Hotel strategies in times of COVID-19: a dynamic capabilities approach

Abstract

The aim of this research is to explore the positive effect of dynamic capabilities on firm performance in Spanish hotels to further expand the ongoing knowledge of management strategies in a dynamic environment. It also embraces novel issues by linking uncertain changes with the current literature on the COVID-19 crisis. This study also emphasizes the mediation effect of innovation capability as a key hotel strategy in today’s world. The final sample is composed of 212 hotels in Spain. The results reveal a positive and significant influence of dynamic capabilities on hotel performance, which is mediated by innovation capability (partial mediation effect). Both theoretical and practical implication of this research can help navigate the economic consequences of the COVID-19 pandemic.

Keywords: Dynamic capabilities, Innovation Capability, Performance, hospitality sector, environmental change.
Introduction

The analysis of hotel management strategies and their implications on performance has become an urgent issue in the light of the current global crisis derived from the COVID-19 pandemic. The uncertainty caused by this crisis has had a devastating effect on the world hospitality sector and has attracted the attention of numerous academic experts (Altuntas & Cok, 2021; Gursoy & Chi, 2020; Kaushal & Srivastava, 2021; Zenker & Kock, 2020). One of the most relevant topics is how companies can adapt and survive in the face of situations involving rapid and profound changes in the environment (Melián-Alzola et al., 2020). The importance of organisational resilience for tourism organisations and hotels facing crises and disasters is unquestionable (Jiang & Wen, 2020). Thus, authors such as Jiang et al. (2019) have recently argued that dynamic capabilities provide a powerful mechanism for tourism organisations when responding to fast environmental changes.

The crisis derived from coronavirus has sent the tourism industry, especially the hotel sector, into an unprecedented recession and has faced the hospitality sector with an enormous challenge. As an industry where the human mobility is crucial, the current coronavirus has drastically decreased travel and tourism and have severely declined hotel occupancy levels (Gössling et al., 2020; Jiang & Wen, 2020). In fact, the hospitality industry is one of the most damaged sectors by dynamic environment due to it is widely exposed to many changes (Hall, 2010; Senbeto & Hon, 2020). Thus, the dynamic capabilities approach is required and could be crucial to analyse the way in which an organization responds to and recovers from an external change due to these are needed to learn from and adapt to turbulent environments (Liu & Yang, 2021; Teece, 2007).

Innovation capability also plays a key role in crisis recovery, and it has become a highly topical issue as companies strive to deal with the health crisis (Heinonen & Strandvik, 2020), particularly in the hospitality sector (Breier et al., 2021; Shin & Kang, 2020). In addition, regarding Camisón & Monfort (2012) the dynamic capabilities view is seen as a relevant framework in this industry for studying innovation. Thus, the main objective of this paper is to analyse the deployment of dynamic capabilities and the way it impacts on the performance of hotels in turbulent situations such as the present one. Furthermore, we examine the influence of hotel innovation capability as a mediating variable that amplifies the influence of dynamic capabilities on hotel performance being an important contribution to the specific literature.
For this purpose, this paper is structured as follows: Firstly, we have reviewed the existing literature related to dynamic capabilities and its influence on firm performance, also considering the mediating effect of innovation and formulating the research hypotheses. Secondly, the methodological aspects are presented highlighting data collection, measures, and statistical techniques. Thirdly, the theoretical hypotheses are examined, and the results and analysis of PLS-SEM from 212 respondents are discussed. Finally, we conclude the study offering the most significant contributions together with the main limitations and future research lines.

1. Literature review

One of the principal matters in the field of strategic management is the way in which organizations achieve and maintain competitive advantages (Teece et al., 1997). If we add to this the current need to consider the dynamism of the environment, the concept of dynamic capabilities clearly comes to the fore. Dynamic capabilities could be understood as the firm’s capability to create, combine, and modify resources and abilities that firm possesses to respond to external changes (Teece et al., 1997).

1.1. Dynamic capabilities and firm performance

A key principle in the dynamic capabilities approach is that they are positively associated with the performance of firms and its subsequent achievement of sustainable competitive results (Teece et al., 1997). Initial research in this field surely took on board a positive influence of the dynamic capabilities’ development and organizations performance (Teece et al., 1997). Similarly, Zollo & Winter (2002) postulated a direct connection between dynamic capabilities and high performance or firm stability stating that facing turbulent environmental.

