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DEVELOPMENT AND VALIDATION OF THE SCALE FOR MEASURING DIGITAL MARKETING ORIENTATION IN THE HOTEL INDUSTRY

Abstract

Purpose: This paper aims to develop and validate the scale for measuring digital marketing orientation (DMO) in the hotel industry.

Methodology: The robust exploratory and confirmatory factor analysis procedure is applied to a data set collected through an online survey of 164 hotels in Bosnia and Herzegovina, Croatia, Serbia, and Montenegro.

Results: Digital marketing orientation has been conceptualized, and a scale has been developed to measure this construct. The scale consists of 15 items in three defined dimensions (subscales): *Strategic emphasis*, *Digital intelligence generation*, and *Planning and resource provisioning.*

Conclusion: Using the developed digital marketing orientation (DMO) scale, hotel managers can conduct a DMO audit similar to conducting a market orientation audit to determine in which areas it is necessary to improve market orientation in the online environment. Academics may use the DMO scale to investigate its antecedents and the influence of other factors on DMO and/or the influence of DMO on other factors. This is the first study, to the author's knowledge, that developed and validated a measurement scale for digital marketing orientation in the hotel industry.

Keywords: Digital marketing orientation**,** e-marketing orientation, market orientation, hotel industry, scale development, tourism

1. Introduction

Over the past four decades, significant research progress has been made in the field of market orientation. Previous research has focused on defining (Kohli & Jaworski, 1990; Narver & Slater, 1990; Ruekert, 1992), measuring (Narver & Slater, 1990; Kohli et al., 1993; Deshpandé et al., 1993; Deng & Dart, 1994; Deshpandé & Farley, 1998; Harrison-Walker, 2001; Gray et al., 2010; Sampaio et al., 2019) and examining the impact of market orientation (Narver & Slater, 1990; Pulendran et al., 2003; Bazazo et al., 2017), as well as investigating the organizational drivers of market orientation

and its enhancement (Jaworski & Kohli, 1996; Van Egeren & O'Connor, 1998). Digital technology has led to significant business changes, enabling companies to improve their business processes and build better relationships with their target markets. The emergence of digital marketing has created a need for research in this area, especially in terms of defining and measuring digital marketing orientation. In contrast to market orientation, which has attracted significant attention from researchers, a surprisingly small number of studies in the last 20 years have dealt with the conceptualization of digital marketing orientation and the development of reliable and valid measurement instruments. This paper aims to contribute to the conceptualization and measurement of digital marketing orientation in the hotel industry, in particular by filling the gap observed in previous research cited in this paper. The purpose is to develop and validate the scale for measuring digital marketing orientation (DMO) in the hotel industry. The article begins with a theoretical framework, which helps in specifying the domain of the construct. It is followed by an explanation of the research design, analysis of the sample profile, and the results of exploratory and confirmatory factor analysis. Finally, after the discussion and conclusions, some of the research limitations and recommendations for future research are given.

2. Theoretical framework

2.1 Marketing and market orientation

The marketing concept has been described as a "corporate state of mind that insists on the integration and coordination of all of the marketing functions, which, in turn, are melded with other corporate functions, for the primary objective of producing maximum long-range corporate profits" (Felton, 1959). It means maximizing the focus on customer satisfaction while making a profit (McCarthy & Perreault, 1984) by directing the most effort to discover the wants of a target audience and then create the goods and services to satisfy them (Kotler & Zaltman, 1971). The marketing concept rests on four pillars: (1) target marketing; (2) satisfying explicit and latent customer needs; (3) integrated organizational focus on the customers; and (4) long-term profitability (Bell & Emory, 1971; Kotler, 2000).

While the marketing concept is considered a philosophy that can be a core part of corporate culture, Kohli and Jaworski (1990) use the term "market orientation" to describe its implementation. Hence, a market-oriented organization is one whose actions are consistent with the marketing concept, in which

the pillars of the marketing concept are operationally manifest. Previous studies report that "market orientation contributes to firms' performance substantially more than alternative strategic orientations such as innovation and entrepreneurial orientations" (Grinstein, 2008). It positively impacts organizational performance, customer loyalty and satisfaction, the firm's innovativeness, and employee organizational commitment (Masa'deh et al., 2018). Most authors whose studies were dedicated to explaining the construct of market orientation and its measurement, like Kohli and Jaworski (1990), Narver and Slater (1990), and Day (1994), have primarily focused on ongoing behaviors and activities in an organization, in contrast to cultural perspective that emphasizes the market-oriented shared values and beliefs that provide the cultural infrastructure of an organization (Gebhardt et al., 2006). From the cultural perspective, the market orientation is an organizational culture whose values and norms emphasize creating and delivering superior value to customers (Hurley & Hult, 1998).

