



ABSORPTIVE CAPACITY IN SMALL AND MEDIUM-SIZED ENTERPRISES: AN INVESTIGATION IN THE HOTEL SECTOR

 **Alessandra Cassol**

Ph.D. in Administration
University Federal Rural of Rio de Janeiro (UFRRJ)
Seropédica, Rio de Janeiro – Brazil.
alessandracassol.adm@gmail.com

 **Márcio Luiz Marietto**

Postdoctoral in Management
University Federal Rural of Rio de Janeiro (UFRRJ)
Seropédica, Rio de Janeiro – Brazil.
marcioluizmarietto@gmail.com

 **Vitor Miguel Mognon Trevizan**

Master's in Administration
University Atitus Educação
Passo Fundo, Rio Grande do Sul – Brazil.
vitormtrevizan@gmail.com

Abstract

Objective: To evaluate the relationship between the absorptive capacity and innovation of hotels (SMEs) in the west region of Santa Catarina, as well as their organizational performance.

Methodology/approach: A Survey was applied to a sample of 120 hotel managers and the analysis was carried out by applying structural equation modeling (SEM).

Originality/Relevance: This study is intended to help fill the gap in the absence of research on aspects that enhance innovation in the hotel sector, considering the high competition in the sector and consolidated practices.

Main results: Innovation in hotels in the region is dependent on the absorptive capacity and, consequently, it is able to influence the organizational performance of the sector. We highlighted the difficulties of transforming and applying the knowledge acquired externally to the routines of hotels. In addition, the structural characteristics of hotels influence AC. Hotels have difficulty transforming the knowledge and information acquired from the external environment.

Theoretical/methodological contributions: We contributed to the literature by studying hotels (SMEs) outside large centers. Our results showed that RACAP is the least evidenced element of AC in the investigated sector. This corroborates the thesis of a new configuration of the CA model for the service sector.

Social/Management Contributions: Studies on absorptive capacity and innovation can help managers in countries with intense environmental and economic changes, where these changes are quickly reflected in the tourism sector. We warn managers that they must identify the external information necessary for the business and integrate it with existing knowledge.

Keywords: Hotel. Services. Small and medium enterprises. Absorptive capacity. Innovation. Organizational performance.

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CAPACIDADE DE ABSORÇÃO EM PEQUENAS E MÉDIAS EMPRESAS: UMA PERSPECTIVA NO SETOR HOTELEIRO

Resumo

Objetivo do estudo: Avaliar qual a relação entre a capacidade absorptiva e a inovação dos hotéis (PMEs) da região oeste catarinense, assim como seu desempenho organizacional.

Metodologia/abordagem: Aplicou-se uma *Survey* em uma amostra de 120 gestores de hotéis e a análise ocorreu aplicando-se a modelagem de equações estruturais (MEE).

Originalidade/Relevância: Este estudo tem a intenção de ajudar a preencher a lacuna da ausência de pesquisas sobre os aspectos que potencializam a inovação no setor hoteleiro, considerando a alta concorrência do setor e das práticas consolidadas.

Principais resultados: A inovação nos hotéis da região é dependente da capacidade absorptiva e, conseqüentemente, ela é capaz de influenciar o desempenho organizacional do setor. Evidenciamos as dificuldades de transformação e aplicação dos conhecimentos adquiridos externamente às rotinas dos hotéis. Além disso, as características estruturais dos hotéis influenciam a CA. Os hotéis possuem dificuldade de transformar os conhecimentos e informações adquiridos do ambiente externo.

Contribuições teóricas/metodológicas: Contribuímos para a literatura estudando hotéis (PMEs) fora de grandes centros. Nossos resultados apontaram que a RACAP é o elemento menos evidenciado da CA no setor investigado. Isso corrobora com a tese de uma nova configuração do modelo de CA para o setor de serviços.

Contribuições sociais/para a gestão: Estudos sobre capacidade de absorção e inovação podem auxiliar os gerentes em países com intensas mudanças ambientais e econômica, em que essas mudanças são rapidamente refletidas no setor do turismo. Alertamos os gestores que devem identificar as informações externas necessárias para o negócio e integrá-las ao conhecimento existente.

Palavras chave: Hotéis. Serviços. Pequenas e médias empresas. Capacidade absorptiva. Inovação. Desempenho organizacional.

CAPACIDAD DE ABSORCIÓN EN PEQUEÑAS Y MEDIANAS EMPRESAS: UNA PERSPECTIVA EN EL SECTOR HOTELERO

Resumen

Objetivo del estudio: Evaluar la relación entre la capacidad de absorción y la innovación de los hoteles (PYME) de la región oeste de Santa Catarina, así como su desempeño organizacional.

Metodología/enfoque: Se aplicó una Encuesta a una muestra de 120 gerentes de hotel y el análisis se realizó aplicando modelos de ecuaciones estructurales (SEM).

Originalidad/Relevancia: Este estudio pretende ayudar a llenar el vacío en la ausencia de investigaciones sobre aspectos que potencien la innovación en el sector hotelero, considerando la alta competencia en el sector y las prácticas consolidadas.

Principales resultados: La innovación en los hoteles de la región depende de la capacidad de absorción y, en consecuencia, es capaz de influir en el desempeño organizacional del sector. Resaltamos las dificultades de transformar y aplicar los conocimientos adquiridos externamente a las rutinas de los hoteles. Además, las características estructurales de los hoteles influyen en AC. Los hoteles tienen dificultades para transformar el conocimiento y la información que adquieren del entorno externo.

