, J. C. N., & Chua, A. Y. K. (2013). The peculiarities of knowledge management processes in SMEs: The case of Singapore. *Journal of Knowledge Management, 17*(6), 959–972.
Woodside, A., Hsu, S.-Y., & Marshall, R. (2011). General theory of cultures consequences on international tourism behavior. *Journal of Business Research, 64*, 785–799.
Woodside, A., Prentice, C., & Larsen, A. (2015). Revisiting problem gamblers' harsh gaze on casino services: Applying complexity theory to identify exceptional customers. *Psychology & Marketing, 32*, 65–77.
Xue, Y., Bradley, J., & Liang, H. (2011). Team climate, empowering leadership, and knowledge sharing. *Journal of Knowledge Management, 15*(2), 299–312.
Yadav, M., Choudhary, S., & Jain, S. (2019). Transformational leadership and knowledge sharing behaviour in freelancers. *Journal of Global Operations, 12*(2), 202–224.
Yáñez-Araque, B., Hernández-Perlines, F., & Moreno-Garcia, J. (2017). From training to organizational behavior: A mediation model through absorptive and innovative capacities. *Frontiers in Psychology, 8*, 1532.
Yao, J., Crupi, C., Minin, A. D., & Zhang, X. (2020). Knowledge sharing and technological innovation capabilities of Chinese software SMEs. *Journal of Knowledge Management, 24*(3), 607–634.
Yoo, K. D., Vonderembse, M. A., & Ragu-Nathan, T. S. (2011). Knowledge quality: Antecedents and consequence in project teams. *Journal of Knowledge Management, 15*(2), 329–343.
Zaim, H., Muhammed, S., & Tarim, M. (2019). Relationship between knowledge management processes and performance: Critical role of knowledge utilization in organizations. *Knowledge Management Research & Practice, 17*, 24–38.
Zahra, S., & George, G. (2002). Absorptive capacity: A review, reconceptualization, and extension. *Academy of Management Review, 27*(2), 185–203.
Zhao, Y., Wang, J., Zhang, K., & Pablos, P. O. (2020). How do features of social media influence knowledge sharing? An ambient awareness perspective. *Journal of Knowledge Management, 24*(2), 439–462.

Nuno Fernandes Crespo is Assistant Professor of Entrepreneurship and International Business fields in the Management Department of ISEG, Lisbon School of Economics and Management, University of Lisbon, Portugal, where he, in the last years, has been a member of the scientific committee of different courses such as the MSc in Industrial Management and Strategy or the Doctoral Program in Management. He received his PhD in Management from the University of Lisbon (Portugal). His research interests are mainly focused on international entrepreneurship, entrepreneurship, and international business. His works have been published in several journals including Journal of Business Research, Business Research Quarterly, European Journal of International Management, Journal of Small Business and Enterprise Development or Gender in Management.

Carla Curado is an Associate Professor at ISEG, School of Economics and Management, University of Lisbon, Portugal, where she teaches at Doctoral and Master's Programs. Carla earned her PhD in Management from the Technical University of Lisbon (Portugal). Her research interests relate to Knowledge Management, HR Management and Innovation. Carla has held several high profile leadership positions, including over a decade long as the Academic Director of the MSc in Human Resources Management and the MSc in Corporate Sciences, two of the university's most popular Masters Programs. She is a founder director of the ADVANCE research center. Carla has been regularly presenting her work in leading international conferences and her research appears in several journals including International Journal of Production Economics, Personnel Review, Journal of Knowledge Management, Journal of Business Research, Creativity and Innovation Management or Computers in Human Behavior. Carla serves on the editorial board of several journals, including Creativity and Innovation Management.

Mírian Oliveira is a professor and researcher at Business School, Pontifícia Universidde Católica do Rio Grande do Sul (PUCRS), Brazil and invited professor and member of Advance/CSG at Lisbon School of Economics and Management, Universidade de Lisboa, Portugal. She obtained her doctoral degree in Business Administration from the UFRGS in 1999. Her current research interests include Knowledge Management, Knowledge Sharing, Knowledge Hiding, Knowledge Hoarding and Research Method. Her research on these topics has been published widely (e.g. in Journal of Knowledge Management, Knowledge and Process Management, Computers in Human Behavior, and Journal of Business Research).

Lucía Muñoz-Pascual (Ph.D) is Assistant Professor of Human Resource Management in the Business Administration and Management Department at Salamanca University. She received a PhD Degree in Business Administration from this university. Her main research topic is strategic human resource management and its influence on creativity and innovation. She has previously worked in multinational companies, such as Santander Bank and Bertelsmann. She is a visiting researcher at Lisbon University in Portugal and The George Washington University School of Business in Washington DC (USA). She has attended at various international conferences on Business Administration and Management. Since 2012, she has also been a coordinator for the Erasmus program at Salamanca University. In addition, since 2015 she has been a member of the Multidisciplinary Institute of Enterprise (IME) at Salamanca University. She is a regular coordinator for various teaching innovation projects, and she has published a number of research papers in high-impact scientific journals. Actually, she is Vice-Dean at the Faculty of Economics and Business of the Salamanca University.