Kohli and Jaworski (1990) define three elements of market orientation: (1) *intelligence generation*, (2) *intelligence dissemination,* and (3) *responsiveness*, which comply with previously defined pillars of the marketing concept. To be customer-focused, organizations need to obtain information from their customers about their current and future needs and preferences and information about exogenous marketing factors (e.g. competition, regulation) that affect those needs and preferences. These environmental scanning activities are subsumed under *market intelligence generation.* Coordinated marketing implies that all departments within the organization operate in a marketing manner, which means that they need to be cognizant of customer needs (aware of market intelligence) and respond to those needs. *Intelligence dissemination* is the element of market orientation which involves communicating and disseminating market intelligence to all departments and individuals in the organization. In this context, the term "market orientation" is preferred over "marketing orientation", suggesting that the construct is not exclusively a concern of the marketing function but a variety of departments who generate market intelligence, disseminate it and respond to it. *Responsiveness* is the third element of market orientation, and it implies taking actions in response to intelligence generated and disseminated. In practice, responsiveness includes activities like selecting target markets, designing and offering products/services that will fulfill customers' current and anticipated needs, and produc-

ing, distributing, and promoting the products in a way that elicits a favorable end-customer response, which will lead to profit. Hence, profitability can be seen as a consequence of market orientation.

Similar to the authors Kohli and Jaworski, Narver and Slater (1990) state that market orientation consists of three behavioral components - customer orientation, competitor orientation, and inter-functional coordination, and two decision criteria - long term focus and profitability. The Narver and Slater model is consistent with the findings of Kohli and Jaworski (1990). Customer orientation and competitor orientation include activities involved in acquiring information about customers and competitors and disseminating it throughout the business(es), while the third component, inter-functional coordination, is consistent with "responsiveness", as it comprises the business's coordinated efforts, typically involving more than the marketing department, to create superior value for the buyers.

2.2 Market orientation measurement

The measurement of market orientation and its impact on business performance has received considerable attention in previous research. Narver and Slater (1990) developed a 15-item factor-weighted scale (MKTOR) to measure market orientation, which consists of three behavioral components: customer orientation (α=.8547), competitor orientation (α=.7164), and inter-functional coordination (α=.7112). The scale was tested on split samples from 371 self-administered questionnaires from top managers of 113 strategic business units (SBUs) of a single corporation. Responses were recorded on a 7-point Likert scale.

Kohli et al. (1993) developed a 20-item scale (MAR-KOR) that measures three components of market orientation: intelligence generation (6 items), intelligence dissemination (5 items), and responsiveness (9 items). They used the nonlinear factor analysis of matched samples of senior marketing and non-marketing executives from 230 SBUs. Responses were recorded on a 5-point Likert scale.

Deshpandé et al.'s (1993) study was designed to evaluate the relationships between corporate culture, customer orientation, innovativeness, and business performance. They developed a 9-item *Customer Orientation* scale using results from a study of 138 Japanese executives.

Deshpandé and Farley's (1998) study of 82 managers in 27 European and U.S. companies shows that all three scales, as mentioned above, are reliable and valid. Additionally, they combined and factor analyzed all items from the MKTOR, MARKOR, and Customer Orientation scales and developed the MORTN scale that consists of 10 items. This synthesized 10-item scale is based on a more parsimonious definition of market orientation, which defines it as "the set of cross-functional processes and activities directed at creating and satisfying customers through continuous needs-assessment" (Deshpandé & Farley, 1998).

2.3 Digital marketing & e-marketing orientation

In today's connected world, the Internet and other digital technologies are widely used to support, improve, and optimize different business processes, including marketing. Both academics and professionals have coined a bewildering range of alternative terms to describe the use of digital technologies in marketing. Google Scholar[1] reveals that some of the most often mentioned in scientific papers are Internet marketing, web marketing, e-marketing, and, more recently, digital marketing.

The term digital marketing describes a broader scope of activities than Internet marketing and web marketing. It refers to a range of digital platforms to interact with audiences, management of digital customer data and electronic customer relationship management. Since the term "digital marketing" has been used the most lately among academics and practitioners, and since in the last five years, it has been most frequently searched via Google search[2] compared to the other terms (internet marketing, web marketing and e-marketing), it will be used in the present paper to describe the "application of digital media, data, and technology integrated with traditional communications to achieve marketing objectives" (Chaffey & Ellis-Chadwick, 2019).

Regardless of the application level, digital marketing represents the application of new digital technologies, new devices, and systems, which bring changes in many marketing functions. Digital marketing is business innovation. Innovation is one of the main components for the success of small and medium-sized enterprises (Hoq & Che Ha, 2009) and one of the key factors influencing business performance (Burns & Stalker, 1961; Hurley & Hult, 1998; Porter, 1990).

Peattie and Peters (1997) were investigating how development in the field of information technolo-

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1   Google Scholar. https://scholar.google.com/

2   Google Trends. https://trends.google.com/trends/ explore?date=today%205-y&geo=US&q=digital%20 marketing,internet%20marketing,e-marketing,web%20marketing

gies could impact activities in firms and which business orientations may result from such impact. They advocate that information impacts the marketing activities by enabling the new forms of marketing implementation and new marketing management opportunities, resulting in electronic marketing orientation.

