



The differential and synergistic effects of market orientation and entrepreneurial orientation on hotel ambidexterity

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ABSTRACT

Innovation ambidexterity has surprisingly received limited attention in hospitality research. Using data from 101 Jordanian hotels analyzed with PLS structural equation modeling, this paper reports a double differential effect of two strategic orientations, market orientation (MO) and entrepreneurial orientation (EO), on hotel ambidexterity. On the one hand, EO (MO) has a stronger impact on exploratory (exploitative) than on exploitative (exploratory) innovation. On the other hand, EO has a stronger impact than MO on both innovation forms. Furthermore, the synergy between EO and MO has a positive impact on exploitative and exploratory innovation, both of which in turn enhance hotel performance.

1. Introduction

In the last two decades, management research has emphasized that long-term performance depends on firms' ability to leverage ambidextrously their current resources and market opportunities through incremental, exploitative innovation, while developing new ones through discontinuous, exploratory innovation (Gibson and Birkinshaw, 2004; Kortmann, 2015; Raisch and Birkinshaw, 2008; Zhang et al., 2016). Ambidextrous innovation is most relevant in industries undergoing major environmental changes (O'Reilly and Tushman, 2013; Zhang et al., 2016). Such is the case of hotels, facing in recent years new forms of rivalry (e.g. sharing economy platforms like AirBnB) as well as important shifts in consumer behavior due to new intermediaries (e.g. booking websites) and a wider access to uncontrolled information (e.g. online reviews). This has rendered crucial for hotels to refine, modify, and improve their current services through continuous exploitative innovation, while developing and offering novel services (Tang, 2014, 2016).

With the exception of few studies (e.g. Martinez-Ros and Orfila-Sintes, 2009; Nieves and Diaz-Meneses, 2018; Tang, 2014), most research on hotel innovation addresses the latter as a broad, all-encompassing construct instead of distinguishing between exploitative and exploratory innovation (e.g. Agarwal et al., 2003; Lin and Chen, 2018; Liu and Lee, 2019; Tajeddini, 2010; Zhou et al., 2009). However, not only hotels need to pursue both forms of innovation to succeed in their turbulent environment, but also each form develops via

a different set of antecedents (Kraft and Bausch, 2016).

Firms' strategic orientations (SO) play a key role in driving innovation in general (Adams et al., 2019; Spanjol et al., 2012) as well as more particularly their ambidextrous pursuit of both exploitative and exploratory innovation (Kortmann, 2015; Kraft and Bausch, 2016; Zhang et al., 2016). SO are "the strategic directions implemented by a firm to create the proper behaviors for the continuous superior performance of the business" (Gatignon and Xuereb, 1997, p.78). They reflect cultural mechanisms that guide strategy formulation and implementation within organizations (Kortmann, 2015), including their innovation choices and activities (Zhang et al., 2016). While ample empirical evidence exists regarding the impact of SO on exploitative and exploratory innovation, this research stream is highly fragmented, as studies have focused on different SO including market, entrepreneurial, learning, customer, or technology orientation, often yielding inconsistent results (Kraft and Bausch, 2016).

The present research focuses on the role of two key SO, market orientation (MO) and entrepreneurial orientation (EO), in developing ambidextrous hotels. Research on the SO-ambidexterity relationship indicates that, when considered simultaneously, MO appears as the driver of exploitative innovation while EO appears as that of exploratory innovation (Kraft and Bausch, 2016). Such finding implies that companies need both MO and EO to be able to pursue both forms of innovation. This is also consistent with the view that the two forms of innovation evolve from differing mandates, and their development requires a number of different structures, competencies, and processes

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within the same organization (O’Reilly and Tushman, 2013).

However, prior research on hotels, in addition to not distinguishing between innovation forms, has predominately examined the individual effect on innovation of either MO (Tang, 2014; Zhou et al., 2009; Agarwal et al., 2003) or EO (Liu and Lee, 2019; Lin and Chen, 2018). Little is thus known on how the two SO affect hotel innovation when considered simultaneously. Furthermore, previous studies report different findings when testing the role of each SO separately vs. simultaneously (Baker and Sinkula, 2009). Hence, the main objective of this research is to extend the limited knowledge on whether hotels, to pursue successfully both forms of innovation, need to adopt both MO and EO. This objective is all the more important that developing both MO and EO could prove complex and resource-consuming for organizations, given the differences in the philosophy behind each orientation, MO being a reactive, market-driven approach, whereas EO represents a proactive, market-driving approach (Schindehutte et al., 2008).

We propose addressing this objective through two complementary questions. First, we investigate whether each type of innovation is driven by a specific SO or if either orientation is sufficient to drive both innovation forms. To do so, we test the differential effects of MO/EO on exploitative/exploratory innovation. The existence of such differential effect, similar to the one reported in Kraft and Bausch’s (2016) meta-analysis, would corroborate the idea that innovation ambidexterity in hotels requires both MO and EO. Conversely, the lack of differential effect would imply that either SO could drive both forms of innovation as well as the other. Under such result, hotels would face less pressure to focus on both MO and EO simultaneously to sustain their innovation ambidexterity.

Second, we investigate the added benefit of combining MO and EO beyond their individual impacts on exploitative and exploratory innovation. Prior literature has shown that SO could have synergistic effects in addition to their direct ones (Baker and Sinkula, 2009; Hakala, 2011), with SO supporting each other and the strengths of one SO helping to overcome the limitations of another, thus leading to better outcomes. Similarly, ambidexterity literature calls for further investigation of the complementarities between the different antecedents (Raisch and Birkinshaw, 2008), including between different SO (Zhang et al., 2016). The existence of significant synergistic effects on the innovation forms would corroborate the benefit of pursuing MO and EO simultaneously.