Contribuciones teóricas/metodológicas: Contribuimos a la literatura estudiando hoteles (PYMES) fuera de los grandes centros. Nuestros resultados mostraron que RACAP es el elemento de AC menos evidenciado en el sector investigado. Esto corrobora la tesis de una nueva configuración del modelo CA para el sector servicios.

Contribuciones sociales/de gestión: Los estudios sobre la capacidad de absorción y la innovación pueden ayudar a los gerentes en países con cambios ambientales y económicos intensos, donde estos cambios se reflejan rápidamente en el sector turístico. Advertimos a los directivos que deben identificar la información externa necesaria para el negocio e integrarla con el conocimiento existente.

Palabras clave: Hoteles. Servicios. Pequeñas y medianas empresas. Capacidad de Absorción. Innovación. Desempeño de la organización.

Introduction

The literature on innovation in tourism has emphasized the need for increased empiricism and theorization on the various aspects that influence this phenomenon (Fernandes & Pires, 2021; Tejada et al., 2013; Thomas & Wood, 2015). One of these aspects is Absorptive Capacity (AC). For the purposes of this research, AC is defined here as the organization's ability to absorb new knowledge from its environment in order to become more innovative and flexible, and consequently achieve a more favorable performance in terms of business survival (Cassol et al., 2019; Hassania & Mosconia, 2021; Lane et al., 2006).

Evidence suggests that tourism companies are particularly dependent on external sources of knowledge when compared to companies in other sectors (Thomas & Wood, 2014; Tsai, 2022). Therefore, the capacity to absorb knowledge can be crucial in the process of acquiring new knowledge (Hurtado-Palomino, Gala-Velásquez & Ccorisapra-Quintana, 2022) and consequently generate innovation (Pikkemaat, Peters & Bichler, 2019), and improve performance (Al-Shami et al., 2021; Hossain et al., 2021; Li et al., 2022). Thus, we understand that innovation plays a role in the daily activities of service providers in the tourism sector, influencing their organizational practices and business environment, even in strictly regional settings, such as small hotels or accommodations located away from major urban centers (Bessant & Tidd, 2009; Bezerra et al., 2016; Sacramento & Teixeira, 2019).

In the tourism sector, the hotel industry operates in an extremely competitive market with historically consolidated practices, making it challenging to implement innovative strategies that influence performance (Martin-Rios & Ciobanu, 2018). This difficulty seems to be exacerbated, particularly for small and/or medium-sized family-run hotels located far from key hubs, as they are part of a less competitive market and have a lower need for innovation (De Jorge & Suárez, 2014). These hotels exhibit a wide variety of management arrangements unique to the region, offering idiosyncratic service aspects to their customers. For this reason, we consider it important to assess the relationship between Absorptive Capacity, Innovation, and the impact of these phenomena on the performance of hotels within a segment of the industry characterized by these specific characteristics (SMEs located far from major centers).

According to the Federation of Commerce of Goods, Services, and Tourism of Santa Catarina (Fecomércio, 2018) and the Brazilian Association of Hotel Industry of Santa Catarina (ABIH, 2018), the tourism industry represents 12.5% of the state's GDP, with 91.5% of lodging establishments being micro (up to 09 employees) and small businesses (from 10 to 49



employees). Furthermore, 74.2% of these establishments are independent ventures with family management.

The passage of the pandemic scenario has posed several challenges for the hotel industry. In the state of Santa Catarina, the majority of hotels remained closed from May to September 2020, and those that remained operational had occupancy rates of less than 5% (ABIH-SC, 2022). The recovery of this sector has shown exponential growth, with an average national occupancy rate of 44.23% in July 2021. The Northeast and South regions stand out in this scenario, with an increase of nearly 40% and 32%, respectively (Maciel, 2021). In the same year, domestic tourism accounted for 6.4% of the Brazilian GDP (World Travel & Tourism Council, 2022). Currently, the tourism sector is showing a significant recovery, surpassing pre-pandemic indicators for the first time. For example, in April 2022, tourism activities exceeded those of February 2020 by 3.8% (Fecomércio, 2022).

This study aims to help fill the research gap on the aspects that enhance innovation, specifically through absorptive capacity, in small and medium-sized enterprises (SMEs) in the hotel sector. There is a need to determine and expand the direct and indirect relational determinants of innovation, especially in the context of tourism companies in developing countries, such as those in Latin America (Pikkemaat, Peters & Bichler, 2019). In this regard, potential absorptive capacity can benefit organizations by enhancing their innovation capabilities and, consequently, helping them achieve better innovation performance (Hurtado-Palomino, Gala-Velásquez & Ccorisapra-Quintana, 2022). In this sense, this research aims to answer the following question: What is the influence of absorptive capacity on innovation and performance in hotels (SMEs) in the West of Santa Catarina? Our objective was to evaluate the relationship between absorptive capacity and the innovation displayed by hotels (SMEs) in the West of Santa Catarina. Additionally, we assessed the impact of this phenomenon on the organizational performance of hotels, aiming to absorb and conceive innovations that sustain their performance and help them stay competitive in the market. To analyze organizational performance, we adopted the assumptions of Mitrega et al. (2017), which propose the use of subjective measures collected from the respondents' opinions. The method employed was a survey conducted on a sample of 120 hotels with characteristics of SMEs located in the West of Santa Catarina. The relationships were analyzed using the structural equation modeling (SEM) technique.

The results demonstrated that absorptive capacity positively influences process innovation and the perceived performance of managers in small and medium-sized hotels



located in the region. However, the findings also showed that, despite the positive influence of AC on innovation, hotels face challenges in transforming the knowledge and information acquired from the external environment and applying them to their processes. These conclusions highlight the management practices of these establishments while also suggesting avenues for future research to further elucidate the observed phenomenon.