Similar to the marketing concept and market orientation, digital marketing orientation (DMO) could be defined as "the level of an organization's orientation toward the use of the Internet and other digital technologies in the implementation of the marketing concept" (Mahmutović, 2018). It can be conceptualized as a synthesis of the behaviors toward adopting digital marketing and the concurrent organizational business philosophy (Shaltoni & West, 2010; Shaltoni, 2006). Hence, digital marketing orientation is the extent to which an organization is oriented, i.e., strategically committed to using the Internet and other digital technologies to determine the target markets' needs and requirements and deliver customer satisfaction more effectively and efficiently than competitors (Mahmutović, 2018).

Shaltoni (2006) has made a pioneering effort in investigating the organizational orientation toward digital marketing. His results indicated that digital marketing orientation is made up of philosophical and behavioral components. The philosophical component is identified by the degree to which decision-makers emphasize digital marketing, while the behavioral component is viewed as all the activities that led to high levels of involvement in digital marketing. If we draw a parallel with market orientation, we notice that the philosophical component is similar to the attitudinal perspective of market orientation (Narver & Slater, 1990), while the behavioral component is similar to market orientation identified by Kohli and Jaworski (1990). Furthermore, Shaltoni (2006) divides the behavioral component into two phases: initiation and implementation phase, where the initiation phase corresponds to the *intelligence generation* and *intelligence dissemination* (informing and formal planning), while the implementation phase corresponds to the *responsiveness* (all activities involved in putting digital marketing into practice).

Based on the grounds that digital marketing orientation combines two aspects, philosophical dimension (emphasis on digital marketing) and behavioral dimension (activities leading to high levels of involvement in digital marketing), Tsiotsou and Vlachopoulou (2009) have tried to conceptualize

and operationalize digital marketing orientation through the development of a scale for DMO. They conceptualize DMO as the business culture, a construct that describes an organizational philosophical commitment to digital marketing, as a basis for the development and maintenance of competitive advantage. A survey was conducted of 261 companies from the tourism industry. A three-dimensional scale (transaction orientation, promotion orientation, database orientation) with a total of 8 items for measuring DMO was constructed. However, the scale items' analysis suggests that the scale measures the firm's behavior (digital marketing implementation) and not its culture, as the authors have defined the construct. It is also evident that the scale does not measure market intelligence generation and intelligence dissemination.

Shaltoni's (2006) exploratory research served Shaltoni and West (2011) as a theoretical basis for developing a 12-item scale for measuring e-marketing orientation in b2b markets. Each of the three components of e-marketing orientation was measured with a four-item subscale.

Similar to Shaltoni and West, Chen and Huang (2016) conducted a cross-sectional study on a sample of 157 top-ranked companies in the manufacturing (75.4%) and service industries in Taiwan, intending to develop and validate the measurement scale of e-marketing orientation. Through confirmatory factor analysis, they developed a scale of 14 items, which measure three components of e-marketing orientation: (1) cultural philosophy, (2) initiation, and (3) system development and integration. Compared to the scale developed by Shaltoni and West (2010), Chen and Huang (2016) have partially renamed the first and third scale dimensions and added two new items to the implementation component, relating to "the integration and processing of data obtained from suppliers, customers and employees" and "continuous monitoring of order status and various stages of the process".

Mahmutović (2018) has explored how e-marketing orientation (EMO) in European real estate agencies affects their marketing performance. Empirical research for this work was carried out on a sample of 311 real estate agencies from eight countries. To measure EMO, the author used the 12-item scale developed by Shaltoni and West (2010). However, factor analysis did not confirm the behavioral component of e-marketing orientation as suggested by Shaltoni (2006), only philosophical, and the author

named this factor strategic e-marketing orientation – SEMO. The path analysis has confirmed that the level of strategic e-marketing orientation has a positive and significant impact on the level of e-marketing budget and the level of e-marketing adoption and implementation in real estate agencies, and a strong direct impact on enhanced marketing efficiency and effectiveness.

2.4 Marketing planning, digital analytics, and business performance

Marketing planning could be defined as a technology, a set of activities and techniques that are intended to assist an organization in achieving its marketing objectives by aligning its internal capabilities with the external environment. "It is the principle mechanism firms possess for aligning their efforts with the expectations of their customers" (McKee et al., 1990). "Formal planning yields benefits for all types of companies, large and small, new and mature. It encourages systematic thinking, and forces the company to sharpen its objectives and policies, leads to better coordination of company efforts, and provides more explicit performance standards for control" (Kotler et al., 2005).

Pulendran et al. (2003) investigated relationships between marketing planning, marketing orientation, and business performance. They treat marketing planning as a purely behavioral phenomenon (set of activities) and market orientation as a part of the belief system (organizational culture). The research findings reveal that both marketing planning quality and marketing orientation positively and significantly impact business performance, and that there is a positive and significant relationship between marketing planning and market orientation. Authors suggest that "planning processes may provide communication about organizational values and objectives" and that "managers should be considering the nature of their planning processes as part of the process of developing and maintaining a market orientation". Peštek (2009) and Mahmutović (2018) confirmed the positive and significant impact of digital marketing planning, marketing planning, and strategic planning on tourist companies and real estate agencies' business performance. These findings indicate the need for more serious consideration of planning as an essential element of market orientation or its antecedent.