Finally, while ample empirical evidence supports that innovation ambidexterity is positively linked to performance (O’Reilly and Tushman, 2013), prior research has also yielded evidence of negative

or insignificant impact (Zhang et al., 2016). However, apart from Tang (2014), studies specific to the hotel industry that distinguish between the two forms of innovation have focused on their antecedents rather than on their relationship to performance (e.g. Martinez-Ros and Orfila-Sintes, 2009; Nieves and Diaz-Meneses, 2018; Tang, 2016), yielding limited knowledge on the ambidexterity-performance relationship for hotels. Furthermore, prior ambidexterity research reports differences in the antecedents and outcomes of both forms of innovation across industries (O’Reilly and Tushman, 2013; Spanjol et al., 2012), limiting the possibility of transposing results between industries. Hence, a complementary objective of this research is to investigate the performance impact for hotels of pursuing both exploitative and exploratory innovation.

This paper addresses the aforementioned objectives by testing the research model in Fig. 1, including the differential and synergistic effects of MO/EO on exploitative/exploratory innovation, and the impact of the latter on hotel performance. The next paragraphs introduce the conceptual background and research hypotheses, before presenting the method and findings of an empirical study in the Jordanian hotel industry. We conclude with the main contributions, limitations, and future research directions.

2. Conceptual background

2.1. Hotels’ exploitative and exploratory innovations

In order to sustain long-term performance despite future changes in their environments, firms need to carry out simultaneously exploitative and exploratory innovations (O’Reilly and Tushman, 2013). Such ambidexterity allows firms “to be aligned and efficient in their management of today’s business demands while simultaneously adaptive to changes in the environment” (Raisch and Birkinshaw, 2008, p.375).

Exploitative innovations are incremental and take place through adaptive learning. They do not break with the hotels’ current services and practices because they only represent improvements in them (Tang, 2014). They aim to enhance hotels’ ability to leverage their existing services and processes and increase their efficiency, to better serve their existing customers’ expressed needs (Kraft and Bausch, 2016). Therefore, exploitative innovation entails a low degree of novelty and limited risk, has more predictable results, represents an immediate source of income, and requires a low level of investments (Nieves and Diaz-Meneses, 2018; Tang, 2014). Conversely, exploratory innovations

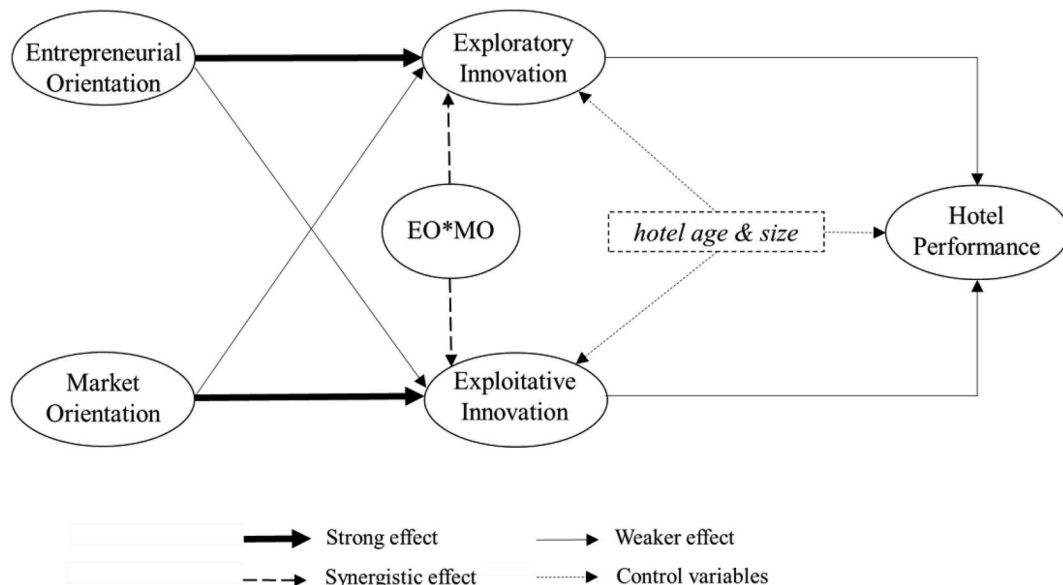


Fig. 1. The research model.

are radical and develop through generative learning. They reflect a significant transformation of hotels' existing offering (Nieves and Diaz-Meneses, 2018) through the development of new services and processes to serve emerging customer needs and drive new markets (Kraft and Bausch, 2016). This form of innovation is hence riskier, targets future and unexpressed needs of current customer and/or new customers, and requires high levels of financial and technological resources (Tang, 2016).

In order to outperform competitors, hotels must adopt both forms of innovation (Tang, 2014, 2016), as they are complementary to each other rather than mutually exclusive. While service improvement can generate significant cash flows, which provide financial assets to the development of new services, service innovation provides the technological assets and capabilities for renewing the resources used in service improvement (Garcia et al., 2003). Additionally, consecutive service improvements could eventually lead to the development of radically new services, and those new services often trigger service improvements with the potential to boost the generation of new services (Martinez-Ros and Orfila-Sintes, 2009).

