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Effects ex-ante and during the COVID-19 pandemic of the antecedents of market turbulence and propensity to innovate in the relationship between absorptive capacity and performance of micro and small enterprises

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Abstract

The COVID-19 pandemic challenged micro and small enterprises to face a turbulent market when they had to reinvent themselves to remain active in an increasingly restricted market. This work evaluates the effects ex-ante and during the COVID-19 pandemic of the antecedents of market turbulence and propensity to innovate in the relationship between absorptive capacity and performance of Brazilian micro and small enterprises (MSEs). The research adopted a questionnaire and collected responses from 94 companies. The questions referred to events that occurred before and during the pandemic. The main findings indicate that, in 2019, market turbulence did not influence the model, and the propensity to innovate influenced absorptive capacity, while the potential absorptive capacity was positively related to the realized absorptive capacity, which, in turn, influenced performance. In 2020, the hypotheses were confirmed, demonstrating the influence of market turbulence that increased the propensity to innovate and the absorptive capacity and, consequently, increased the MSE's performance.

Keywords: Market turbulence. Propensity to innovate. Absorptive capacity. Organizational performance. Small enterprises.

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Efeitos *ex ante* e durante a pandemia da COVID-19 dos antecedentes de turbulência do mercado e propensão para inovar na relação entre capacidade absortiva e desempenho das microempresas e pequenas empresas

Resumo

A pandemia da COVID-19 desafiou as microempresas e pequenas empresas (MPEs) no enfrentamento de um mercado turbulento, quando tiveram que se reinventar para se manterem ativas no mercado cada vez mais restrito. Dessa forma, este trabalho avalia os efeitos *ex ante* e durante a pandemia da COVID-19 da turbulência de mercado e da propensão para inovar na capacidade absortiva e no desempenho das Micro e Pequenas Empresas (MPE) brasileiras. A pesquisa contou com 94 empresas que responderam a questões sobre eventos que ocorreram antes e durante a pandemia. Como principais resultados, observou-se que, em 2019, a turbulência do mercado não influenciava o modelo, a tendência à inovação afetava a capacidade absortiva, mas a capacidade absortiva potencial se relacionava positivamente com a capacidade absortiva realizada e esta influenciava o desempenho. No ano de 2020, as hipóteses foram confirmadas, demonstrando a ação da turbulência do mercado, que elevou a propensão para inovar e a capacidade absortiva e, consequentemente, aumentou o desempenho das MPEs.

Palavras-chave: Turbulência do mercado. Propensão para inovar. Capacidade absortiva. Desempenho. Microempresas e pequenas empresas.

Efectos *ex ante* y durante la Pandemia de COVID-19 de los antecedentes de turbulencia de mercado y propensión a innovar en la relación entre capacidad de absorción y desempeño de las micro y pequeñas empresas

Resumen

La pandemia de COVID-19 desafió a las micro y pequeñas empresas a enfrentarse a un mercado turbulento, cuando tuvieron que reinventarse para mantenerse activas en un mercado cada vez más restringido. De esta forma, este documento evalúa los efectos *ex ante* y durante la pandemia de COVID-19 de la turbulencia del mercado y la propensión a innovar en la capacidad de absorción y el desempeño de las micro y pequeñas empresas (MYPE) brasileñas. La investigación contó con 94 personas que respondieron a un cuestionario sobre el antes, el durante de la pandemia y las perspectivas de futuro. Como principales resultados se observó que, en 2019, las turbulencias del mercado no influyeron en el modelo y que la propensión a la innovación influyó en la capacidad de absorción, que la capacidad de absorción potencial se relacionó positivamente con la capacidad de absorción realizada y esta, influyó en el rendimiento. En 2020, se confirmaron las hipótesis, demostrando la influencia de las turbulencias del mercado, que aumentaron la propensión a innovar y la capacidad de absorción y, en consecuencia, aumentaron el rendimiento de las MYPE.

Palabras clave: Turbulencia del mercado. Propensión a innovar. Capacidad de absorción. Desempeño organizacional. Micro y pequeñas empresas.

INTRODUCTION

The pandemic caused by the new coronavirus (Sars-CoV-2), which started in 2020, presented uncertainties about the future of organizations. According to Barreto et al. (2020), the COVID-19 pandemic represents one of the greatest global health challenges of this century. Actions such as social isolation and travel restrictions, recommended by the World Health Organization (WHO) and determined by state and municipal governments in Brazil, resulted in the temporary closure of non-essential services (not including health services, pharmacies, and supermarkets) (GARRIDO and GARRIDO, 2020). In this context, some companies adapted and sought ways to deal with this market turbulence.

At the theoretical level, there is an understanding in organizations that Absorptive Capacity (ACAP) has the possibility of contributing to organizational strategy, due to the fact that it provides an increase in the expertise of organizations by inserting new knowledge in order to improve performance and business operations, as well as to be more innovative (ALI, KAN and SARSTEDT, 2016).

Cohen and Levinthal (1990) conceptualize absorptive capacity as a possibility that the company may have in recognizing the importance of recent external information, as well as the capability to be able to assimilate it and, subsequently, apply it so that it is a competitive advantage for the company.