If we consider some of the planning models, such as the SOSTAC (Smith, 2020), we can see that market information (*intelligence)* and dissemination within the company are needed in all phases of digital marketing planning, from situational analysis (scanning the environment, competition, consumers…), defining objectives, selecting target markets and online value proposition, choosing the best marketing mix, online channels and tactics, and in the control phase. Hence, the collection of market information and performance metrics of individual marketing activities and their dissemination within the company are an integral part of the planning process, which fully corresponds to the market orientation dimensions. Furthermore, adequate responsiveness of the company is possible only through the implementation of a quality plan. Only with a strategic and planned approach, the allocation of digital marketing budgets to planned digital marketing activities, following the set strategy and goals, with the provision of the required resources, leads to the enhancement of marketing activities, which in turn leads to the enhancement of marketing (cost) efficiency and consequently, to the enhancement of marketing effectiveness (Mahmutović, 2018).

An essential advantage of the digital economy, e-commerce, and digital marketing is the high degree of measurability and consumer behavior analysis (Chaffey & Patron, 2012; Chaffey & Ellis-Chadwick, 2019; Hartman, 2020). Companies can collect and process large amounts of data from the digital environment. These data may come from own business sources (such as the company website or other online channels that the company uses), from online marketing intelligence sources (websites and other online channels used by competitors, social networks, etc.), or through the online marketing research. "Digital analytics is a set of business and technical activities that define, create, collect, verify or transform digital data into reporting, research, analysis, recommendations, optimizations, predictions, and automation" (Phillips, 2013). Digital analytics can provide useful insights about customers, their behavior, and about the effectiveness and efficiency of specific online channels. This kind of continuous market intelligence generation helps companies plan better and refine and optimize their marketing activities. Hence, this leads to a higher digital marketing orientation of a company.

Mahmutović (2020) suggests a set of KPIs and metrics that should facilitate strategic and tactical marketing decisions in the hotel business. His proposed framework presents a solid base for developing a

subscale for assessing the level of adoption of digital analytics as one of the latent components of digital marketing orientation.

3. Method

3.1 Research design

The scale development included five steps as suggested by Churchill (1979). (1) The process of scale development started with the specification of the construct domain. (2) After the literature review, a list of 16 items was selected based on the literature discussion, and some of the items were developed by the author (see Table 1).

Table 1 Digital marketing orientation scale

Code	Item	Source
SE1	In our company, we believe it is strategically necessary to use digital marketing in our business.	Adapted from Shaltoni and West (2010)
SE2	In our company, we tell employees that business success depends on using the advanced capabilities provided by digital marketing.	Adapted from Shaltoni and West (2010)
SE3	We encourage the development of new ideas and initiatives for the use of the Internet and other digital technologies in marketing activities.	Developed for this study.
SE4	We feel that our company should take advantage of the opportunities provided by digital marketing and maximize the application of the Internet and other digital technologies in our business.	Adapted from Shaltoni and West (2010)
SE5	We cannot imagine the business of our hotel without the use of the Internet and other digital technologies in marketing activities.	Developed for this study.
DIG1	We have clearly defined parameters (metrics) for measuring the performance of our website.	Developed for this study.
DIG2	We know what visitors are doing on our website.	Developed for this study.
DIG3	We know how many visitors to our website become our customers.	Developed for this study.
DIG4	We know what percentage of visitors came to our website through various online channels (Facebook, Google ads, display ads, search engines)	Developed for this study.
DIG5**	Thanks to web analytics, we know which type of guests is looking for which type of accommodation, which services and in which periods.	Developed for this study.
PRP1	Our company has a digital marketing plan with clearly defined activities, responsible executors, and a budget for each activity.	Developed for this study.
PRP2	Our digital marketing plan is an integral part of our marketing plan and is created following the set goals within the marketing plan.	Developed for this study.
PRP3	We hold several meetings throughout the year to prepare a digital marketing plan.	Adapted from Kohli, Jaworski and Kumar (1993)
PRP4	Our company has adequate technical support for the implementation of digital marketing activities (employees or services of specialized companies).	Adapted from Shaltoni and West 2010
PRP5	In our company, people with knowledge in the field of digital marketing are responsible for the implementation of digital marketing.	Adapted from Kohli, Jaworski and Kumar (1993)
PRP6	Activities of all employees in the company, as well as external collaborators (IT experts, etc.) who are responsible for the implementation of digital marketing, are well coordinated.	Adapted from Kohli, Jaworski and Kumar (1993)
** Through CFA analysis, this item has been removed due to problems with discriminant validity.		