Throughout its development, many articles have sought to empirically explore the relationship between these capabilities and performance under the vision of dynamic capabilities (see, for example, Protogerou et al, 2012). In fact, we can find a wide variety of literature reviews and bibliographical analyses exploring the different theoretical and practical studies that proliferate on the previously relationship mentioned (e.g., Fainshmidt et al., 2016; Schilke et al., 2018; Vogel & Güttel, 2013; Wang & Ahmed, 2007).

Pezeshkan et al. (2016), in their literature review, find that about 60% of the published empirical evidence advocates a positive influence of dynamic capabilities on performance
and competitive advantage. Other studies, such as Lin & Wu (2014), have also stated that most scholars support the premise that dynamic capabilities lead to an increase in the competitive advantage of organizations. Similarly, other researchers such as Wang et al. (2015) have empirically corroborated this positive effect of dynamic capabilities on organisational performance. Thus, based on the numerous investigations that have supported the relationship between dynamic capabilities on performance, we put forward the first of our research hypotheses:

Hypothesis 1. Dynamic capabilities are positively related to hotel performance.

1.2. Dynamic capabilities and innovation capability

As well as considering the direct and positive influence that dynamic capabilities have on the performance of hotels, we must consider an indirect relationship. Traditionally, authors such as Barreto (2010) have considered the need to infer indirect effects. Recent authors such as Zhou et al. (2019) have attempted to resolve the discussion about the relationship between dynamic capabilities and performance proposing and examining empirically a mediation effect.

The study of organisational innovation is a hot topic in the field of management, attracting great interest for several decades based on the concerns and demands of managers and heads of companies. However, there is no single generic formula for innovation capability, but rather these innovations will depend on the ability of the organization to develop dynamic capabilities that impact on its innovative capability.

Verona & Rabasi (2003) have proved that dynamic capabilities could be an interesting tool to ensure consistent standards of innovation. Several studies such as Zheng et al. (2011) or Hsu & Sabherwal (2012) have also revealed the positive influence of dynamic capabilities on innovation. Camisón & Monfort (2012) highlight the capability of tourism organisations to develop innovative behaviour as a source of dynamic capability. Recently, authors such as Nieves et al. (2016) have advanced research in the hotel sector by studying the link between dynamic capacities and the capacity for innovation. Thus, we present the following model hypothesis based on the literature supporting the need for dynamic capabilities in the enhance of innovation capability:

Hypothesis 2a. Dynamic capabilities have a positive influence on innovation capability.

1.3. Innovation capability and firm performance
There is an important area of research that points out that innovation capabilities and business performance are related (Bowen et al., 2010). An early study by Geroski & Machin (1992) stated that innovative companies are more profitable and increase more quickly than non-innovative ones. Therefore, much research has delved into this relationship between innovation capabilities and their effect on organisational performance, highlighting the positive relationship from different perspectives (see Gunday et al., 2011; Jiménez-Jiménez & Sanz-Valle, 2011; Rajapathirana & Hui, 2018; Saunila et al., 2014).

Specifically, in the tourism sector the literature points out innovation as one of the key elements that influences firm performance (Ottenbacher, 2007; Salem, 2014). Recently authors such as Vladimirov & Williams (2018) have empirically tested the relationship between innovation and hotel performance highlighting this effect during a period of crisis (Campo et al., 2014). In view of these studies, the second part of our hypothesis 2 is posed below:

Hypothesis 2b. Innovation capability has a positive effect on hotel performance.

1.4. Mediation effect of innovation capability

Camisón (2000) argues that the most successful companies achieve their competitive advantages through the accumulation of resources (mainly intangibles) and capabilities that are difficult to reproduce or imitate by competitors. According to this author, companies with greater innovative behaviour can follow and respond to the needs of the environment and can achieve greater business results in this way.

A wide variety of studies have proposed the incorporation of the innovation as a mediating variable between dynamic capabilities and performance. Kostopoulos et al. (2011) have stated that innovation capability acts as a mediator between absorption capacity (dynamic capability) and performance. Furthermore, authors such as Zhou et al. (2019) have conceptually and empirically found that innovations mediate between dynamic capabilities and firm performance.

Based on the literature examined above, we propose our hypothesis 2 that dynamic capabilities impact on the innovation capability of hotels considered as service, process, organisational and marketing innovation (OECD, 2005), which positively influence performance:
Hypothesis 2. The innovation capability act as a mediating variable between dynamic capabilities and hotel performance.