Conversely, hotels that fail to develop their ambidexterity could face performance problems due to innovation imbalance. A strong emphasis on exploitation, while enhancing current service quality (Tang, 2014), could result in organizational rigidity and competency traps (Tang, 2016), leading to a higher risk of obsolescence when the environment changes (Úbeda-García et al., 2018). A strong emphasis on exploration creates the risk of underleveraging the hotel's current assets (Úbeda-García et al., 2018) as well as not enhancing the quality of the new services derived from exploration efforts after their launch (Tang, 2014). As noted by Ivanaj et al. (2019), service organizations are facing intense and fierce competition, which makes service quality significantly important for their survival.

2.2. MO, EO, and hotel innovation

MO refers to firms' direction towards generating, disseminating, and responding to marketing intelligence (Kohli and Jaworski, 1990). Considering customer satisfaction as the guiding principle of the firm (Baker and Sinkula, 2009), MO focuses primarily on understanding current customer needs and monitoring competitors' activities (Hills and Sarin, 2003), with the main quest of "beating competitors", reflecting a responsive approach to the current market (Kocak et al., 2017, p. 254).

MO encourages hotels to build and maintain bonds with their customers, put them at the center of the hotel's operations, and seek their feedback regularly (Qu, 2014). It further encourages hotels to monitor the external environment, assess the competitive landscape in their industry, and benchmark their services against major rivals (Newman et al., 2016). Such activities increase hotels' awareness of potential inadequacies of their current o, leading to constant refining and improvement. Furthermore, gathering such intelligence could help hotels in sensing new market opportunities through carefully identifying and analyzing latent, unsatisfied customer needs (Atuahene-Gima, 2005), and observing problems that customers are not typically able to articulate (Chang et al., 2014). This would allow hotels to not only improve their current services, but also introduce new ones (Tang, 2014).

EO refers to firms' inclination towards pursuing new market opportunities outside their existing field of operation (Lumpkin and Dess, 1996). The decision-making of firms with EO is characterized by proactiveness and anticipation of future demand, innovativeness, and risk-taking (Zhang et al., 2016) in order to "escape the myopia" of serving current markets (Zhou et al., 2005, p. 55). The core of EO is to promote and support committing to novel ideas, address latent customer needs, embrace experimentation, and depart from current processes and practices towards the development of new ones (Kollman and Stockmann, 2014). Such qualities support the engagement of hotels in

exploratory innovations through the development of new services and processes.

However, entrepreneurial activities are not "a one-time act" (Tajeddini, 2010, p.222): when developing new services even before the competition, hotels need to secure and exploit their first-mover advantage by enhancing efficiency and cost in order to increase customer value and loyalty. Additionally, the proactiveness and innovativeness inherent to EO help hotels to not only explore new opportunities in new areas of operation but also enhance opportunities within their current services and markets (Kollmann and Stöckmann, 2014; Spanjol et al., 2012).

Prior empirical studies offer fragmented and inconsistent findings regarding the relationship between the two SO and of innovation (Kraft and Bausch, 2016). Two meta-analyses confirmed the positive effect of MO on incremental innovation but reported inconsistent effects on radical innovation (Chang et al., 2014; Kraft and Bausch, 2016). MO's effect on radical innovation ranges from positive (e.g. Baker and Sinkula, 2007), to insignificant (e.g. Joshi, 2016; Keskin, 2006), and negative (e.g. Salavou, 2005; Gatignon and Xuereb, 1997). Similarly, mixed results characterize the EO-incremental innovation relationship, ranging from strongly (e.g. Kocak et al., 2017) to weakly positive (e.g. Kollman and Stockmann, 2014) and insignificant (e.g. Kraft and Bausch, 2016).

3. Hypotheses development

3.1. The differential effects of MO and EO on exploitative and exploratory innovation

While both MO and EO could enhance both forms of innovation, we adopt the view that the magnitude with which each SO drives either form of innovation is not equivalent. For instance, prior research suggests that, while EO could indeed generate incremental innovations, it steers most organizational resources towards more radical ones (Brazeal and Herbert, 1999; Kollmann and Stöckmann, 2014).

MO reflects primarily a responsive and market-driven approach, which reacts to changes in market trends as they occur without trying to force change back into the market (Hills and Sarin, 2003). It favors incremental adaptations to the changes in the hotel's business environment and operates through adaptive learning capabilities concerning market intelligence generation (Tuominen et al., 2004). Additionally, although MO may entail the capability to uncover latent customer needs, it does not actively attempt to alter behaviors of other major stakeholders (Jaworski et al., 2000). This is because MO focuses on hearing customer voice and adapting offerings, rather than reshaping customer needs and markets (Hills and Sarin, 2003). It assumes that customer needs are fairly observable or articulated (Schindehutte et al., 2008), tends to accept behaviors of key industry players and current market structure as a constraint, and works on enhancing the firm's offerings within these constraints (Jaworski et al., 2000).

As MO focuses primarily on addressing customers' expressed needs (Atuahene-Gima, 2005), this would make hotels engage in a proximate search (i.e. within their current domain and markets) due to tight coupling with existing customers (Joshi, 2016). As a result, hotels would exploit innovation opportunities that respond primarily to articulated customer needs, given MO's emphasis on adaptive learning, which allows them to take advantage of their existing learning and experience. Thus, MO, with its core focus on current customers and markets, could suppress creative and novel responses to emerging and unexpressed customer needs, leading hotels to favor exploitative over exploratory innovation (Atuahene-Gima and Ko, 2001).