According to Gray (2006), ACAP is directly related to innovation, a fact that can increase the company's competitiveness and, as a consequence, increase its performance and longevity. In microenterprises and small entrepreneurial companies, this is likely to be largely reflected in the development, experience and motivation of the owner and key employees (GRAY, 2006).

What is more, studies focused on absorptive capacity and innovation are more focused on developed countries, especially when the objective is small companies (CASSOL et al., 2016). In a study by Engelen et al. (2014), it suggests that future research verifies the interaction between ACAP and market turbulence in small companies in less developed countries.

In addition, a study by Zubielqui, Jones and Lester (2016) states that the understanding of the relationships between the flow of external knowledge, absorption capacity, innovation and performance in micro and small companies requires further studies. Therefore, this study aims to contribute to the reduction of this gap in the knowledge, as well as to innovate with the inclusion of the concepts of market turbulence, absorptive capacity and performance in the same theoretical model.

In this sense, the following question arises: how does market turbulence and the propensity to innovate affect the absorptive capacity and performance of micro and small enterprises (MSEs) in times of the COVID-19 pandemic? As for the objective, the research evaluates the effects ex-ante and during the COVID-19 pandemic of market turbulence and the propensity to innovate on the absorptive capacity and performance of Brazilian MSEs.

The research used questionnaires that are used to identify the perceptions of entrepreneurs regarding the constructs of market turbulence, their ability to innovate and the implications for ACAP and company performance. Data were collected based on the periods before and during the COVID-19 pandemic. Therefore this temporal model intends to understand the effects of the pandemic on small businesses. To achieve this, descriptive statistics, inferences and factorials were used as a way to verify the hypotheses proposed in this work.

Micro and small enterprises play a central role in the economic context of developing countries, such as Brazil. Thus, this thesis provides a strategic perspective for micro and small companies, while demonstrating that attention to important themes, such as the propensity to innovate and absorptive capacity, emerges as an important capability to enhance performance, especially in times of difficulties.

To be contextually relevant, meaning to survive the COVID-19 pandemic, many MSEs were forced to adapt to digital technologies and migrate to online platforms to maintain their current customer base while seeking to gain new customers (GUDOVSKAYA and LINIŅA, 2021). Therefore, the relevance of this work is justified, since there is a gap in empirical studies on the importance of absorptive capacity in Brazilian micro and small companies, during turbulent periods, mainly because this instability was generated by a pandemic.

In regard to practicality, it is expected that this research will support researchers, consultants and managers, as well as institutions linked to micro and small companies, such as *Sebrae* (Brazilian service that supports micro- and small businesses), banks and the third sector, which work to support this segment of companies with information that helps managers to cope in times of difficulties.

The article is divided into sections. In addition to this introduction, there is the theoretical framework, which discusses the literature of the constructs involved in the research, the next section presents the hypotheses that will answer the research question, the fourth section explains the methodology, followed by the fifth section, with the analysis and discussion of the data, ending with the sixth section, which deals with the conclusion of the manuscript.

THEORETICAL REFERENCE

In this section, theoretical foundations related to market turbulence, absorptive capacity, the propensity to innovate and organizational performance are addressed, in addition to the relevant hypotheses and framework.

Market turbulence

Market instability affects a company in relation to the strategic deployment of resources, being characterized by continuous changes in customer preferences and demands, price/cost structures and the composition of competitors (CALANTONE, GARCIA and DROGE, 2003). In this sense, the concept of turbulence in the employment market relates to the change that companies face in their sets of customers and competitors (market dynamism) and the difficulty of preparing the organization to deal with this new competitive scenario (market uncertainty) (SANTOS-VIJANDE and ÁLVAREZ-GONZÁLEZ, 2007).

Market turbulence is an important component as it increases uncertainty and risk in business processes, as well as in the causal relationship between business approaches and performance (CH'NG, CHEAH and AMRAN, 2021). Thus, a turbulent environment can be defined as one in which frequent and unpredictable changes in the market or with technology in a sector accentuate the risks and uncertainties in the strategic planning processes of new product innovation (CALANTONE,

GARCIA and DROGE, 2003). However, the turbulence of the business environment allows attention to be focused on knowledge as the dominant source of competitive advantage (JANSEN, BOSCH and VOLBERDA, 2005).

In this sense, the ability to explore new knowledge and be attentive to customer needs is a perception that helps micro and small enterprises (MSEs) to get through difficult times, which are mainly characterized by a regular change in customer needs or by rapid technological developments (ENGELEN et al., 2014).

Innovativeness (propensity to innovate)

Innovativeness means a company's tendency to engage and support new ideas, experimentation and creative processes that may result in new products, services or technological processes (KAMARUDDEEN, YUSOF and SAID, 2010). Companies can have different levels of innovativeness in regard to the various elements of innovation (CRESPELL, KNOWLES and HANSEN, 2006).