Once all the hypotheses raised in this research have been exposed and justified, the Figure 1 presents the proposed theoretical model.

![Theoretical model proposed](image)

**Figure 1. Theoretical model proposed**

2. Methodology

2.1. Sample and data collection

Our research has taken place in the hotel industry in Spain, which is a hugely relevant worldwide tourist destination. According to the World Tourism Organization (2020), Spain was the second largest international tourist destination in 2019, with nearly 84 million travellers. Our research objective was 3-, 4- and 5-star Spanish hotels listed on Alimarket a database which gathers financial and commercial data on the most important Spanish hotels. A structured questionnaire based on the review of the literature was used to collect data with the aim of achieving more widespread coverage and making the results more representative. First, the contents of the questionnaire were validated using a pre-test, in which experts in strategic hotel management and some hotel managers participated. The survey was then distributed via the Qualtrics online survey tool in the first half of 2020. The fieldwork provided 212 usable surveys, representing a response rate of approximately 7.5%. The response rate is quite common in organizational studies (Baruch & Holtom, 2008) and in tourism research (Thomas & Wood, 2014).

2.2. Measures

Dynamic capabilities
How to measure and analyse dynamic capabilities has been an important debate in the academic literature (Tang & Liou, 2010). Given that in our study we have adopted Teece's (2007) definition, we have conceptualised dynamic capabilities as a firm's ability to detect, seize opportunities and reconfigure its resources to move away from a changing environment, we will take this term as multidimensional. Recently other authors in the field of tourism have also disaggregated dynamic capabilities such as sensing, seizing, and reconfiguring capabilities (Alonso & Kok, 2020).

Specifically, dynamic capabilities were operationalized as a second-order construct. The 12-item scale used to measure this variable was originally proposed by Wilden et al (2013). This proposal has been used in numerous subsequent investigations (Fainshmidt et al., 2019; Wilden et al., 2019), since it reliably captures the idea developed in Teece (2007), and it has been validated in other studies such as Fainshmidt & Frazier's (2017).

**Innovation Capability**

To operationalise the innovation capability variable, we observe that the Oslo Manual (OECD, 2005) and we consider our variable as a multidimensional construct of second order formed by the four types of innovation defined in the manual: innovation of services, processes, marketing, and organisation. In fact, we used a 15-item scale previously validated by Nieves et al. (2014) which would have been adapted from the statements of the Oslo Manual (OECD, 2005).

**Firm performance**

Perceived measures have been used to be operative firm performance in terms of two differentiated categories. Other researchers such as Ali et al. (2019) also proposed to ask hotel managers to evaluate their performance in relation with their competitors (Božič & Knežević Cvelbar, 2016; Fraj et al., 2015). A total of 8 items were used to capture not only the traditional performance indicators (market share growth, brand recognition, market image and sales growth), but also specific hotel performance variables (income per room, occupancy rate, level of customer satisfaction, employee satisfaction). This trend has recently been used in different research on the hotel research (Úbeda-García et al., 2016; Wilke et al., 2019).

**Control variable: hotel chain**

According to experts in the field of innovation in the hotel sector, such as Martínez-Ros, & Orfila-Sintes, (2009), membership of a branded hotel chain may affect the innovative
behaviour of hotels. Therefore, the variable hotel chain has been taken into account for each hotel. We use a dummy variable that takes the value 0 when the hotel does not belong to a chain, and the value 1 if the hotel does belong to a chain.

### 2.3. Statistical techniques

To linking data and theory, the second-generation multivariate analysis technique used was the Partial Least Square (PLS) that is the Structural Equation Model (SEM) based on the variance. This methodology makes it possible to represent, estimate and test a theoretical model of linear relationships between variables that may be unobserved, i.e., latent variables. PLS-SEM has undergone massive growth over the last decade (Hair et al., 2019), and it is now commonly applied in several social science fields, in particular strategic management (Hair et al., 2012) and hospitality management (Ali et al., 2018), areas of research under which our work is framed.

In the choice of this method, we considered many aspects such as: Firstly, the study is predictive which fits well with the use of PLS-SEM (Henseler, 2018). Secondly, the sample (n =212) is not very large but in PLS-SEM the minimum sample size is not demanding (Henseler et al., 2015). Thirdly, since models applied in the social sciences can present different problems such as non-standard data or highly complex models, this method allows for easy handling. Moreover, as our study includes both direct and indirect relationships with latent variables, it is recommended to use PLS since it can effectively manage these aspects (Ali et al., 2018; Cepeda-Carrion et al., 2019). Fourthly, one of the strengths of our analysis is the inclusion of latent variables of second order and PLS allow us to estimate effectively multidimensional (Henseler et al., 2016). Finally, PLS-SEM is a data analysis method suitable for the hotel sector (Ali et al., 2018; Usakli & Kucukergin, 2018).