Conversely, EO reflects a market-driving approach, which emphasizes leading customers more than modifying services in response to ongoing customer requests (Jaworski et al., 2000; Schindehutte et al., 2008). Such approach strives to raise services to an exceptional and extraordinary level, generates discontinuous leaps in customer value,

introduces customers to new attributes, and fundamentally alters their perceptions concerning current attributes and future services (Hills and Sarin, 2003). Additionally, a market-driving approach departs from the embedded theory-in-use towards something radically new via generative learning (Tuominen et al., 2004). Through generative learning, EO primarily addresses latent and emerging customer needs, thus favoring hotels' introduction of new services and processes more than modifying or improving existing ones (Chen and Hsu, 2013). EO also reflects a high propensity to lead than to follow competitors and to have a forward-looking perspective in terms of predicting and acting on future market trends and customer needs, thus being first-movers (Lumpkin and Dess, 1996).

Hence, we propose the following double differential effect of MO/EO on exploitative/exploratory innovation:

H1a. MO will have a stronger impact on hotels' exploitative than exploratory innovation

H1b. EO will have a stronger impact on hotels' exploratory than exploitative innovation

H2a. MO will have a stronger impact than EO on hotels' exploitative innovation

H2b. EO will have a stronger impact than MO on hotels' exploratory innovation

3.2. The synergistic effect of MO and EO on exploitative and exploratory innovation

The detailed insights about current customer needs generated by MO could "unintentionally create boundaries for creativity and idea generation. Even when employees spend 20% of their working time developing their own new ideas, they still have customer information in mind; thus, connecting their ideas to customers" (Gurtner and Reinhardt, 2016, p.39–40). In turn, EO focuses essentially on addressing latent and unexpressed customer needs, which may lead to neglecting current customer needs. However, when hotels pursue both EO and MO, each orientation can alleviate the problems associated with the other. As Atuahene-Gima and Ko (2001) explain, MO reflects an adaptive capability where hotels react or respond to market conditions, while EO represents an environmental management capability where hotels pursue proactive and aggressive activities to change competitive and market conditions in their favor. Therefore, a proper configuration of both orientations would enhance hotels' knowledge concerning their current and future customer needs and other environmental conditions, thus producing complementary market-driven and market-driving strategy.

Furthermore, EO entails engaging in risky innovation projects, given their inherent customer, technological, competitor, and resource uncertainties. Market intelligence generation within MO could reduce such risks (Matsuno et al., 2002). By reducing the uncertainties associated with innovation projects, hotels can make better-informed decisions concerning which new services are suitable for the market and how to develop them. Similarly, EO, with its focus on innovativeness, could improve the application of knowledge generated via MO, thus supporting the hotel in pursuing existing market opportunities through making better and bolder improvements of currently offered services (Ahmadi and O'Cass, 2016). This view is consistent with that of Webb et al. (2011) who point out that increasing entrepreneurial activities should improve the value of market-oriented activities and vice versa. Similarly, Kwak et al. (2013, p. 142) note that, "EO and MO may not be unique resources, individually, but that the confluence of these constructs can create a unique strategic resource for the firm".

Hence, we propose the following complementarity effects of MO/EO on exploitative/exploratory innovation:

H3a. the interaction between EO and MO has a positive impact on hotels' exploitative innovation

H3b. the interaction between EO and MO has a positive impact on hotels' exploratory innovation

3.3. The effect of exploitative and exploratory innovation on hotel performance

Exploitative innovation can enhance hotel performance by stimulating hotels to engage in service quality improvement, leading to the enhancement of internal service procedures and increasing the effectiveness and efficiency of service delivery (Tang, 2014). Such improvements could relate to a thorough review of the servicescape, standardizing the process of service delivery thus reducing service failures, enhancing the stability of service quality, and tweaking some service attributes or the mode of service delivery in order to provide more convenient services (Tang, 2014). This in turn would enhance how hotels handle customer complaints, improve service responsiveness, reduce the cost of service recovery, and decrease the number of dissatisfied customers due to service failures, which all contribute to enhancing customer perceived value (Wei and Ho, 2019), and improving hotel performance (Tang, 2014).

Successful new services developed through exploratory innovation have the potential to offer greater customer value, higher service quality, and a unique and memorable travel experience (Tang et al., 2015). Thus, they allow hotels to differentiate themselves from rivals and further their reputation (Ottenbacher and Gnoth, 2005). The development of new services also enables hotels to respond to the dynamic environmental changes and the strong heterogeneous demand looking for services tailored to its specific needs, which further contributes to hotel growth and profitability (Nicolau and Santa-María, 2013). Additionally, replacing existing services by providing novel ones would make a hotel exclusive in offering such services, thus contributing significantly to consumer-perceived service value (Wang and Juan, 2016).

Hence, we propose the following hypotheses:

H4a. exploitative innovation has a positive impact on hotel performance

H4b. exploratory innovation has a positive impact on hotel performance

4. Methodology

4.1. Data collection

The Jordanian hotel industry is the empirical context of the current study. The Jordanian Ministry of Tourism and Antiquities provided the sampling frame of the hotels operating in Jordan, including 255 star-rated hotels and 237 unrated hotels. Star-rated hotels further group into 45 5-star hotels, 53 4-star hotels, 106 3-star hotels, 31 2-star hotels, and 20 1-star hotels. Similar to previous studies on SO and innovation (e.g. Domínguez-Falcón et al., 2017; Nieves and Diaz-Meneses, 2016), we excluded unrated, 1-star, and 2-star hotels, because they tend to have low levels of SO and engage less in innovative activities. This reduced the sampling frame to 204 hotels.