Source: Author

For each of the research constructs (components of digital marketing orientation), a subscale with multiple items was developed. (3) Theoretical (face) validation has been performed as suggested by Hair et al. (2019). Three experts, university professors with experience in the construct domain of the scale, have evaluated the pool of selected items with the task of checking the wording of items, checking whether some items should be removed and whether any items were missing from the scale. The experts were asked to evaluate each item (on a measurement scale from 1 to 5) for its representativeness of the construct and clarity. Items rated with scores of 4 or higher have been selected in the final item pool, which finally contained 16 items. Next, a pre-test was conducted on a sample of 40 hotels, and nine complete responses were received, revealing no problems or errors. (4) Finally, a personalized email invitation to an online survey was sent to all respondents, followed by two reminders sent every 15 days to those respondents who did not open the email. The online survey was conducted using the LimeSurvey web application, and a 5-point Likert scale was used to collect data on digital marketing orientation. (5) Once the data had been collected, the existence of non-response bias was explored, using Levene's test of homogeneity of variance between two groups of respondents, those who responded earlier and those who responded later. The assumption of the extrapolation method of successive waves (Armstrong & Overton, 1977) is that subjects who respond less readily are more like non-respondents. For all scale items, Levene's test was non-significant ($p > .05$), suggesting that variances of early and late respondents are approximately equal, which means that non-response bias is not a problem in this study.

Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were performed using software IBM SPSS 26 and IBM AMOS 23 to test the reliability and validity of the scale.

3.2 Research sample

Data collection took place in the period July - October 2020. This research sample consists of hotel managers from Bosnia and Herzegovina, the Republic of Croatia, Serbia, and Montenegro. The list of categorized hotels was taken from the official government registers, and the contact email addresses were collected from the hotels' websites. A final population of 1,412 hotels was defined. Out of 1,412 personalized email invitations sent, 108 bounced back, and finally, 206 responses were received. As it was determined that 42 responses had missing data related to digital analytics, it was decided to exclude them from further analysis. Thus, the final sample for analysis consisted of 164 respondents, which gives the response rate of 12.6% of the total population. Although the response rate is slightly lower compared to previous studies related to this field (approximately 20%), it should be noted that it was calculated relative to the total population and that the research was conducted during the COVID 19 pandemic when many hotels were temporarily closed. A rule of thumb which says that a "minimum of 10 observations per variable is satisfied to avoid any computational difficulties"[3] is met, and the sample size is slightly larger than in similar studies by Shaltoni and West (2010) and Chen and Huang (2016). The sample profile is presented in Table 2.

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3 Factor analysis | SPSS annotated output. https://stats.idre.ucla.edu/spss/output/factor-analysis/

Table 2 Sample profile

COUNTRY	Bosnia	Croatia	Montenegro	Serbia	Total	% Total
number of hotels	44	56	28	36	**164**	**100.0**
HOTEL TYPE						
part of the hotel group	5	9	3	4	**21**	**12.8**
independent	39	47	25	32	**143**	**87.2**
HOTEL CATEGORIZATION						
2*	0	1	0	2	**3**	**1.8**
3*	12	12	13	13	**50**	**30.5**
4*	27	39	14	21	**101**	**61.6**

COUNTRY	Bosnia	Croatia	Montenegro	Serbia	Total	% Total
5*	2	4	1	0	**7**	**4.3**
Not categorized	3	0	0	0	**3**	**1.8**
HOTEL SIZE						
No of rooms						
0-24	19	14	14	17	**64**	**39.0**
25-99	21	26	8	13	**68**	**41.5**
100-299	2	12	5	5	**24**	**14.6**
> 299	2	4	1	1	**8**	**4.9**
No of employees						
1- 10	18	14	13	9	**54**	**32.9**
11 - 20	14	13	5	11	**43**	**26.2**
21 - 30	3	7	3	3	**16**	**9.8**
31 - 40	3	5	3	7	**18**	**11.0**
41 - 50	3	1	1	1	**6**	**3.7**
> 50	3	16	2	5	**26**	**15.9**
GENDER OF THE RESPONDENT						
male	15	22	10	17	**64**	**39.0**
female	25	31	15	18	**89**	**54.3**
NN	4	3	3	1	**11**	**6.7**
POSITION OF THE RESPONDENT						
board member	5	3	6	2	**16**	**9.8**
general manager	15	26	9	21	**71**	**43.3**
marketing manager	4	7	3	3	**17**	**10.4**
sales manager	7	17	3	5	**32**	**19.5**
a person in charge of DM	0	2	1	1	**4**	**2.4**
reception manager	10	0	3	4	**17**	**10.4**

Source: Author

4. Results

4.1 Exploratory factor analysis

Before performing the exploratory factor analysis (EFA), the adequacy of the data for factorization was checked. Bartlett's test of sphericity is significant at a probability of .05 or less (.0001), and Kaiser-Mayer-Olkin (KMO) value is .60 or higher (.919), which confirms that factor analysis can be applied to data (Pett et al., 2003). The normality of the data distribution was checked as a prerequisite for applying the maximum likelihood method for

factor extraction, as suggested by Nunnally and Bernstein (1994). Exploratory factor analysis, using ML method with Promax rotation, resulted in a total of 3 factors that represent the components of digital marketing orientation: Strategic Emphasis (SE), Digital Intelligence Generation (DIG), and Planning and Resource Provisioning (PRP). The screen test was used to estimate the number of factors to retain, as it is considered more accurate than the eigenvalue rule (Pett et al., 2003). The reliability coefficients of all the subscales exceeded the recommended threshold of .70 suggested by Nunnally (1978) (see Table 3).