This study contributes to understanding the relationship between absorptive capacity and innovation in the hotel services sector. Our findings indicated that realized absorptive capacity (RACAP) is the least emphasized element of AC in the investigated sector. This finding supports the proposition of a new configuration of the AC model for the services sector, specifically in the case of the hotel sector.


In terms of managerial contributions, the results of this study can guide hotel sector managers in the absorption and transfer of knowledge, which are crucial for organizational management and the primary source of competitive advantage. Studies like this can assist administrators in improving performance, particularly in countries experiencing intense environmental and economic changes, such as Brazil, where these changes are quickly reflected in the tourism sector.

This article is organized into four sections, with the first being the introduction. Next, a literature review is conducted, along with a description of the proposed hypotheses. The third section discusses the methodology used, and the fourth section analyzes the results. Finally, we present a discussion, conclusions, and directions for future research.

Theoretical framework and hypotheses

The research on absorptive capacity and innovation in SMEs and the hotel sector.

Thomas and Wood (2014) drew attention to the lack of studies regarding the various innovation processes (types, capabilities, and incentives) that occur in organizations associated to tourism. The authors contributed to reducing the scarcity of such studies by proposing and seeking to validate a measurement instrument for absorptive capacity. They conducted an investigation in the British hotel sector, and the results demonstrated that the proposed scale did not achieve reliability. Thus, the authors suggested that absorptive capacity needs to be reframed and modified when applied to tourism. Subsequently, Thomas and Wood (2015) conducted a systematic literature review suggesting a new theoretical model for the sector. The main focus of the study's findings, regarding the theoretical debate on absorptive capacity (AC)



and innovation in tourism, was the possibility that the authors had overlooked the context of small and medium-sized enterprises (SMEs) in the tourism industry. The authors pointed out that in their previous study, the failure to identify the distinction between potential and realized absorptive capacity may have been due to the theoretical assumptions used in the model, which only accounted for large manufacturing organizations. When applying these assumptions to tourism organizations, especially those classified as SMEs, there was no adherence to the expected results. Naturally, some of the authors' proposals aimed to promote studies assessing how social relationships influence the absorptive capacity of SMEs.

Furthermore, the literature has acknowledged that social relationships within organizations are critical to absorptive capacity. How new knowledge is assimilated internally and the role of the individual social actor immersed in the organizational context are relevant questions that warrant further investigation, as each sector and/or organization has peculiarities regarding these processes (Hotho et al., 2012; Thomas & Wood, 2015).

Studies that investigate absorptive capacity and innovation in SMEs in the tourism sector are still very scarce. If we consider the hotel sector, the scarcity of research on innovation remains high (Fernandes & Pires, 2021). However, although it is not specifically about the hotel sector, we believe that the work of Bezerra et al. (2016) deserves consideration in this discussion, as it addresses absorptive capacity in the Brazilian tourism context. The authors conducted a study with 42 travel agencies to analyze the four dimensions of their absorptive capacity (Acquisition, Assimilation, Transformation, Exploitation). The authors concluded that creative imitation is one of the main sources of innovation for the tourism agencies, making them open to new knowledge. The agencies also created informal intra-organizational networks that ensure the quick and dynamic transmission of knowledge and information within the organization.

More recently, Cruz-Ros et al. (2021) investigated the influence of the four dimensions of absorptive capacity on innovation in service delivery processes in companies in the Colombian tourism sector. The data analysis of 134 companies revealed that this innovation is also positively influenced by only two out of the four dimensions of ACAP, specifically, transformation and exploitation, which refer only to realized absorptive capacities. The results further indicate that among these two dimensions, knowledge exploitation has a greater influence. They also suggest that innovation in service delivery processes has a positive and significant relationship with firm performance. Based on this theoretical framework, we propose the first research hypothesis:

H1: Knowledge absorption capacity influences innovation in the hotel industry.

The concept of knowledge absorption capacity (AC) has been defined as an organization's ability to absorb new knowledge from its environment to become more innovative and flexible, thus achieving a more favorable performance in terms of business survival (Cassol et al., 2019; Flatten et al., 2011; Lane et al., 2006). The findings of Qing et al. (2022) confirm that knowledge absorption capacity moderates green innovation in processes and products, both in the short and long term, supporting the studies by Santos et al. (2021). Companies with a strong AC can acquire recently generated knowledge, combine it with existing knowledge, and apply it to implement innovative processes that enable the company to achieve superior performance (García- Sánchez et al., 2018; Wales et al., 2013).

In one of the few available studies on knowledge absorption capacity (AC) in the hotel sector, Kale et al. (2019) investigated the mediating role of strategic agility in the relationship between knowledge absorption capacity and performance of accommodation establishments in Turkey. The motivation behind the study stems from the high instability of the accommodation sector in the country due to environmental conditions (conflicts) in the region. The study did not specify the types of accommodations (hotels, hostels, flats, among other categories) or the organizational categories such as small, medium, or large organizations. The authors sent questionnaires to 1,600 establishments, but only 190 were validated. They employed exploratory and confirmatory factor analysis as the statistical method. The results indicated, similar to the study by Thomas and Wood (2014), that knowledge absorption capacity (AC) was determined in only two dimensions (acquisition and application) out of the four possible dimensions. Only the dimension of exploration had an impact on organizational performance. However, both dimensions positively affected strategic agility, which also had a positive effect on organizational performance. They further revealed that the two dimensions have an indirect effect on organizational performance through strategic agility. However, the research by Kale et al. (2019) directly contributes to this study, as the authors stated: Any study investigating the effect of absorption capacity on the overall performance of the firm was not found. Therefore, this research aims to fill this theoretical gap, including the perspective of investigating the influence of Absorptive Capacity on the performance of small and medium-sized enterprises in the hotel sector. In this regard, we propose the second research hypothesis:



H2: Knowledge absorption capacity influences the organizational performance of companies in the hotel sector.