It is important to emphasize that innovation and innovativeness are distinct from each other or can be used interchangeably (DAMANPOUR, 1991). However, innovation seems to incorporate the adoption and/or implementation of the "new" defined in subjective ways, whereas innovativeness adopts a certain kind of measurement contingent to an organization's propensity for innovation (KAMARUDDEEN, YUSOF and SAID, 2010). Therefore, innovativeness contributes to strengthening the position of companies in the market, adopting new approaches and ideas in their manufacturing, organizational and administrative activities (MAMUN, MUHAMMAD and ISMAIL, 2017).

Absorptive capacity

Cohen and Levinthal (1990) defined Absorptive Capacity (ACAP) as the competence that the company has to analyze the value of new knowledge, and to then adapt this information and use it before the competition. Based on the study by Zahra and George (2002), it was found that a new concept was suggested for the model by Cohen and Levinthal (1990), in which there could be a potential division of ACAP. In fact, these authors point out that ACAP comprises a group of routines in which external knowledge, after being recognized as important by the organization, needs to be inserted into current organizational knowledge so that it has the capacity to be transformed and combined with recent applicable technologies, services and products, as well as being commercially viable so that it can be exploited by the organization.

Absorptive capacity allows companies to evaluate external information, knowledge and technology and adapt them according to their needs (MAMUN, MUHAMMAD and ISMAIL, 2017). According to these same authors, previous research has identified that the ability to evaluate external information leads to better decision-making, internal competences and knowledge processing skills. From this point of view, companies will seek new external information to achieve innovation and implement it, despite the risks involved.

Absorptive capacity consists of four dimensions: acquisition, assimilation, transformation and exploitation. Acquisition and assimilation constitute PACAP (Potential ACAP), and transformation

and exploration create RACAP (Realized ACAP) (ZAHRA and GEORGE, 2002; LIMAJ and BERNROIDER, 2019). Representatively, the main functions of PACAP are to acquire and digest the knowledge that comes from outside and create new experiences through internal processes; RACAP's function is to convert internal knowledge and apply it to responses to environmental changes (LIMAJ and BERNROIDER, 2019; ZAHRA and GEORGE, 2002).

Organizational performance

Organizational performance is one of the most significant dependent variables that has attracted the interest of researchers who are concerned with any area of management, as it is only through performance that organizations can progress and grow (JAGDALE and BHOLA, 2014).

In this way, performance is a subject wide open for discussion among academics in the field of management as well as in the social sciences. There are many different meanings for the articulation of performance in academic literature. Each definition emphasizes different views, methods, and resources. Therefore, there is no best accepted sense of performance (HOQUE, 2018). According to Obiwuru et al. (2011), performance explains how well an organization is doing. Generally, the performance of MSEs refers to the results of a company's activities or investments in a given period of time and produced by a complex series of actions that integrate skills and knowledge (HOQUE, 2018).

Development of hypotheses and theoretical model

Innovativeness is considered the ability to generate new ideas, the combination of existing elements to create new sources of value or receptivity to new ideas (HURLEY and HULT, 1998).

According to Bodlaj and Čater (2019), it is expected that the market turbulence will lead micro and small companies to be aware of the importance of innovation and to increase their innovativeness.

In a survey conducted with 402 industries in Taiwan, Tsai and Yang (2015) found that market turbulence positively impacts absorptive capacity. Thus, when market turbulence is high, encouraging the propensity to innovate seems to provide more benefits for organizational performance.

Based on the above argument, this study predicts that market turbulence increases a firms' propensity to innovate. In this context, the first hypothesis is:

H1: Market turbulence positively influences the propensity to innovate (innovativeness) of companies.

For Menguc and Auh (2006), innovativeness implies that a company is proactive in exploring new opportunities, instead of just optimizing current strengths. For the authors, innovativeness refers to the propensity, receptivity and inclination of an organization to adopt new ideas that depart from the usual way of approaching business.

In the work of Menguc and Auh (2006), it was verified that the more deeply innovativeness is incorporated into the social fabric of the company, the greater its value as a complementary resource. The study involved the participation of 242 Australian companies. At the time, it was observed that companies that have a high innovation capacity performed better when compared to those that have a low innovation capacity (TSAI and YANG, 2015).

In the same vein, the work by Jiménez-Barrionuevo, Molina and García-Morales (2019) involved 168 companies from the chemical industry and the automotive sector in Spain and demonstrated the positive impacts between both innovativeness and PACAP and innovativeness and RACAP.

With the objective of increasing the performance and competitiveness of the company, the capability of an organization to innovate helps to formulate new approaches and improve their approach to solve problems. In view of this, the following hypotheses are presented:

H2: The propensity to innovate (innovativeness) positively influences the organization's potential absorptive capacity (PACAP).

H3: The propensity to innovate (innovativeness) positively influences the organization's realized absorptive capacity (RACAP).

The relationship between PACAP and RACAP is defended in the literature (ALBORT-MORANT et al., 2018; JIMÉNEZ-BARRIONUEVO, MOLINA and GARCÍA-MORALES, 2019; LIMAJ and BERNROIDER, 2019; SANTOS, ROLDAN and LOO, 2021). While some organizations may temporarily focus on exploiting for commercial use the bank of knowledge they already have and direct their efforts towards developing realized absorptive capacity, this knowledge will eventually become depleted if not renewed periodically. Such organizations must obtain new knowledge from outside the organization if they want to maintain their rate of activity (JIMÉNEZ-BARRIONUEVO, MOLINA and GARCÍA-MORALES, 2019; ZAHRA and GEORGE, 2002).