Table 3 *The results of the exploratory factor analysis of digital marketing orientation*

Factor	Strategic emphasis	Digital intelligence generation	Planning and resource provisioning	Eigenvalue	Variance explained (%)	Reliability Alpha (α)
Factor 1: Strategic emphasis (SE)				2.131	11.154	**0.888**
SE1	0.95					
SE2	0.74					
SE3	0.59					
SE4	0.88					
SE5	0.62					
Avg loading	0.76					
Factor 2: Digital intelligence generation (DIG)				1.092	4.789	**0.863**
DIG1		0.56				
DIG2		0.84				
DIG3		0.62				
DIG4		0.90				
**DIG5		0.52				
Avg loading		**0.69**				
Factor 3: Planning and resource provisioning (PRP)				8.106	48.476	**0.925**
PRP1			0.77			
PRP2			0.60			
PRP3			0.80			
PRP4			0.73			
PRP5			0.80			
PRP6			0.81			
Avg loading			**0.75**			
Total variance explained (%)					**64.419**	
Cronbach alpha of the total scale						**0.932**
Suitability of data for factor analysis						
KMO: .919						
Bartlett's Test of Sphericity sig.: .000						
** Through CFA analysis, this item has been removed due to problems with discriminant validity.						

Source: Author

The convergent and discriminant validity of the scale was confirmed through the EFA, which showed that model acceptance criteria were satisfied: all variables load the associated factors with more than 0.5, and each other factor with less than 0.35 (Hair et al., 2010). Additionally, all variables within each factor load their factor by an average of more than 0.7, which confirms the scale's con-vergent validity. The obtained factor solution shows adequate discriminatory validity since there are no problematic cross-loads in the pattern matrix. The correlation matrix shown in Table 4 does not show correlations above 0.7, which confirms the model's discriminant validity. The extracted three factors explain 64.4% of the total variance, with all three factors having an eigenvalue greater than 1.

Table 4 Correlation matrix of extracted factors

Factor	1	2	3
	Strategic emphasis (SE)	**Digital intelligence generation (DIG)**	**Planning and resource provisioning (PRP)**
1	**1.000**	.682	.575
2	.682	**1.000**	.414
3	.575	.414	**1.000**

Source: Author

4.2 Confirmatory factor analysis

Confirmatory factor analysis (CFA) was used to evaluate the measurement model fit. Hair et al. (2010) suggest that the validity of the measurement model depends on (1) an acceptable level of goodness of fit and (2) concrete evidence of construct validity (convergent and discriminant).

As model fit indicators for the initial model were not satisfactory, an additional analysis was carried out concerning modification indices greater than 5. After correlating error terms with high modification indices related to the same factor, the model was reevaluated. It was found that the obtained model with three first-order factors and one second-order factor (digital marketing orientation) adequately corresponds to the empirical data. All indexes of goodness of fit (X2 = 158.110, df = 95, X2/df = 1.664, CFI = .965, TI = .956, AGFI = .840, SRMR = .0615, RMSEA = .064, pclose = .099) indicate good model fit. After the introduction of the second-order factor, standardized regression weight for every item is over .6, and the average standardized regression weight for factor SE is .77, for factor PRP it is .80 and for factor DIG it is .75.

4.3 Reliability and validity

The reliability of the scales in the final model obtained through the CFA analysis was estimated by computing the Cronbach alpha coefficient (ά) for each factor and by computing additional reliability measures according to the Hair et al.'s (2010) suggestions: Construct Reliability (CR), Average Variance Extracted (AVE), Maximum Shared Variance (MSV) and McDonald Construct Reliability coefficient omega (MaxR(H)). The thresholds for these values are as follows: ά > 0.7 (internal consistency), CR > 0.7 (reliability), AVE > 0.5 (convergent validity), MSV < AVE (discriminant validity) and Square root of AVE > inter-construct correlations (discriminant validity).

The Cronbach alpha coefficient (ά) for the digital marketing orientation scale is .932, and for every construct it is over .86, which confirms convergent validity. The Stats Tools Package (Gaskin, 2016)[4] was used to calculate the measures of the scale validity, and results indicated issues with discriminant validity in factor DIG. The model was reevaluated, and after removing item DIG5, all indices confirmed reliability of the scales, and convergent and discriminant validity (see Table 5), and all indexes indicated good model fit (X2 = 143.789, df = 81, X2/df = 1.775, CFI = .964, TLI = .953, AGFI = .842, SRMR = .0607, RMSEA = .069, pclose = .05).