Hotels' marketing managers served as the informants because they are key participants in decision-making about SO, new service development and improvements, in addition to being very knowledgeable about most aspects of their hotels' activities. Five research assistants, trained about the nature of the research, its objectives, and potential contribution, contacted the 204 hotels during spring 2019 via telephone or personal visits to identify their marketing managers. To enhance the response rate, the research assistants clearly communicated to the identified managers the expected contribution of the research to the enhancement of the hotel's operations and promised to share the research findings with the respondents (Tajeddini, 2010).

101 hotels participated in the study (49.5% response rate). Respondents filled out the questionnaire through emails, which we

Table 1
Sample profile.

Hotels Profiles	N	(%)	Managers Profiles	N	(%)
Hotel rating			Gender		
3 star	47	46.5	Male	69	68.0
4 star	34	33.5	Female	32	32.0
5 star	20	20.0			
Average No. of rooms	91		Age		
			>25 years	4	4.0
			26–35 years	21	21.0
			36–45 years	35	35.0
			46–55 years	28	28.0
			>55 years	13	12.8
Average No. of employees	82	–	Education Level		
			High school graduate/ diploma	11	11.0
			Bachelor's degree	58	57.0
			Master's degree	32	32.0
Average years in operations	15	–	Length of working with hotel		
			>1 year	15	15.0
			1–5 years	36	36.0
			6–10 years	32	32.0
			>10 years	18	18.0

Table 2
Reliability and validity.

Variable name	Items	Item loadings	Composite reliability	AVE
MO ^a	Intelligence Generation	0.81	0.84	0.63
	Our hotel is quick to detect changes in our customers' product preference	0.72		
	Our hotel is quick to detect fundamental shifts in our industry (e.g. competition, technology, regulation).	0.77	0.88	0.71
	Our hotel periodically reviews the likely effect of changes in our business environment (e.g. regulation) on customers	0.78		
	Our hotel measures customer satisfaction systematically and frequently	0.71		
	Intelligence Dissemination	0.80		
	We have sufficient number of interdepartmental meetings to discuss market trends and developments.	0.82	0.85	0.66
	When something important happens to a major customer or market, the whole hotel knows about it in a short period	0.88		
	Data on customer satisfaction are disseminated at all level in this hotel on a regular basis	0.82		
	Responsiveness to Intelligence	0.77	0.84	0.55
Our hotel periodically reviews our product development efforts to ensure that they are in line with what customers want	0.78			
If a major competitor were to launch an intensive campaign targeted at our customers, we would implement a response immediately.	0.84	0.86	0.63	
The activities of the different departments in this hotel are well co-coordinated	0.81			
We believe that wide-ranging acts are necessary to achieve our objectives	0.75			
We initiate actions to which other hotels respond	0.80			
Exploitative Innovation ^a	We are fast to introduce new services/products to the marketplace	0.73	0.87	0.69
	We have a strong proclivity for high-risk projects	0.71		
	We are bold in our efforts to maximize the probability of exploiting opportunities	0.70		
	In recent years, our hotel has introduced many modifications to the existing services	0.76		
Exploratory Innovation ^a	In recent years, our hotel has frequently revised and improved existing services	0.79	0.90	0.65
	Our hotel has specific ideas about how to improve the service we give to customers	0.80		
	Our hotel frequently makes suggestions about how to improve customer service in the hotel	0.81		
	Our hotel constantly: seeks new ways to better service our customers	0.81		
Hotel Performance ^b	implements new service ideas	0.84	0.89	0.81
	creates innovative service procedures	0.82		
	seeks to come up with new service offerings	0.84	0.84	0.64
	Financial performance	0.84		
	Return on investment	0.85	0.90	0.65
	Profitability	0.79		
	Gross operating profit	0.76		
	Economic performance	0.95		
	Sales growth	0.77	0.81	0.65
	Market share	0.82		
Room occupancy rate	0.81			
Percentage of earnings from on-line reservations	0.81			
Percentage of earnings from overseas customers	0.82			

^a Likert scale (1 = strongly agree, 5 = strongly agree).

^b Likert-type scale (1 = much worse and 5 = much better).

obtained upon their agreement to participate. The sample size (N = 101) is in line with recent studies: 79 hotels (Vega-Vázquez et al., 2016), 105 hotels (Hinson et al., 2017), and 112 hotels (Nieves and Diaz-Meneses, 2016). Table 1 reports the main characteristics of the sample.

4.2. Measures

Measures of MO and EO were adapted from Qu (2014) and Hult et al. (2003, 2004), respectively. Four items measured each of exploitative and exploratory innovation (Tang, 2014; Nasution and Mavondo, 2008). In line with previous studies (e.g. Campo et al., 2014), we conceptualized hotel performance as a second-order construct: participants rated the financial and economic performance of their hotels over the last three years using a set of items in comparison to their key competitors.

Two academics in the field of hospitality and marketing reviewed the 32 items (Table 2) in the English version of the questionnaire, raising minor comments concerning the wording of some items. The revised questionnaire was translated to Arabic by a professional academic proofreader, then back-translated to English by another professional academic proofreader to ensure items' accuracy (Liu and Lee, 2019). The translation-back-translation procedure was repeated until reaching adequate correspondence between the Arabic and English versions (Nasution and Mavondo, 2008). Following previous research on SO and

innovation (e.g. Kollmann and Stöckmann, 2014), we controlled for both hotel size, measured by the number of employees, and hotel age, measured by the number of years in the Jordanian market.