In the research by Santos, Roldan and Loo (2021), the positive impact between PACAP and RACAP was supported in a study from a sample of 222 farmers in two states in the South Region of Brazil.

Jiménez-Barrionuevo, Molina and García-Morales (2019), in a survey carried out with 168 companies, found that the positive relationship between PACAP and RACAP was supported. Therefore, we offer the following hypothesis:

H4: Potential absorptive capacity positively influences realized absorptive capacity.

For Wang, Chiu and Chen (2015), organizational performance is the result of the company's operations and includes the achievement of its internal and external objectives, which serves as an analysis of its competitiveness. Studies suggest that there are complex configurations of ACAP with the dimensions of organizational innovation associated with company performance (ALI, KAN and SARSTEDT, 2016). Thus, the development of mechanisms and processes that use elements of ACAP brings companies closer to knowledge sources, which can improve their performance (CARDOZO, KRONMEYER FILHO and VACCARO, 2019).

In an empirical survey of 196 small and medium-sized companies in Germany, Engelen et al., (2014) confirmed that ACAP positively impacts the performance of this type of organization in turbulent markets.

In a study involving 130 Brazilian information technology companies, Cardozo, Kronmeyer Filho and Vaccaro (2019) confirmed the hypothesis of the positive influence of ACAP on organizational performance.

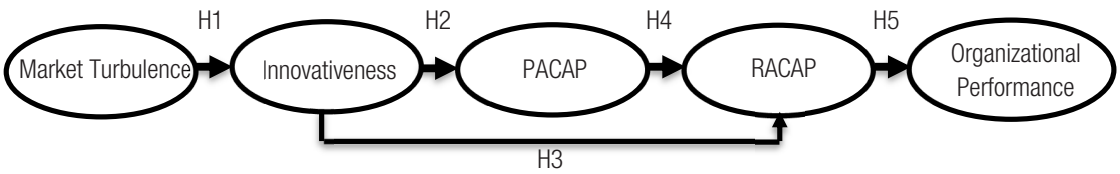
In another study, with 222 farmers in southern Brazil, Santos, Roldan and Loo (2021) validated the hypothesis of a positive relationship between realized ACAP and performance. In this sense, the following hypothesis is proposed:

H5: Realized absorptive capacity positively influences organizational performance.

In view of the concepts and relationships presented, the theoretical model of the research and the hypotheses are represented in Figure 1.

FIGURE 1

Theoretical model



Source: Elaborated by the authors.

Challenges arise, in part, from the suffering and people who died from contracting the coronavirus, but also in that government interventions and behavioral changes were needed to stop the spread of the virus and mitigate the damage to the economy. Among the hardest hit are small and medium-sized companies (BAKER and JUDGE, 2020). Entrepreneurs had to decide how to adapt their marketing strategies and promote innovation during the global health crisis (WANG et al., 2020).

RESEARCH METHODOLOGY

This is a theoretical-empirical research using a self-administered questionnaire made available on the internet (COOPER and SCHINDLER, 2016). Being a quantitative study, it involved studies that make use of statistical analyzes to obtain results; it adopted an empirical approach, based on evidence that is supported by direct observation and experimentation in the acquisition of new knowledge; it is correlational, with the objective of determining whether two or more variables are related; and multivariate, with the use of multivariate statistics and structural equations, using PLS-SEM structural equations (MARCZYK, DEMATTEO and FESTINGER, 2005; HAIR JR. et al., 2009), aiming to answer questions related to the participants' perceptions, using scientific articles and books as a source of secondary data and the research data found as primary data. The processed data reflected two moments: before and during the COVID-19 pandemic in Brazil.

In Brazil, MPEs are considered an entrepreneur, a simple company, a limited liability company, as well as a business company, all of which are duly registered in the Civil Registry of Legal Entities or in the Registry of Mercantile Companies, according to each situation. However, in the case of a micro-enterprise, it must present in each calendar year a gross income inferior or equal to 360 thousand Brazilian Reals. In the case of small companies, the value of each calendar year must include gross revenue of less than 4.8 million Brazilian Reals or greater than BR$360 thousand (BRASIL, 2006).

According to data released by Sebrae (2020), in Brazil there are 6,282,723 micro enterprises and 786,288 small enterprises. Of this total, 42.7% are in the service sector and 42.8% in commerce. The others are divided between industry, civil construction and agriculture. Small businesses are responsible for 44.8% of the workforce employed in the country, representing around 27% of the Brazilian GDP. The non-probabilistic sample for this study was determined by the Snowball technique, in which respondents pass on information to other participants in the same research group. Among the advantages to this model is its low cost, in addition to serving a wide reaching public (COOPER and SCHINDLER, 2016).

The answers were structured on a five-point Likert-type scale, ranging from 1 to 5, between the responses "I totally disagree" to "I totally agree", and the questionnaire was applied in the second half of 2021, based on the year 2019 for the first period and 2020 for the second.