Service innovation is linked to the updating of services that have been implemented. Its performance is progressively measured as a set of criteria capable of enhancing the competitive strategy of any organization (Hussain et al., 2016). Therefore, the secret to success, when it comes to innovation, lies in finding solutions that result in added value to the product and/or service, differentiating one organization from another and having an impact on organizational performance, provided that this added value exceeds the cost involved in the innovation process (Cassol et al., 2018; Porter, 2001).

Innovation can provide sustainable competitive advantages for service firms that consider the absorption of external knowledge as a key strategic issue. Knowledge acquired through external network relationships is widely accepted as one of the most important resources for a firm to be innovative. This is particularly true for the tourism sector (Hameed et al., 2021), in which capabilities associated with the acquisition, assimilation, and exploitation of external knowledge (absorptive capacity) are crucial (Binder, 2018).

In order to understand this relationship, De Massis et al. (2018) conducted a study on the high capacity for innovation and superior organizational performance despite resource constraints in German *Mittelstand* (small or medium-sized German enterprises in products and/or services, located outside urban centers, which are family-managed and at the same time operate as players in the global market, recognized for high quality and innovation). The authors presented a model with six key characteristics of organizations with high innovation rates despite severe resource constraints. The insights from the study and the model can serve as an example for contexts outside of Germany.

Undoubtedly, innovation has been widely accepted as a critical factor for businesses, organizations, and hospitality and tourism destinations, and it is recognized as a strategic aspect for achieving long-term growth and success (Pikkemaat, Peters & Bichler, 2019). In the literature, there is only limited empirical evidence on the effect of innovation on the financial performance of tourism companies (Kallmuenzer & Peters, 2018). Thus, the third hypothesis of this research aims to investigate the influence of innovation on the performance of small companies in the hotel industry.



H3: Innovation can influence the organizational performance of companies in the hotel industry.

Method

Population and sample

Considering the recovery and growth of the hotel industry in the southern region of the country, which has been amplified by the challenges faced during the pandemic scenario, we have chosen to define the sample of the research as lodging establishments located in the state of Santa Catarina. Specifically, we focus on those located in the Western region, considering its difficulty in developing tourist demand. According to a report by the Tourism Development Agency of Santa Catarina (SANTUR, 2020), in 2020, the region ranked among the 5 regions with the lowest representation of tourist demand in the state, accounting for only 2.06% of the total tourist demand.

In 2018, at the time of data collection, the state of Santa Catarina had 1,782 lodging establishments. According to data from the Annual Social Information Report (RAIS) (Brasil, 2017), the 118 municipalities that make up the Western region of the state had 172 hotels (Ministry of Labor and Employment, 2016), which represents the target population of the research. For sample size calculation, we followed the approach proposed by Devellis (2017), which suggests having a minimum of five respondents for each measurement item. The scale used in the research consists of 23 items, requiring a minimum of 115 respondents. The final sample consisted of 120 valid questionnaires, with one questionnaire per establishment. Another reason for justifying the sample size is the use of PLS-SEM, which does not require normally distributed data, and smaller samples are acceptable (Hair Jr et al., 2014).

All hotels were initially contacted via email, and data collection was subsequently conducted via phone and in-person by the researcher. The selection criterion for research participants was their role in the hotel, thus managers and hotel owners were selected. The basis for this criterion was the necessity for knowledge about hotel management processes in order to answer the questions. Regarding the gender of the respondents, a balance was observed, with 63% being male and 57% being female. The level of education was correlated with the age range of the respondents, where 70.8% were up to 45 years old, and 50.9% had either ongoing or completed postgraduate education.

With respect to the profile of the surveyed establishments, it was noted that 71.7% of the hotels have had a presence in the market for approximately 30 years. As for the number of employees, 59.1% of the hotels have 10 to 49 employees, qualifying as Small Enterprises (SE), and 40.8% have up to 9 employees, qualifying as Microenterprises (ME) (SEBRAE, 2013). Table 1 presents these data in a more detailed manner.

Table 1.

Sample Characterization

| Dimension | Variable | Attribute | Frequency | % |
|-----------|---------------------------------|----------------------------------|-----------|------|
| Manager | Gender | Male | 63 | 47.5 |
| | | Female | 57 | 52.5 |
| | Educational level | High school diploma | 9 | 7.5 |
| | | Undergraduate degree in progress | 10 | 8.3 |
| | | Completed undergraduate degree | 40 | 33.3 |
| | | Postgraduate degree in progress | 35 | 29.2 |
| | | Completed postgraduate degree | 26 | 21.7 |
| | Age range | Up to 25 years old | 22 | 18.3 |
| | | From 26 to 30 years old | 15 | 12.5 |
| | | From 31 to 35 years old | 23 | 19.2 |
| | | From 36 to 40 years old | 25 | 20.8 |
| | | From 41 to 45 years old | 14 | 11.7 |
| | | Over 45 years old | 21 | 17.5 |
| | Position | Manager | 43 | 35.8 |
| | | Supervisor | 54 | 45.0 |
| Owner | | 23 | 19.2 | |
| Company | Number of hotel employees | Up to 9 employees | 49 | 40.8 |
| | | From 10 to 49 employees | 71 | 59.1 |
| | Years of operation of the hotel | Up to 5 years | 4 | 3.3 |
| | | Between 6 and 10 years | 11 | 9.2 |
| | | Between 11 and 20 years | 41 | 34.2 |
| | | Between 21 and 30 years | 45 | 37.5 |
| | | Above 30 years | 19 | 15.8 |
| | Family company | No | 62 | 51.7 |
| Yes | | 58 | 48.3 | |

Source: Research data (2018).