4.3. Common method bias

We employed several procedures to reduce common method bias, which could occur in data collected from a single informant, potentially affecting the results. First, we reduced item ambiguity by avoiding double-barreled questions and complex syntax (Alnawas and Hemsley-Brown, 2019). Second, measurements scale were interspersed and the structural sequence of the questionnaire sections changed across respondents. Third, multicollinearity was assessed for the key constructs and the largest Variance Inflation Factor was 2.45, below the threshold of 5 (Hair et al., 2013). Finally, we used Harman’s single factor test by loading the 32 items on a single component without rotation. The first factor explained 24% of the variance, far below the 50% cut-off-point.

4.4. Data analysis

Partial Least Square Structural Equation Modeling (PLS-SEM) was deemed more appropriate to test the proposed model than Covariance-based SEM (e.g. LISREL, AMOS) given the limited sample size (Hair et al., 2013) and consistent with recent studies in hotel management literature (e.g. Alnawas and Hemsley-Brown, 2016). Data analysis involved two steps, following the recommendations of Hair et al. (2013), using SmartPLS 3.0.

The first step analyzed the measurement model. MO and hotel performance were specified as second-order variables using the repeated indicator approach, where the items measuring the first-order constructs are also used to specify the second-order construct (Hair et al., 2013). As Table 2 indicates, the constructs have good indicator reliability, all loadings exceeding 0.7 ($p < 0.001$) except for one EO item scoring slightly below 0.7 (0.695). The measures also exhibit good construct reliability, with Composite Reliability values ($0.808 < CR < 0.902$) above 0.7, and convergent validity, with Average Variance Extracted values ($0.512 < AVE < 0.711$) above 0.5. Discriminant validity is established both at the item level (item loadings systematically larger than cross-loadings) and construct level (square root of each AVE greater than the correlations of the variable with all other variables, Table 3).

The second step assessed the structural model. The latter has good predictive accuracy, with R^2 values of 0.31 for exploitative innovation, 0.40 for exploratory innovation, and 0.50 for performance. A blind-folding procedure further corroborates the model’s predictive relevance (Hair et al., 2013), all Stone-Geisser’s cross-validated redundancies (Q^2) being larger than zero (0.16 for exploitative innovation, 0.23 for exploratory innovation, and 0.25 for performance).

5. Findings

Fig. 2 summarizes the results of the path analysis. The estimates’ significance is based on the standard deviations from a bootstrap procedure with 5000 resamples (Hair et al., 2013).

The paths analysis indicates that MO has a significant positive impact

Table 3
Discriminant validity.

	1	2	3	4	5	6	7
1. EO	.74 ^a						
2. MO	.60	.63 ^a					
3. Hotel performance	.59	.57	.73 ^a				
4. Exploitative innovation	.48	.46	.57	.79 ^a			
5. Exploratory innovation	.58	.42	.62	.74	.83 ^a		
6. Hotel age	.24	.40	.25	.16	.17	–	
7. Number of employees	.57	.58	.56	.40	.49	.30	–

^a The square root AVE.

on exploitative innovation ($\beta_1 = 0.26, p < 0.05$), whereas its impact on exploratory innovation is not significant ($\beta_2 = 0.06, p = 0.62$). Conversely, EO has a significant positive impact on both exploitative ($\beta_3 = 0.31, p < 0.05$) and exploratory innovation ($\beta_4 = 0.45, p < 0.001$).

To assess the differential effects in H1 and H2, we used the nonparametric bootstrapping approach of PLS path differences proposed by Chin et al. (2013). The difference score between two path estimates is calculated for each of the 5000 bootstrap resamples. Then, the p-value and confidence interval for the difference score are computed based on a percentile bootstrap procedure ($n = 5000$ resamples).

The procedure corroborates both H1a and H1b, since MO’s impact is significantly stronger on exploitative than exploratory innovation ($\Delta_{(\beta_1-\beta_2)} = 0.20, p < 0.001, 95\%$ confidence interval: [0.196; 0.204]) and EO’s impact is significantly stronger on exploratory than exploitative innovation ($\Delta_{(\beta_4-\beta_3)} = 0.138, p < 0.001, 95\%$ confidence interval: [0.134; 0.142]). However, EO has a significantly stronger impact than MO on both exploitative innovation ($\Delta_{(\beta_3-\beta_1)} = 0.058, p < 0.001, 95\%$ confidence interval: [0.052; 0.064]) and exploratory innovation ($\Delta_{(\beta_4-\beta_2)} = 0.397, p < 0.001, 95\%$ confidence interval: [0.391; 0.403]), rejecting H2a while corroborating H2b.

To test H3, we specified an interaction term between MO and EO in the model using SmartPLS’ two-stage approach (Hair et al., 2013; Henseler and Chin, 2010). The MO*EO interaction term has a significant positive impact on both exploitative ($\beta_5 = 0.19, p < 0.05$) and exploratory innovation ($\beta_6 = 0.17, p < 0.05$), corroborating H3a and H3b. To assess the importance of this synergistic effect, we re-estimated the structural model without the interaction term. R^2 values dropped from 0.31 to 0.28 for exploitative innovation and from 0.40 to 0.37 for exploratory innovation when excluding the interaction term. The corresponding effect sizes for the synergistic effect between MO and EO are hence small, with f^2 values of 0.04 for exploitative innovation and 0.05 for exploratory innovation (Hair et al., 2013).