As recommended by Malhotra (2011), the scales were translated from English into Portuguese and were submitted to two professors with Ph.Ds. in administration, specialists in quantitative research with micro and small companies, who evaluated and proposed changes in the questions in order to adapt them to the Brazilian context. After this process, they were back-translated into English to verify that their original characteristics were maintained.

Box 1 shows the questions of the instrument used in the research.

BOX 1

Research tool

Construct	Item	Question	Source
Market Turbulence (MT)	MT01	Our customers' preferences are constantly changing.	Jaworski and Kohli (1993)
	MT02	Our group of customers changes regularly.	
	MT03	Our company experiences a high rate of variation of competitors.	
Innovativeness (IN)	IN01	Innovation proposals are always welcome in the organization.	Santos-Vijande and Álvarez-González (2007)
	IN02	The company actively pursues innovative ideas.	
	IN03	The company promotes and supports innovative ideas, experimentation, and creative processes.	

Continue

Construct	Item	Question	Source
Potential ACAP (PACAP)	PA01	Our company frequently interacts with the market to acquire new knowledge.	Jansen, Bosch and Volberda (2005)
	PA02	We collect industry information through informal methods (eg, lunch with industry friends, conversations with partners).	
	PA03	New opportunities to serve our customers are quickly understood.	
	PA04	We quickly analyze and interpret the demands and evolution of the market.	
Realized ACAP (RACAP)	AR01	Our company regularly considers the consequences of changing market demands in terms of new products and services.	Jansen, Bosch and Volberda (2005)
	AR02	Our company quickly recognizes the usefulness of new external knowledge with existing knowledge.	
	AR03	It is clearly known how activities should be carried out.	
	AR04	Our company has a clear division of roles and responsibilities.	
Performance (PE)	PER1	Our company is more successful than our competitors.	Kava and Didonet (2019)
	PER2	Our company is growing faster than our competitors.	
	PER3	Our company seeks to innovate more than our competitors.	
	PER4	Our company has a better reputation and/or is more highly regarded than our competitors.	

Source: Elaborated by the authors.

The sample had 92 respondents, complying with the rule of at least five respondents per variable in each of the analyzed constructs (HAIR JR. et al., 2009). Initially, a pre-test was carried out with the first 30 cases, in which problems of understanding, contextualization and semantics were verified and, in addition, the internal consistency of the research instrument was observed, which presented a Cronbach's alpha greater than 0.70 in all constructs (MALHOTRA, 2011).

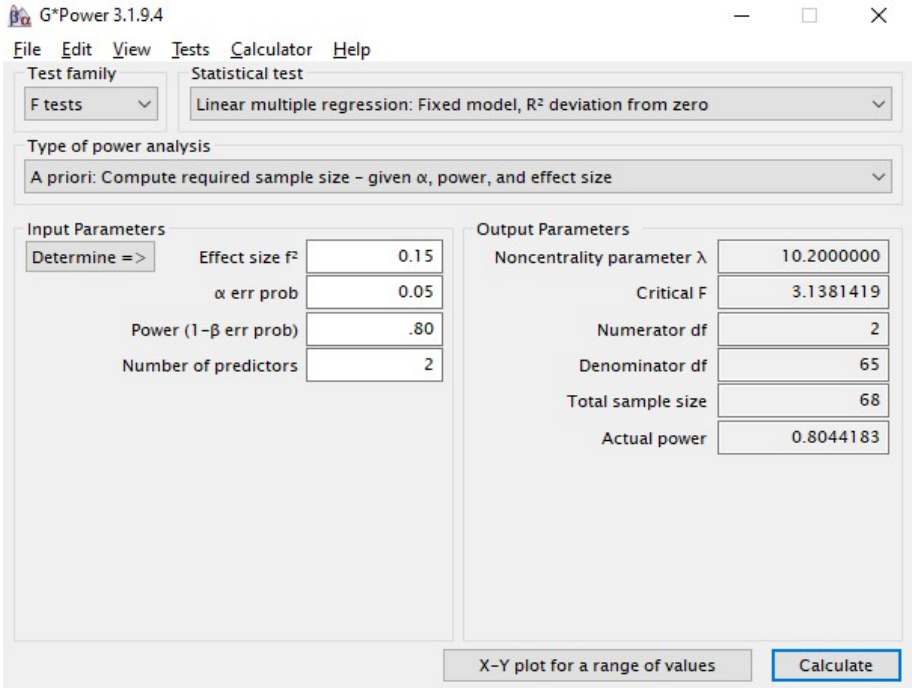
In regard to non-response bias, early and late respondents were compared (we defined early respondents as the first 46 participants who answered the questionnaire and late respondents as the last 46 responses). The absence of significant differences between early and late respondents suggests that response bias was not a significant problem in the study (ARMSTRONG and OVERTON, 1977).

The PLS-SEM requires a minimum sample, and to estimate the size of this sample, the G*Power software was used (FAUL et al., 2007). Therefore, the construct that receives more indicators must be observed: according to Figure 2, RACAP and Organizational Performance receive two indicators or two predictors.