As a research technique, we sent a questionnaire to the email addresses of the 172 hotels. The research objective was explained in the body of the email, along with the instruction that it should be completed by the hotel owner or manager. The email response rate was 30%. Therefore, we conducted in-person data collection at the hotels that had not yet responded to the survey, resulting in 120 valid questionnaires. This represents a response rate of 70% of the research population. Data collection took place between August and November 2018.




Measurement and validation of constructs

All items for each construct were measured on a 7-point Likert scale, ranging from 1 (strongly agree) to 7 (strongly disagree). These were adapted from previous studies published in high-impact scientific journals.

- *Absorptive Capacity*: To measure AC, we used the scale developed by Flatten, Engelen, Zahra, and Brettel (2011). The scale consists of 14 items that measure: acquisition (3 items), assimilation (4 items), transformation (4 items), and exploitation (3 items). The scale developed by Flatten et al. (2011) has also been used in other studies in the tourism sector, such as in García-Villaverde et al. (2021), who investigated 238 cultural tourism companies in the World Heritage Cities of Peru (Arequipa, Cusco, and Lima-center). Ponce-Espinosa, Peiro-Signes, and Segarra-Oña (2022) also used the scale to investigate 86 hospitality and food service companies in Ecuador. In Brazil, Engelman et al. (2016) validated the scale by conducting translation, adaptation, expert evaluation, and testing procedures on a sample of 495 companies of different sizes, industry sectors, and technological intensities. We conducted a pre-test of the scale and obtained a Cronbach's alpha of 0.905.
- *Innovation and Organizational Performance*: We used the scale developed by Mitrega et al. (2017). To assess innovation, a set of 5 items was employed, requiring respondents to rate the degree to which the company enhances its routines in terms of service, process, marketing, and business model innovations. To measure performance, 4 items were employed to assess elements related to organizational performance. After the pre-test, the Cronbach's alpha for innovation was 0.724, and 0.687 for performance, respectively.

The validation process followed the steps proposed by DeVellis (2017), which involved the following detailed sequential stages.

(1st) step, **clearly defining what is to be measured**: Since the theoretical constructs that comprise the research have already been extensively addressed and tested in the literature, the



selection of validated measures was chosen. Thus, the scales developed by Flateen et al. (2011) were selected to measure absorptive capacity and its dimensions of potential absorptive capacity and realized absorptive capacity. Additionally, the scale created by Mitrega et al. (2017) was used to measure service innovation and organizational performance.

(2nd) step, **generating a pool of items:** All items were evaluated by the researchers based on pre-established criteria such as clarity, questionable relevance, and undesirable similarities between items. The purpose of this stage was to verify whether the items reflected the intended purpose of the scale.

(3rd) step, **determining the measurement format:** We used the Likert scale, which translates the relationship into degrees of agreement and disagreement with equal intervals. We opted for a 7-point scale, ranging from 1 (strongly agree) to 7 (strongly disagree).

(4th) step, **having a pool of initial items reviewed by experts:** We selected 9 experts, including 4 scholars in Absorptive Capacity and Innovation and 5 hotel managers. We requested these experts to evaluate the research items to ensure validity. The review conducted by the experts maximized and assisted in the content validity of the scale.

(5th) step, **considering the inclusion of validation items:** We considered the requests and suggestions for the inclusion and modification of proposed items by the experts. The suggestions were mainly semantic in nature, aiming to make the questions more understandable to the target audience. After making the adjustments indicated, we administered the questionnaire to a sample of 20 hotels located in the research region, in order to validate the reliability and normality of the items.

(6th) step, **managing items in a development sample:** the measurement instrument was administered to a statistically compatible sample to ensure that the results could be evaluated in the next step (7th step). Considering that the sample size should be a minimum of five respondents for each measurement item, the complete scale consists of 23 items, resulting in a minimum of 115 respondents. In this research, we obtained 120 valid questionnaires.

(7th) step, **evaluating the items:** we assessed the item correlations and conducted exploratory and confirmatory factor analysis. Moreover, we performed Cronbach's alpha reliability test for all dimensions. All these tests will be presented in the next section.

(8th) And the final step, **optimizing the scale size:** we assessed the effect of scale length on instrument reliability through analysis of brevity, size, and item quantity.



Data treatment

After completing the data collection phase, the data were organized, coded, and tabulated for statistical analysis and interpretation, following the guidelines outlined by Hair et al. (2014). Frequency and percentage checks for numerical data, as well as testing for the normal distribution of variables, were conducted using the Statistical Package for Social Sciences (SPSS) software, version 24.0.

We also employed structural equation modeling (SEM) with partial least squares (PLS-SEM) estimation using SmartPLS software, version 2.0. First, we assessed the measurement model, examining convergent validity (average variance extracted - AVE), internal consistency (composite reliability and Cronbach's alpha), and discriminant validity (Fornell-Larcker criterion). The second stage involved evaluating the structural model, evaluating the significance of correlations and regressions using the Student's t-test.