Finally, the path analysis corroborates H4a and H4b, as both exploitative ($\beta_7 = 0.22, p < 0.05$) and exploratory innovation ($\beta_8 = 0.30, p < 0.01$) exert a significant positive impact on hotel performance. Regarding the control variables, hotel age did not have any significant impact on either form of innovation or on performance, whereas the number of employees has a significant impact only on performance ($\beta = 0.31, p < 0.001$).

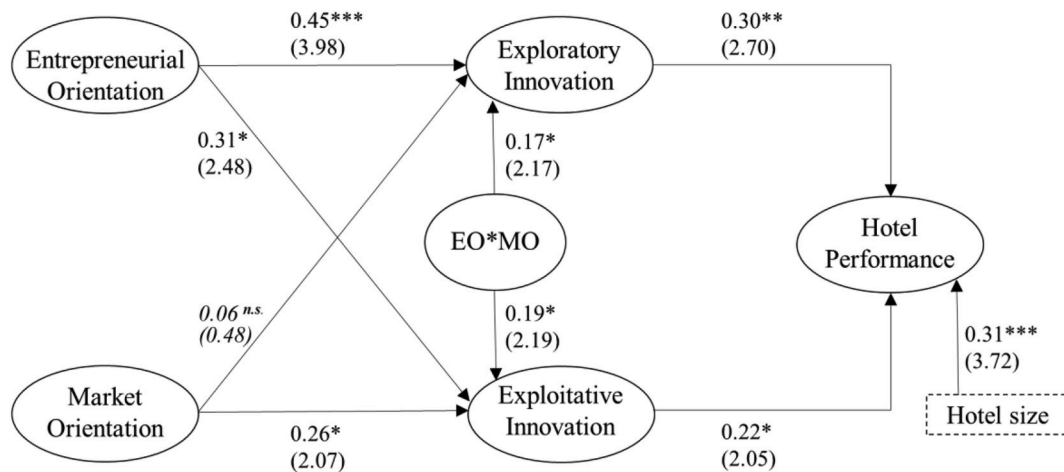
6. Discussion

6.1. Theoretical contributions

Despite “an outpouring of studies” in management journals (O’Reilly and Tushman, 2013, p.324), limited research has addressed innovation ambidexterity in hotels, and ambidexterity does not appear as a major theme in innovation research in hospitality and tourism (Gomezjelj, 2016). This research examined the differential and synergistic effects of MO and EO on hotel exploitative and exploratory innovation as well as the performance implications of pursuing both innovation forms. Building on data from Jordanian hotels, it extends the knowledge on innovation ambidexterity in hotels in three main directions.

First, the findings corroborate that, as in other industries (Chang et al., 2014; Kraft and Bausch, 2016), a differential impact exists in the effect of SO on hotels’ exploitative and exploratory innovation. Specifically, the impact of EO (MO) is significantly stronger on exploratory (exploitative) than on exploitative (exploratory) innovation, and the impact of EO is significantly stronger than that of MO on both forms of innovation. Stated differently, a double differential effect exists: not only does each SO drive more strongly a specific form of innovation, but also each form of innovation has a specific SO as its core antecedent. These findings corroborate the research hypotheses only partially.

Regarding the differential impact of each SO, the data corroborates both H1a and H1b, consistent with the meta-analysis of Kraft and Bausch (2016). It is noteworthy that Tang (2014) reported contradictory results



Notes: Values between parentheses below the standardized path coefficients are absolute t-values; *p<0.05; **p<0.01; ***p<0.001; n.s.: p>0.05

For control variables, only significant paths are presented

Fig. 2. Summary of the path analysis results.

for customer orientation, with a stronger impact on hotel exploratory than exploitative innovation. This possibly derives from customer orientation being simply one component of MO (Narver and Slater, 1990) that could exhibit different impact on innovation than that of other components (Grinstein, 2008) or of the composite MO construct (Spanjol et al., 2012). Another explanation of the contradictory results is that customer orientation is the only SO in Tang’s work, whereas the relationships between SO and innovation differ when testing for the individual effect of a single SO or multiple SO simultaneously (Baker and Sinkula, 2009).

Regarding the differential antecedents of each form of innovation, the data corroborates H2b but not H2a, EO’s impact being significantly stronger than MO’s on both exploitation and exploration. According to Zhang et al. (2016), EO is the most able among the different SO to drive both forms of innovation because “ambidexterity, by definition, is conceived as a facet of entrepreneurship” (p.132). Conversely, these authors argue that MO is less oriented towards ambidextrous initiatives. This is also consistent with Ireland and Webb (2007), for whom EO enables firms to balance between both forms of innovation, making exploitation a goal and outcome equally important to exploration. This could explain the strong impact of EO on exploitative innovation in this study, which counters the findings of Kraft and Bausch (2016), but is consistent with other, more recent work (e.g. Kocak et al., 2017).

Second, the findings extend prior knowledge on SO’s synergistic effects on innovation ambidexterity. The analysis corroborates H3a and H3b, as the MO*EO interaction has a significant positive effect of quasi-equal magnitude on both exploitation and exploration. This finding supports the idea that the co-existence of MO and EO helps in alleviating the problems associated with the other orientation rather than countering and suppressing its benefits, which is a risk given the contradictory philosophies behind MO and EO. It also echoes Raisch and Birkinshaw (2008) who posit that the different paths to ambidexterity could be complementary rather than alternatives. It also addresses the call of Zhang et al. (2016) to understand how EO drives ambidexterity: in this research, EO emerges as the only driver of both forms of innovation, and MO reinforces EO’s impact on ambidexterity through their positive interaction.