The software used to carry out the analysis was SmartPLS v3.3 (Ringle et al., 2015).

### 3. Results

Given that a hierarchical component model was used, we apply the two-stage approach with “latent variable scores” or aggregated scores which PLS delivers effectively (Henseler et al., 2016; Sarstedt et al., 2019). Firstly, the aggregate scores of first-order dimensions were estimated. Secondly, problems of collinearity were avoided using the values of the latent variables the scores to model the second-order construct in the second stage.
Bellow, we show the results obtained in the assessment of the measurement model and the assessment of the structural model in accordance with the recommendations of Hair et al. (2016). The final model presents a Standardized Root Mean Square Residual (SRMSR) of $0.036 < 0.08$ (Hu & Bentler, 1998), which means that it has a good overall fit. Moreover, we have tested that the values of SRMR, $d_{ULS}$ and $d_{G}$ are between the confidence range after carrying out bootstrapping (all values are below the values of HI95 and HI99).

### 3.1. Assessment of the measurement model (Measurement model)

Following the criteria explained in Hair et al. (2016), to analyse the quality of the measurement model, we have examined reliability of the individual indicators, evaluated internal consistency assessing the composite reliability, and tested convergent validity through Average Variance Extracted (AVE). Discriminant validity has also been analysed based on cross-loads, the Fornell and Larcker criteria and the heterotrait-monotrait ratio (HTMT) of correlations.

Firstly, we have checked that the external loads ($\lambda$) are considerably above the minimum value $\geq 0.707$ proposed by Carmines & Zeller (1979), which indicates that the different indicators present sufficient levels of reliability at an individual level. To assess the reliability of constructs or internal consistency, Cronbach's alpha, composite reliability ($\rho_{C}$), and consistent reliability measure (Dijkstra-Henseler's, $\rho_A$) proposed in Dijkstra & Henseler (2015) are shown in Table 1 and all constructs exceed the value 0.8. In the assessment of convergent validity at the construct level (Table 1), we should note that the value of the AVE is greater than 0.50 (Fornell & Larcker, 1981).

**Table 1. Construct reliability and validity**

<table>
<thead>
<tr>
<th>Dynamic Capabilities</th>
<th>Cronbach's Alpha</th>
<th>rho_A</th>
<th>Composite reliability</th>
<th>Average Variance Extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance</td>
<td>0.887</td>
<td>0.901</td>
<td>0.887</td>
<td>0.726</td>
</tr>
<tr>
<td>Innovation Capability</td>
<td>0.933</td>
<td>0.934</td>
<td>0.934</td>
<td>0.779</td>
</tr>
</tbody>
</table>

Finally, we must examine the discriminant validity, i.e., analyse whether each construct is different from the rest. We have used two traditional methods to evaluate discriminant validity: cross-load analysis, and the criterion of Fornell & Larcker (1981). Furthermore, Henseler et al. (2015) corroborated from simulation studies that the assessment of the heterotrait-monotrait ratio (HTMT) of correlations is more effective. The values for
dynamic capabilities, innovation capability and performance are clearly below 0.85 (strict
threshold proposed by Kline, 2011), which indicates a good level of discriminant validity
in our measurement model (Table 2).

Table 2. Discriminant validity (HTMT)

<table>
<thead>
<tr>
<th></th>
<th>Innovation Capability</th>
<th>Dynamic Capabilities</th>
<th>Performance</th>
<th>Hotel chain</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Innovation Capability</strong></td>
<td>0.293</td>
<td>0.690</td>
<td>0.453</td>
<td>0.261</td>
</tr>
<tr>
<td><strong>Dynamic Capabilities</strong></td>
<td>0.508</td>
<td>0.293</td>
<td>0.236</td>
<td>0.261</td>
</tr>
<tr>
<td><strong>Performance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hotel chain</strong></td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>

3.2. Assessment of the structural model (Structural model)

The assessment of the structural model reveals the potential of our model to predict the
objective constructs, as well as the relationships between them, thus allowing us to test
the hypotheses raised in the theoretical framework. According to Hair et al. (2016) in
order to assess the structural model in PLS-SEM we have to check the significance of the
path coefficients, the level of R-squares, the size of the $f^2$ effect and the predictive
relevance $Q^2$.