According to Hair Jr. et al. (2014), with the use of power as 0.80 for the effect size (f^2) = 0.15, the test result calculated a minimum sample of 68 cases. As the sample collected from the survey has 92 valid cases, this number is equivalent to 1.35 times the minimum acceptable sample size for carrying out a structural analysis (see Figure 2).

FIGURE 2

GPower screen



Source: Faul et al. (2007).

Data were tabulated in an Excel® spreadsheet and exported to the SPSS® and Statistics computer program, version 20, from IBM®, to calculate descriptive and inferential statistics, and the Smart PLS-SEM software, version 3.2.9 was used for structural equation modeling (RINGLE, WENDE and BECKER, 2015). Furthermore, the PLS-SEM is particularly recommended when the data are abnormal with small samples and formative and reflective constructs (HAIR JR. et al., 2014). Data were collected using a Likert scale and a symmetrical distribution of the measured variables was not required, as this is a requirement usually indicated in structural equation models based on covariance (RINGLE, SILVA and BIDO, 2014).

RESULTS AND DISCUSSION

Descriptive analysis

As shown in Table 1, market turbulence suffered a positive variation, supposedly caused by the COVID-19 pandemic. Thus, all innovativeness and performance indicators had a negative variation and PACAP and RACAP showed a small alternation, which can be explained by businesses

needing to explore new knowledge to maintain their survival and performance (ZAHRA and GEORGE, 2002).

TABLE 1

Descriptive results by construct

Constructs	Year	Mean	Median	Method	SD	CV
Market Turbulence	2019	3.32	4	4	1.11	33.5%
Market Turbulence	2020	3.48	4	4	0.98	28.2%
Innovativeness	2019	3.71	4	4	0.95	25.6%
Innovativeness	2020	3.61	4	4	0.95	26.4%
PACAP	2019	3.78	4	4	0.89	23.4%
PACAP	2020	3.82	4	4	0.80	20.8%
RACAP	2019	3.88	4	4	0.88	22.6%
RACAP	2020	3.91	4	4	0.83	21.3%
Performance	2019	3.49	4	4	0.97	27.8%
Performance	2020	3.20	3	3	0.97	30.4%

Source: Survey data.

It can be seen that PACAP and RACAP increased their means, probably due to the need to capture and implement acquired knowledge, owing to the competitive conditions. Note that only the median of "Performance" decreased, probably due to the difficulty of maintaining it in a period of global crisis. Standard deviations ranged from 0.8 to 1.1, with acceptable coefficients of variation (standard deviation over the mean), with a range of 20.8% to 35.5%.

Structural analysis

Regarding the consistencies of the constructs, Table 2 shows that they presented values between 0.70 and 0.95, which indicates their composite reliability (HAIR JR. et al., 2014). In the same way, the values of the average variances extracted (AVEs) of each construct were demonstrated, in which the latent variables (LV) met the criterion of at least 50% of the explained variance, that is, values greater than 0.50 (FORNELL and LARCKER, 1981; HAIR JR. et al., 2014).

Table 2 also confirms that the square root of AVEs were greater than the correlations between the constructs, thus showing that the discriminant validity was met (FORNELL and LARCKER, 1981; HAIR JR. et al., 2014).

TABLE 2

Correlation matrix between latent variables - 2019

LV	PE	IN	PA	RA	MT
Performance	0.781				
Innovativeness	0.214	0.867			
PACAP	0.266	0.593	0.789		
RACAP	0.405	0.364	0.392	0.739	
Market Turbulence	-0.171	-0.107	-0.02	-0.117	0.749
Composite reliability(CR)	0.86	0.90	0.83	0.78	0.70
Average Variance Extracted (AVE)	0.61	0.75	0.62	0.55	0.56
R^2 Adjusted	0.164	0.011	0.345	0.162	
Q^2	0.056	0.012	0.139	0.117	

Notes: values on the diagonal are the square root of the AVEs; correlations are significant at 5%.
Source: Elaborated by the authors.

According to Table 2, the results of the predictive validity indicators, the R^2, indicate the quality of the adjusted model. For the area of social and behavioral sciences, Cohen (1988) suggests that R^2 = 2% should be classified as a small effect; R^2 = 13%, as an average effect; and R^2 = 26%, as a large effect. Thus, the R^2 of the "Performance" construct was 16.4%, which is considered average. With regard to Q^2, this should result in a value > 0.0 (HAIR JR. et al., 2014). As can be seen, the Q^2 values indicate that the exogenous constructs have predictive relevance for the endogenous construct under consideration.

To verify the significance of the coefficients, bootstrapping was performed with 5,000 subsamples, with a significance level of 5%. Table 3 demonstrates the general fit of the model and whether the hypotheses were supported. Values of p > 0.05 show that the relationship is not significant and, in this case, hypotheses H1, H3 and H4 were not supported. Regarding the values of f^2, the results 0.02, 0.15 and 0.35 are, respectively, small, medium and large (COHEN, 1988). Only the f^2 of H1 can be considered medium, the others are considered large. Path coefficients have the same function as **β** in the regression equation. For example, for every 1 unit increase in innovativeness, PACAP increases by 0.593 and so on (HAIR JR. et al., 2014).