Results

Measurement model evaluation

The first aspect examined was convergent validity assessed through average variance extracted (AVEs), where AVE values should be greater than 0.50 (Henseler & Ray, 2016). When estimating the measurement model, we observed that the constructs of absorptive capacity and innovation had AVEs below 0.5. Therefore, following the recommendations of Hair et al. (2016), who suggested excluding variables with lower factor loadings to improve the AVE result, we removed the following variables from the absorptive capacity construct: ASS1 (factor loading = 0.620), TRAN1 (factor loading = 0.639), and TRAN4 (factor loading = 0.602). Additionally, we excluded variable IP4 (factor loading = 0.613) from the innovation construct. The organizational performance construct did not require any adjustments. With the exclusion of these variables, all constructs exhibited AVE values greater than 0.50, indicating that the model converges to a satisfactory result (Fornell e Larcker, 1981).

In the second stage of model analysis, we assessed the values of internal consistency (Cronbach's alpha - CA) and composite reliability (CR). These parameters are used to analyze whether the sample is free from biases and if the dataset is reliable. Cronbach's alpha values above 0.60 and 0.70 are considered adequate in exploratory research, while values of 0.70 and 0.90 for CR are considered satisfactory (Hair et al., 2014).

Table 2 presents the indicator reliability results ($CA \geq 0.7$); the reliability indices for each construct ($\rho_A \geq 0.7$); the composite reliability ($CC \geq 0.7$), and the convergent validity ($AVE \geq 0.5$).

Table 2

Model fit values of the SEM model after removing variables with lower factor loadings

| Constructs | AC | CC | AVE | R ² | Q ² |
|---------------------|-------|-------|-------|----------------|----------------|
| Absorptive Capacity | 0.905 | 0.921 | 0.514 | ----- | 0.388 |
| Performance | 0.687 | 0.809 | 0.516 | 0.689 | 0.218 |
| Innovation | 0.724 | 0.830 | 0.552 | 0.671 | 0.272 |

Source: Research data (2018).

Afterwards, we evaluated the Discriminant Validity (DV) of the SEM, which serves as an indicator that the latent constructs or variables are distinct and unrelated to one another (Hair et al., 2014). In this study, we assessed DV through Cross Loadings, which refer to the indicators having higher factor loadings on their respective latent variables (LV or constructs) than on others (Chin, 1998). Upon analyzing Table 3, we observed that the factor loadings of the observed variables (OVs) on the original constructs (LVs) are always higher than on others. Thus, we have established that the model has discriminant validity according to the Chin's criterion (1998).

Table 3

Cross-loading values of the observed variables on the latent variables

| Latent variables (LV) | Observed variables (OV) | | |
|-----------------------|-------------------------|--------------|--------------|
| | Absorptive Capacity | Performance | Innovation |
| AQU1 | 0.726 | 0.624 | 0.643 |
| AQU2 | 0.690 | 0.557 | 0.572 |
| AQU3 | 0.757 | 0.617 | 0.622 |
| ASS2 | 0.737 | 0.528 | 0.568 |
| ASS3 | 0.679 | 0.516 | 0.499 |
| ASS4 | 0.669 | 0.532 | 0.525 |
| TRAN2 | 0.687 | 0.533 | 0.539 |
| TRAN3 | 0.743 | 0.655 | 0.670 |
| EXP1 | 0.772 | 0.617 | 0.651 |
| EXP2 | 0.736 | 0.604 | 0.600 |
| EXP3 | 0.684 | 0.563 | 0.551 |
| DE1 | 0.510 | 0.672 | 0.524 |
| DE2 | 0.685 | 0.757 | 0.657 |
| DE3 | 0.556 | 0.650 | 0.480 |
| DE4 | 0.548 | 0.786 | 0.555 |
| IP1 | 0.683 | 0.647 | 0.823 |
| IP2 | 0.515 | 0.554 | 0.627 |
| IP3 | 0.652 | 0.587 | 0.790 |
| IP5 | 0.575 | 0.519 | 0.717 |

Source: research data (2018).



Analysis and results of the structural model

After ensuring convergent validity, model reliability, and discriminant validity, we performed the analysis of the structural model.

The first step was to evaluate the Pearson's determination coefficients (R2). R2 assesses the portion of variance in the endogenous variables explained by the structural model, indicating the quality of the fitted model (Ringle et al., 2014). In social and behavioral sciences research, R2 values of 2% are classified as small effects, 13% as medium effects, and 26% as large effects (Cohen, 1988). As shown in Table 2, the dependent constructs represented by innovation and performance exhibit large effects. Furthermore, we conducted predictive validity analysis ($Q^2 > 0$) or the Stone-Geisser indicator, which assesses the accuracy of the fitted model (Hair et al., 2014). The results can also be observed in Table 2. Finally, we tested the significance of the relationships through the Student's t-test, which allows us to assess the significance of correlations and regressions, confirming a t-value greater than 1.96 (Hair et al., 2014), as shown in Table 4.

Table 4

Values Of The Fitted Model

| Research Hypotheses | Structural Coefficient | Standard Error | T value | P value |
|------------------------------------|------------------------|----------------|---------|---------|
| Absorptive Capacity -> Performance | 0.517 | 0.112 | 4.619 | 0.000 |
| Absorptive Capacity -> Innovation | 0.821 | 0.031 | 26.795 | 0.000 |
| Innovation -> Performance | 0.355 | 0.112 | 3.182 | 0.001 |

Source: Research data (2018).