Table 5 Indices for the assessment of the convergent and discriminatory validity

↓Factor Indices →	CR	AVE	MSV	MaxR(H)	SE	PRP	DIG
SE	0.881	0.599	0.426	0.895	**0.774**		
PRP	0.918	0.651	0.598	0.919	0.653	**0.807**	
DIG	0.868	0.622	0.598	0.876	0.462	0.773	**0.789**

Notes: CR = Composite Reliability; AVE = Average Variance Extracted; MSV = Maximum Shared Variance; MaxR(H) = McDonald Construct Reliability. The square root of AVE is shown on diagonal in bold faces.

Source: Author

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4   Gaskin, J. (2016). ValidityMaster. Stats Tools Package. http://statwiki.kolobkreations.com

The final model shows that the second-order construct "digital marketing orientation" consists of three dimensions named: Strategic Emphasis (SE) (5 items: SE1, SE2, SE3, SE4, SE5; ά = .888), Digital Intelligence Generation (DIG) (4 items: DIG1, DIG2, DIG3, DIG4; ά = .862), and Planning and Resource Provisioning (PRP) (6 items: PRP1, PRP2, PRP3, PRP4, PRP5, PRP6; ά = .925). The Cronbach alpha for developed digital marketing orientation scale (DMO) is 0.933.

5. Discussion and conclusions

The digital marketing orientation in the hotel industry can be explained and measured through three dimensions: *strategic emphasis* (toward digital marketing), *digital intelligence generation*, and *planning and resource provisioning*. The first dimension corresponds with the cultural/philosophical component of market orientation (Hurley & Hult, 1998), while the second and third dimensions correspond to market orientation's behavioral components (Narver & Slater, 1990; Kohli et al., 1993).

Every organization is guided by underlying business philosophy, which shapes its culture and influences strategic and tactical decisions. The digital marketing orientation is a new type of business orientation and business philosophy. Its first construct, *strategic emphasis* toward digital marketing, is intended to measure the cultural dimension of digital marketing orientation. The five items of the *strategic emphasis* subscale assess the extent to which the hotel management believes in the strategic necessity of digital marketing application and the dependence of business results on the application of digital marketing as well as the extent to which they transfer their beliefs to other employees.

"A business is market-oriented when its culture is systematically and entirely committed to the continuous creation of superior customer value. Specifically, this entails collecting and coordinating information on customers, competitors, and other significant market influencers to build that value" (Narver & Slater, 1994). With the increasing transition of consumers from offline to online channels, especially in the hotel industry, digital technology, in the form of digital analytics tools, has enabled new ways for automated collection of valuable demographic, geographical, and psychographic data on customers and data about their preferences and online behavior. The second construct, *digital intelligence generation (DIG)*, is intended to assess the extent to which a company has developed a set of metrics for measuring the performance of its website and the extent to which it collects digital intelligence necessary to understand website visitors and online customers, and to evaluate the effectiveness of individual online channels used for visitor acquisition. Just as digital marketing upgrades marketing through the application of new technologies, the DIG subscale represents a necessary upgrade of the "Intelligence Generation" subscale for measuring market orientation (Kohli et al., 1993), which relies exclusively on consumer surveys and is thus insufficient for companies that are doing business in an online environment.

Planning and resource provisioning (PRP) is the third dimension of digital marketing orientation. This dimension is consistent with the "responsiveness" dimension within the market orientation. An adequate response to customers' identified needs and requirements in target markets requires a strategic approach based on the development of a digital marketing strategy and digital marketing plan. Previous studies have shown that higher budgets for digital marketing are not a guarantee for business success (Mahmutović, 2018). An adequate digital marketing plan must be accompanied by investment in digital marketing, and all other necessary resources (primarily human resources, knowledge) need to be provided for digital marketing implementation. The *planning and resource provisioning (PRP)* subscale is intended to assess the level and quality of digital marketing planning and resource adequacy for implementing the plan.

Using the developed digital marketing orientation (DMO) scale, hotel managers can conduct a DMO audit similar to conducting a market orientation audit. It can help them to determine which areas require improvement in market orientation in the online environment. That could be especially useful for hotel groups with many strategic business units (SBUs). In order to gain a comprehensive insight into the level of digital marketing orientation, the measurement should include, in addition to top management, lower levels of management within hotel corporations.

Academics may use the DMO scale to investigate its antecedents and the influence of other factors on DMO and/or the influence of DMO on other factors.

6. Limitations and recommendation for future research

Although the number of respondents corresponds to the suggested threshold for conducting factor analysis (10 respondents per one scale item), the sample size can be considered one of the research limitations. For that reason, the recommendation for future research is to replicate this study on larger samples in different contexts, e.g. in other industries or other countries. Trying different survey contact methods and data collection is suggested for future research. The development of a more objective way of measuring individual constructs, such as digital analytics, could reduce potential bias due to self-reporting items. The survey was conducted during the Covid-19 pandemic, which was the reason for the lower response rate. It would be desirable to repeat the survey after the end of the pandemic. Also, it would be useful to investigate the impact of DMO on hotels' marketing performance to determine whether a greater orientation toward DMO can help hotels overcome fear of online travel agencies, and to identify DMO antecedents.