TABLE 3

Structural coefficients - 2019

Path	Hypothesis	Coefficient	P value	f^2	Supported
Turbulence -> Innovativeness	H1	-0.107	0.483	0.012	NO
Innovativeness -> PACAP	H2	0.593	0.000	0.542	YES
Innovativeness -> RACAP	H3	0.203	0.181	0.033	NO
PACAP -> RACAP	H4	0.272	0.096	0.058	NO
RACAP -> Performance	H5	0.405	0.000	0.196	YES

Source: Elaborated by the authors.

According to Table 4, regarding the consistency of the constructs, the latent variables resulted in values greater than 0.70, which shows their composite reliability (HAIR JR. et al., 2014). In the same sense, Table 4 presents the values of the average variances extracted (AVEs) of each construct, in which all of them met the required minimum of 0.50, which supports the internal validity of the model (FORNELL and LARCKER, 1981; HAIR JR. et al., 2014). It is also noted that, in 2020, the predictive value of the model (explanatory power) (R^2) of the dependent construct "Organizational Performance" was 22.9%, considered between medium and high.

TABLE 4

Correlation matrix between latent variables - 2020

LV	PE	IN	PA	RA	TU
Performance	0.832				
Innovativeness	0.363	0.876			
PACAP	0.414	0.627	0.741		
RACAP	0.478	0.679	0.736	0.774	
Turbulence	0.096	0.299	0.141	0.212	0.714
Composite reliability (CR)	0.899	0.908	0.829	0.856	0.756
Average Variance extracted (AVE)	0.693	0.767	0.550	0.600	0.510
R^2	0.229	0.089	0.393	0.620	
Q^2	0.140	0.044	0.181	0.312	

Notes: values on the diagonal are the square root of the AVEs; correlations are significant at 5%.
Source: Elaborated by the authors.

Table 4 demonstrates that the square roots of the average variances extracted (AVEs) were greater than the correlations between the constructs, thus confirming that the discriminant validity was met (FORNELL and LARCKER, 1981; HAIR JR. et al., 2014). It is also observed that the results of the predictive validity indicators, the R^2, indicate the quality of the adjusted model. In 2020, the R^2 of the "Organizational Performance" construct was 22.9%, considered between medium and large (COHEN, 1998). With regard to Q^2, this should result in a value > 0.0 (HAIR JR. et al., 2014), and, as noted, the Q^2 values indicate that the exogenous constructs have predictive relevance for the endogenous construct under consideration.

Table 5 presents the overall fit of the model and whether the hypotheses were supported in 2020. P values < 0.05 show that the relationships are significant, and in this case, all hypotheses were confirmed. Regarding the values of f^2, the results 0.02, 0.15 and 0.35 are, respectively, small, medium and large (COHEN, 1988), and the values presented, between medium and large. The path coefficients have the same function as β in the regression equation, that is, for each increase of 1 unit in innovativeness, PACAP increases by 0.627 and so on (HAIR JR. et al., 2014). To verify the significance of the β coefficients, bootstrapping was performed with 5,000 subsamples, with a significance level of 5%.

TABLE 5

Structural coefficients - 2020

Path	Hypothesis	Coefficient	P value	f^2	Supported
Turbulence -> Innovativeness	H1	0.299	0.031	0.65	YES
Innovativeness -> PACAP	H2	0.627	0.000	0.20	YES
Innovativeness -> RACAP	H3	0.358	0.001	0.42	YES
PACAP -> RACAP	H4	0.512	0.000	0.30	YES
RACAP -> Performance	H5	0.478	0.000	0.10	YES

Source: Elaborated by the authors.

As shown in Table 6, hypothesis H1, in 2019 (β = - 0.186, $p > 0.05$) and 2020 (β = 0.299, $p < 0.05$), indicates that the respondents' perception of market turbulence was felt in the second period, during the pandemic, when instability accentuated uncertainties in the company's strategic planning (CALANTONE, GARCIA and DROGE, 2003). The 2020 result was similar to that found by Bodlaj and Čater (2019), who validated the hypothesis of the influence of market turbulence on innovativeness ($\beta = 0.140$, $p < 0.05$).

TABLE 6

Structural comparison - 2019 and 2020

Hypotheses	β		P value		f^2		Supported	
	2019	2020	2019	2020	2019	2020	2019	2020
H1	-0.186	0.299	0.361	0,031	0.04	0.65	NO	YES
H2	0.588	0.627	0.000	0,000	0.53	0.20	YES	YES
H3	0.196	0.358	0.152	0,001	0.04	0.42	NO	YES
H4	0.272	0.512	0,003	0.000	0.15	0.30	YES	YES
H5	0.405	0.478	0,001	0.000	0.14	0.10	YES	YES

Source: Elaborated by the authors.