Thus, based on the conducted tests, we confirm the positive influence of Absorptive Capacity (AC) on innovation and, consequently, its positive impact on the performance of the investigated hotels, as observed in Figure 1 of the final structural model. We detected a strong relationship between knowledge absorption capacity and innovation (26.795), as well as its positive impact on performance (4.619) of small and medium-sized hotels. Additionally, it is evident that innovation has a positive impact on performance (3.182).

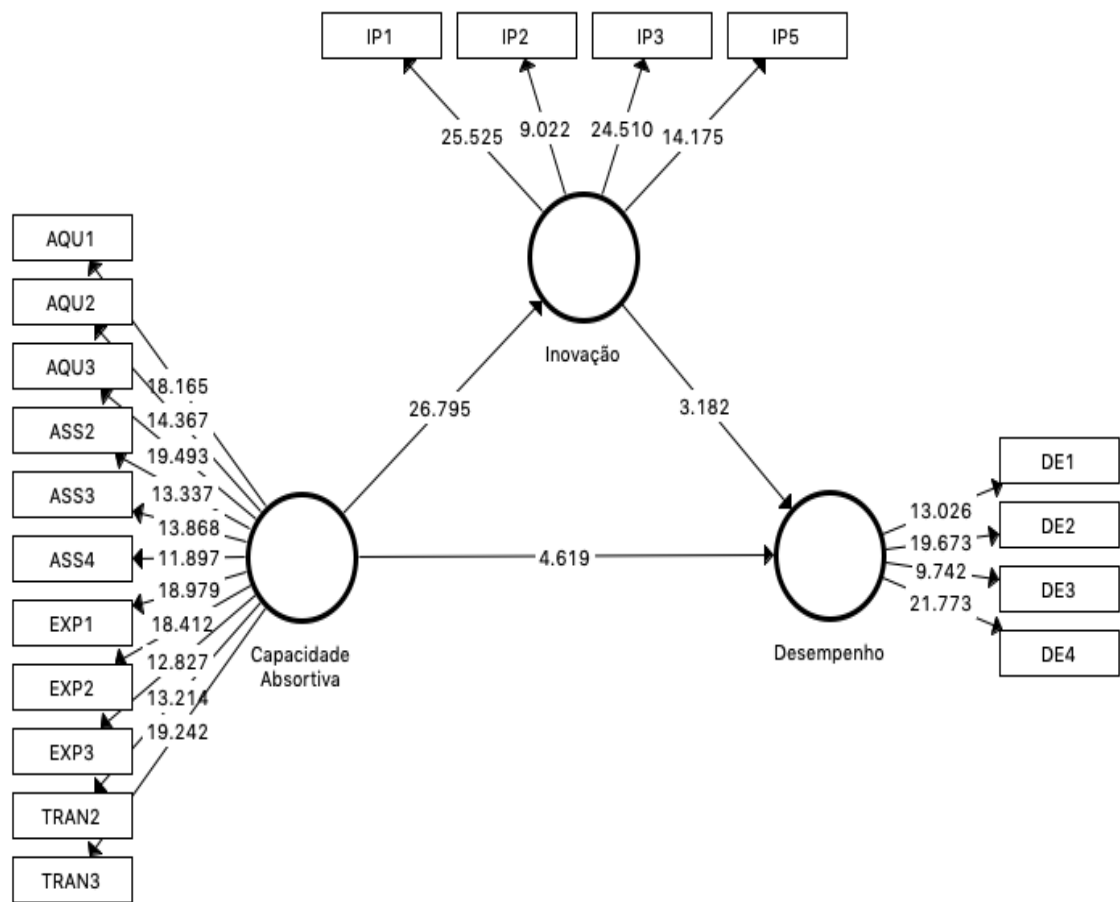
The results demonstrated that, regarding potential absorptive capacity (PACAP), the most common practices in the investigated hotels involve encouraging employees to seek new information through training in their field of expertise. The acquisition of knowledge is facilitated by the acquisition of new learnings from external sources outside the hotels. Therefore, the assimilation of knowledge was related to the processes and routines that enable



the interpretation, understanding, and internalization of newly acquired external information or knowledge.

Figure 1

Structural Equation Model (SEM) With Student's T-Test Values



Source: research data (2018).

Theoretical and managerial discussions

The findings of this research reinforce those of other studies conducted in the tourism sector (Al-Shami et al., 2021; Binder, 2018; Cruz-Ros et al., 2021; Li et al., 2022; Thomas & Wood, 2014), highlighting the significant dependency of innovation in the investigated sector on absorptive capacity and its subsequent influence on organizational performance. Other studies conducted in SMEs have also determined that absorptive capacity enhances firm



performance (Cassol et al., 2016; Dávila et al., 2018; Santos et al., 2021; Flatten et al., 2011; Ma et al., 2021; Tzokas et al., 2015).

Regarding realized absorptive capacity (RACAP), when analyzing the research data, we observed that knowledge transformation capability is the least noticeable among the dimensions of absorptive capacity. In examining practices related to knowledge transformation, we found that the sharing of acquired knowledge and the proposal of improvement suggestions based on shared information are common in the investigated hotels. While managers have a practice of supporting the implementation of employee suggestions and adopting new technologies to create and deliver services that meet guest needs and complaints in their hotels, these practices are much less frequent and have much less breadth compared to those observed in PACAP. The practice observed in the research environment involves conducting regular meetings and brief encounters among employees from different hotel operational departments. Managers encourage knowledge exchange among operational departments, which then evaluate the applicability of externally acquired knowledge and integrate it into the internal environment, considering the existing knowledge.