Furthermore, our findings contribute to the debate on the nature of ambidexterity. Whereas some theorists equate between innovative and organizational ambidexterity (e.g. O’Reilly and Tuschman, 2013), others distinguish between the two and consider that the former is,

despite its high importance, one aspect of the latter (e.g. Raisch and Birkinshaw, 2008). Our findings indicate that the ability to pursue MO and EO simultaneously reinforces the ability to pursue both forms of innovation simultaneously. SO ambidexterity (Tan and Liu, 2014) is hence not only different from innovation ambidexterity, but also enhances it. Such a relationship echoes other organizational studies investigating how organizational ambidexterity requires first ambidextrous organizational culture (Úbeda-García et al., 2018) and ambidexterity-oriented decisions, defined as “the capability of top management teams to manage contradictory strategic directions” (Kortmann, 2015, p.666).

Third, this study extends the knowledge on the performance consequences of innovation ambidexterity in hotels. Most research on hotel ambidexterity has focused on the antecedents of exploitative and exploratory innovation (Martinez-Ros and Orfila-Sintes, 2009; Nieves and Diaz-Meneses, 2018; Tang, 2016). Other studies (e.g. Úbeda-García et al., 2018) tested ambidexterity’s impact, as a second-order variable, on performance. Our findings corroborate H4a and H4b, as both innovation forms enhance hotel performance. Similar to Tang (2014), we also find that exploration has a stronger impact on performance than exploitation ($\Delta(\beta_8 - \beta_7) = 0.09, p < 0.001, 95\% \text{ confidence interval: } [0.086; 0.095]$). Interestingly, Chang et al. (2014) found in their meta-analysis a stronger impact on service companies’ performance of radical than incremental innovation, and the opposite for goods manufacturers. This stronger effect of exploration could derive from the major changes in the hotel industry and more generally the hospitality environment, which could require exploring novel solutions more intensely. Such differential impact of innovation forms on hotel performance requires further scrutiny from future research.

6.2. Managerial implications

To thrive in the current shifting hospitality sector, hotels need to develop their innovative ambidexterity, pursuing both exploitation and exploration. The stronger impact of the latter in our work and others’ is not a call to neglect incremental innovation and service improvement. An excessive engagement in radical innovation to develop new services and explore new markets could lead to “failure traps” by putting continuous strain on hotel resources without generating short-term financial rewards. Hotels need also to maintain their exploitative capability to enhance the newly explored services through continuous

incremental innovations. Conversely, relying extensively on incremental innovation could lead to “success traps”, where easier, short-term profits would lead hotels to underestimate competitors’ exploratory innovations, new entrants, and future industry disruption (Auh and Menguc, 2005).

This research also clarifies whether hotels need both MO and EO to develop their ambidexterity or if a single one of these SO would be sufficient. The importance of this question derives from the fact that implementing different SO requires substantial investments in different types of resources. Our findings lead to different recommendations depending on hotels’ resources and capabilities. Under limited resources, hotels might face ‘an either or situation’ in their choice of SO, and EO appears as the best alternative. Indeed, MO seems to enhance only exploitation, supporting the idea that hotels practicing MO tend to engage in a proximate search (Joshi, 2016), which could create barriers to creativity and idea generation (Gurtner and Reinhardt, 2016). Therefore, hotels with MO for sole orientation may achieve short-term competitive advantage that is difficult to maintain in the long-term. Conversely, not only EO enhances both forms of innovation, but also its impact on both is significantly stronger than MO’s.

However, hotels with sufficient resources and capabilities have a clear interest in augmenting their EO with MO. On the one hand, MO significantly enhances exploitation, improving hotels’ service quality and helping refine existing service processes and systems. On the other hand, the MO*EO synergistic effect indicates that MO reinforces the positive impact of EO on both forms of innovation. The cultural routines of diligently gathering, disseminating, and acting on market intelligence that MO establishes could be crucial to discipline the organization’s entrepreneurial efforts and exploration (Aulet, 2013; Sull, 2004), especially when it comes to scaling newly explored services (Picken, 2017).

6.3. Limitations and future research

Several limitations of this research provide future research opportunities. Data were collected from a single country and, while the sample size is consistent with similar studies and covers approximately half of the 4- and 5-star hotels in Jordan, a larger and more diverse sample would enhance the results’ reliability and generalizability. Furthermore, hotel performance was assessed via subjective, self-reported measures due to the unavailability of objective measures. With the exception of Agarwal et al. (2003), who used both subjective and objective measures, studies linking SO, innovation, and performance rely solely on subjective measures (e.g. Campo et al., 2014; Tajeddini, 2010; Úbeda-García et al., 2018; Nieves and Diaz-Meneses, 2016). Agarwal et al. found a stronger impact on subjective than objective measures, though with the same directionality of effect. Other studies outside the hotel industry offer mixed results, sometimes finding a stronger impact on objective than on subjective measures (González-Benito and González-Benito, 2005). However, objective measures would strengthen the conclusions of the current model.

Moreover, the model involved two SO only: MO and EO. The SO literature has proposed a number of orientations such as brand, technology, and learning orientations, which could have different implications for innovation activities. Therefore, a more comprehensive study could offer a more accurate picture concerning the best SO drivers of each form of innovation. Finally, the research relied on cross-sectional data. However, innovation ambidexterity is a dynamic capability (Zhang et al., 2016) and the synergy between SO could develop sequentially (Hakala, 2011). Hence, longitudinal data could better inform the dynamics through which MO and EO lead to developing ambidexterity as well as the interplay between exploitation and exploration over time.

Declaration of competing interest

None.

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