According to Hurley and Hult (1998), innovativeness is the idea of an organization's openness to new ideas, representing an aspect of a company's culture and, in this sense, would be a propensity for innovation that precedes PACAP and RACAP. This possibility was confirmed by hypothesis H2, referring to the relationship between innovativeness and PACAP in 2019 ($\beta = 0.588$, $p < 0.05$) and in 2020 ($\beta = 0.627$, $p < 0.05$), and which shows similar results to the work by Jiménez-Barrionuevo, Molina and García-Morales (2019), who found a link between the constructs ($\beta = 0.058$, $p < 0.05$), and hypothesis H3, thus associating innovativeness and RACAP, which in 2019 ($\beta = 0.196$, $p > 0.05$) and in 2020 ($\beta = 0.358$, $p < 0.05$) showed a similarity to the study by Jiménez-Barrionuevo, Molina and García-Morales (2019), who identified the same relation ($\beta = 0.410$, $p < 0.001$).

For microentrepreneurs and small entrepreneurs, innovation represents the most significant component of their entrepreneurial personality, which in turn reflects the behavioral aspects of an entrepreneur that are linked to creativity, critical thinking, opportunity recognition and expertise (MAMUN, MUHAMMAD and ISMAIL, 2017).

Hypothesis H4 was supported in 2019 ($\beta = 0.402$, $p < 0.05$) and in 2020 ($\beta = 0.512$, $p < 0.05$), confirming the work of Jiménez-Barrionuevo, Molina and García-Morales (2019), who found a relationship between the constructs ($\beta = 0.210$, $p < 0.05$), and by Cardozo, Kronmeyer Filho and Vaccaro (2019), which found a similar relationship ($\beta = 0.880$, $p < 0.001$).

According to Zubielqui, Jones and Lester (2016), to develop absorptive capacity, companies need to expose themselves to external knowledge in their environment (KOSTOPOULOS et al., 2011; MOILANEN, ØSTBYE and WOLL, 2014). This flow of knowledge creates foundations for the company's competence, thus developing its absorptive capacity, as a result it will be better prepared to engage in the acquisition, assimilation and exploitation of knowledge (KOSTOPOULOS et al., 2011; MOILANEN, ØSTBYE and WOLL, 2014).

Furthermore, simultaneously fostering innovation and absorptive capacity is important to obtain the best results in turbulent markets. The synergistic benefits allow companies to prosper while undergoing great market instability (TSAI and YANG, 2015).

Hypothesis H5, confirmed in 2019 ($\beta = 0.350$, $p < 0.05$) and in 2020, ($\beta = 0.478$, $p < 0.05$), is in line with the research by Cardozo, Kronmeyer Filho and Vaccaro (2019) , whose results confirmed the relationship between RACAP and performance ($\beta = 0.650$, $p < 0.05$), and by Chen, Lin and Chang (2009), in which the relationship was verified as positive ($\beta = 0.600$, $p < 0.05$).

In this sense, the results demonstrate that, regardless of the level of market turbulence in which the company finds itself, management must seek to maintain a continuous state of propensity for innovation, or *innovativeness*, to sustain a greater absorptive capacity in the organization, in order to generate the innovation needed for organizational management (JIMÉNEZ-BARRIONUEVO, MOLINA and GARCÍA-MORALES, 2019).

The results of this study are restricted to micro and small enterprises (MSEs) in Brazil, ex-ante and during the COVID-19 pandemic. This study offers some limitations due to the scarcity of similar empirical research, which is why comparisons were restricted, and data were collected during an unstable economic and political period, which made it difficult to reach a larger number of respondents, but despite these limitations, the sample was larger than that required by the G*Power software (FAUL et al., 2007).

CONCLUSION

For the first period, 2019, it was verified that only the relationships between innovativeness and PACAP and between RACAP and performance were sustained, demonstrating that innovation and achievement had a positive impact on performance, which may indicate that, in less unstable contexts, the ability to innovate would be less intense.

In the following period, 2020, all hypotheses were confirmed, which corroborates the positive influence of market turbulence on the propensity to innovate, positively motivating absorptive capacity and, as a consequence, the performance of micro and small enterprises (MSEs).

These results confirm the reaction capabilities of micro and small companies during a difficult moment in the economy and society in general. The COVID-19 pandemic led MSEs to increase their ability to innovate and absorb knowledge, thereby improving their performance, which contributed to their survival, a fact perceived when the years 2019 and 2020 are compared, and consistent with the hypotheses confirmed in the period of 2020.

To conclude, in periods of turbulence, which affect everyone, society, clients and competitors, absorptive capacity acts positively on the performance of the competition between micro and small companies.

According to the results, it is possible to highlight the interdependence of the dimensions of ACAP, suggesting that the intensity of Potential ACAP activities must be balanced with the company's investment in the structuring and institutionalization of methods and processes for Realized ACAP. Companies not only must be able to fully use their knowledge capacity, but they must also transfer and disseminate this external information to other relevant people, combining their previous knowledge with new knowledge, promoting an increase in results.

For future research, the inclusion of an analysis of the sectors of activity of MSEs is suggested as well as an investigation into the institutional role of the Federal Government in supporting MSEs, so that the relationships presented here can be evaluated, per se, finding out which activities suffered more than others during the critical period of the pandemic.

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