In Figure 2, we can observe the $R$-squared and $\beta$ estimations with the degree of statistical
significance based on a bootstrap test with 5000 subsamples.

**Figure 2. Theoretical model with R-squared, path coefficients (β) and significance.**

Both indirect and direct effects of dynamic capabilities on hotel performance through
innovation capability have been tested, finding that both are positive and statistically

***p≤0.001; **p≤0.01.
significant. Therefore, we can assert that in our model there is partial mediation (hypothesis 2 is supported). This means that innovation capability partially mediates the relationship between dynamic capabilities and hotel performance, given that both effects, direct (0.143) and indirect (0.286) are significant, resulting in a strong total effect of dynamic capabilities on hotel performance of 0.429 (p=0.000).

Finally, model quality is evaluated through the Geisser test (Q2) as well, which should have estimated values above 0 (Q2 > 0, see Table 3). Accordingly, medium predictive relevance of the model was observed because of Q2 values are higher than 0, 0.25 (Hair et al., 2019).

Table 4. Construct Crossvalidated Redundancy

<table>
<thead>
<tr>
<th></th>
<th>SSO</th>
<th>SSE</th>
<th>Q² (=1-SSE/SSO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation Capability</td>
<td>848.000</td>
<td>672.166</td>
<td>0.207</td>
</tr>
<tr>
<td>Dynamic Capabilities</td>
<td>636.000</td>
<td>636.000</td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td>1484.000</td>
<td>932.760</td>
<td>0.371</td>
</tr>
<tr>
<td>Hotel chain</td>
<td>212.000</td>
<td>212.000</td>
<td></td>
</tr>
</tbody>
</table>

Regarding control variables, the results show that membership of a hotel chain has a relevant impact on innovation capability with a high level of significance. Therefore, it could be interesting to analyze the differences in strategic management between chain and non-chain hotels.

4. Conclusion and implications

COVID-19 pandemic has significantly and permanently affected the hospitality industry, especially hotel performance. Already ahead of the pandemic, hotels managers were facing important challenges related to the increasing stress to become more digital and sustainable (Hao et al., 2020). Several authors such as Hao et al. (2020) have pointed out the necessity of hotels to re-evaluate their current hotel strategies and establish a new scheme to improve competitiveness. It is precisely in this sense that the analysis of hotel management strategies proposed in this research takes on special relevance since we have empirically shown the high impact of dynamic capabilities on hotel performance. In addition, this positive effect is partial mediated by one of the most important resources of hotel management today, innovation capability.

To conclude, we can provide both theoretical and practical implications derived from our research. Among the theoretical contributions, the results of the present research
contribute to the strategic hotel management literature, providing practical evidence within a special and urgent situation. In fact, we have empirically proved the indirect and high statistically effect of the development of dynamic capabilities on firm performance, which is consistent with recent literature reviews such as Baía & Ferreira (2019). Indeed, innovation capabilities boost this positive relationship under an uncertain environment.

As a practical contribution, the conclusion of this study should play a key role in the decisions of hotel managers not only in the case of current threats but also in challenging situations in the future. In this sense, emphasis has been placed on the importance of developing dynamic capabilities that lead to innovations for hotels that aim to strengthen their performance. Therefore, through the combined forces and positive effects of dynamic capabilities and innovation capabilities, hotels can strengthen their resilience and survive in challenging environments such as the current one.

Regarding the limitation and future lines of research, we can point out the following. Firstly, the worldwide nature of the crisis generated by the pandemic makes it necessary to extend such analyses to another geographical area. Indeed, it would be very interesting to be able to compare the effects of the dynamic and innovation capabilities of hotels at an international level, or even to nuance the differences in less developed countries. In addition, it would be interesting to continue researching the function that the hotel chain can play in the development of innovation capabilities. In fact, as a future research, we propose a multi-group analysis where the differences in the proposed model can be seen depending on whether the hotels studied belong to a hotel chain or not. Finally, it would be interesting to analyse the effect of COVID-19 on hotel performance from a SERVQUAL approach to assess customer perception of service quality (Parasuraman et al. 1988), concretely, into the hotel industry (Wilkins et al. 2007).

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References