These results demonstrate that the structural characteristics present in SMEs influence absorptive capacity (AC), and this can be determined by the size of the company (Zou et al., 2018). The investigated hotels exhibited a common pattern of structural configuration found in SMEs (family management), where practices related to AC are also common in a large part of the investigated sector. We also observed that there is no clear division of routines linked to the different dimensions of AC. Therefore, we conclude that, similar to studies in other service-providing SME sectors (Hussain et al., 2016), innovation in the hotel sector outside major centers is associated to the updating of services that have been implemented and have brought results to business performance. These innovations are directly related to the establishments' absorptive capacity, especially in the elements of PACAP.

However, we could conclude that hotels face difficulties in transforming the knowledge and information acquired from the external environment and, consequently, applying them to their processes. These elements belong to RACAP. In a way, these results are similar to those found in Kale et al. (2019). We can infer that this phenomenon may be the difficulty in transforming acquired knowledge and applying it to hotel routines. This is recurrent within certain sectors of Brazilian SMEs (Cassol et al., 2019). In the context of early-stage post-IPO American startups, the phenomenon remains unchanged, and two reasons for this are the

accumulation of knowledge gained through their preparation processes and the lack of time to acquire external knowledge and develop their own knowledge (Jeong et al., 2020).

We can also infer that the idiosyncrasies that make up the organizational structure of SMEs (Hotho et al., 2012; Jiménez et al., 2021; Thomas & Wood, 2015), generally characterized by family management with limited formal education and intuitive administrative principles, hinder the adaptation and application of this new knowledge to the business. For example, let's suppose that a collaborator (a member of the hotel's owning family) attends a training course in the hospitality field. Upon returning from the course, they tend to share the new information with the managers and other employees of the hotel, where we observe the stages of knowledge acquisition and assimilation (PACAP). However, convincing the managers (hotel owners) to adapt this new knowledge to the reality of the business and effectively implement them (transformation and application stage - RACAP) into the business routines tends to be extremely difficult and time-consuming. Therefore, studies by Cruz-Ros et al. (2021), Kale et al. (2019), and Thomas and Wood (2014) have discussed the multidimensionality of AC and its configuration in the tourism sector, which presents distinct peculiarities from the industrial sectors that have been the focus of empirical AC studies in recent years, which can lead to further explanations about the causes of this phenomenon.

Finally, when analyzing the practices related to innovation, we are looking at the updating of services that have been implemented and have yielded results for the hotels. In the surveyed environment, we observed that innovations are related to a) the introduction of new services not previously offered by the hotel; b) the use of technologies capable of enhancing the customer experience; c) the implementation of improvements in the currently offered services. The results showed that these innovations tend to have a positive impact on hotel performance.

Final considerations

In this research, we approached absorptive capacity as a unidimensional construct, analyzing its direct influence on innovation and performance in SMEs in the hotel sector.

The results of this study contribute to the tourism and hospitality literature, specifically to the hotel sector composed of SMEs outside major centers, as few studies have focused on understanding the configuration of innovation in the hotel sector and its relationship with the capacity to absorb external knowledge. As a theoretical implication, our results indicate that





RACAP is the least emphasized element of AC in the investigated sector. This supports the thesis of a new configuration of the AC model for the service sector, specifically in this case, the hotel sector.

In terms of managerial contributions, the results of this study can guide hotel management through the practices evidenced in the sector. Studies on absorptive capacity and innovation can assist managers in improving performance, especially in countries with intense environmental and economic changes, such as Brazil, where these changes are quickly reflected in the tourism sector. Thus, decision-making needs to be based on strategic information, and absorptive capacity becomes crucial for this purpose. The study highlights the difficulties of knowledge transformation and application, alerting hotel managers and/or owners that investing in human resources requires identifying the necessary external information for the business and integrating it with existing knowledge, using it for the benefit of the company. The innovation generated from this knowledge should be associated to business performance.

Limitations and suggestions for future research

As limitations, we highlight the possibility of social desirability bias, which refers to the bias of providing socially desirable responses to management practices, as individuals strive to be seen favorably in relation to their behaviors (Krumpal, 2013; Leggett et al., 2003). The research was conducted with hotel managers, which may introduce a certain favorable bias. The characteristic of SME businesses is that they are family-managed, so there are no other options to be investigated other than the managers who tend to be the sole social individuals, occasionally along with the owners responsible for business management. However, regardless of whether we can determine the presence or absence of social desirability bias, the results indicated a gap in the AC model in terms of RACAP. Another limitation can be inferred to the specific geographical context represented by small cities and family-managed hotels, so the findings may not represent the same reality as hotels in other locations.

Future studies can investigate AC considering the geographical context and researching hotels located in major urban centers. We also suggest that news studies propose and test a scale for AC that consider the specificities of the Brazilian tourism sector, thus providing new findings related to the configuration of AC. Furthermore, new research can investigate suppliers and/or customers with the aim of understanding how hotels acquire external knowledge in the



dimension of PACAP and how knowledge absorption practices are similar or may vary depending on the hotel being analyzed.

The tourism industry is characterized by vulnerability, which is often due to shocks such as economic crises, natural disasters, wars, and more recently, biological risks such as COVID-19. Therefore, we suggest that new studies investigate whether innovation was a preponderant factor in the survival of companies in the tourism sector, particularly during and after the COVID-19 pandemic. Finally, there are cases of transgenerational family tourism businesses that have survived, expanded, and transcended to second or third-generation ownership. It is worth investigating the factors that contribute to some family businesses remaining competitive while others cease their activities.



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