REFERENCES

1. Armstrong, J. S. & Overton, T. S. (1977). Estimating non-response bias in mailing survey. *Journal of Marketing Research, 14*(3), 396-402. https://doi.org/10.1177/002224377701400320

2. Bazazo, I., Alansari, I., Alquraan, H., Alzgaybh, Y. & Masa'deh, R. (2017). The Influence of Total Quality Management, Market Orientation and E-Marketing on Hotel Performance. *International Journal of Business Administration, 8*(4), 79-99. https://doi.org/10.5430/ijba.v8n4p79

3. Bell, M. L. & Emory, C. W. (1971). The Faltering Marketing Concept. *Journal of Marketing, 35*(4), 37-42. https://doi.org/10.1177/002224297103500407

4. Burns, T. & Stalker, G. (1961). *The Management of Innovation.* Tavistock Publications.

5. Chaffey, D. & Patron, M. (2012). From web analytics to digital marketing optimization: Increasing the commercial value of digital analytics. *Journal of Direct, Data and Digital Marketing Practice, 14*(1), 30-45. https://doi.org/10.1057/dddmp.2012.20

6. Chaffey, D. & Ellis-Chadwick, F. (2019). *Digital Marketing: Strategy, Implementation and Practice* (7th ed)*.* Pearson.

7. Chen, Y. Y., Huang, H. L. (2016). Developing and Validating the Measurement Scale of e-Marketing Orientation. In Petruzzellis, L. & Winer, R. S. (Eds.). *Developments in Marketing Science: Proceedings of the Academy of Marketing Science* (pp. 215-226). Cham: Springer.

    https://doi.org/10.1007/978-3-319-29877-1_47

8. Churchill, G. A. (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research, 16*(1), 64-73. https://doi.org/10.1177/002224377901600110

9. Day, G. S. (1994). The Capabilities of Market-Driven Organizations. *Journal of Marketing, 58*(4), 37-52. https://doi.org/10.1177/002224299405800404

10. Deng, S. & Dart, J. (1994). Measuring market orientation: A multi-factor, multi-item approach. *Journal of Marketing Management, 10*(8), 725-742. https://doi.org/10.1080/0267257X.1994.9964318

11. Deshpandé, R., Farley, J. & Webster, F. (1993). Corporate Culture, Customer Orientation, and Innovativeness in Japanese Firms: A Quadrad Analysis. *Journal of Marketing, 57*(1), 23-37.

    https://doi.org/10.1177/002224299305700102

12. Deshpandé, R. & Farley, J. U. (1998). Measuring Market Orientation: Generalization and Synthesis. *Journal of Market-Focused Management, 2*(3), 213-232. https://doi.org/10.1023/A:1009719615327

13. Felton, A. P. (1959). Making the Marketing Concept Work. *Harvard Business Review, 37*(July/August), 55-65.

14. Gebhardt, G. F., Carpenter, G. S. & Sherry, J. F. (2006). Creating a market orientation: A longitudinal, multifirm, grounded analysis of cultural transformation. *Journal of Marketing, 70*, 37-55.

    https://doi.org/10.1509/jmkg.70.4.037

15. Gray, B., Matear, S., Boshoff, C. & Matheson, P. (2010). Developing a better measure of market orientation. *European Journal of Marketing, 32*(9/10), 884-903. https://doi.org/10.1108/03090569810232327

16. Grinstein, A. (2008). The Relationships between Market Orientation and Alternative Strategic Orientations. *European Journal of Marketing, 42*(1/2), 115-134.

    https://doi.org/10.1108/03090560810840934

17. Hair, J. F., Black, W. C., Babin, B. J. & Anderson, R. E. (2010). *Multivariate Data Analysis: A Global Perspective* (7th ed). Prentice Hall.

18. Hair Jr., J. F., Gabriel, M. L. D. S., da Silva, D. & Braga Junior, S. (2019). Development and validation of attitudes measurement scales: fundamental and practical aspects. *RAUSP Management Journal, 54*(4), 490-507. https://doi.org/10.1108/RAUSP-05-2019-0098

19. Harrison Walker, L. J. (2001). The measurement of a market orientation and its impact on business performance. *Journal of Quality Management, 6*, 139-172.

    https://doi.org/10.1016/S1084-8568(01)00035-9

20. Hartman, K. (2020). *Digital Marketing Analytics In Theory And In Practice* (2nd ed)*.* Ostmen Bennettsbridge Publishing Services.

21. Hoq, M. Z. & Che Ha, N. (2009). Innovativeness: Its Antecedents and Impact on SME Business Performance. *International Journal of Business and Management, 4*(11), 100-110. https://doi.org/10.2139/ssrn.1851425

22. Hurley, R. F. & Hult, G. T. M. (1998). Innovation, Market Orientation, and Organizational Learning: An Integration and Empirical Examination. *Journal of Marketing, 62*(3), 42-54. https://doi.org/10.1177/002224299806200303

23. Jaworski, B. J. & Kohli, A. K. (1996). Market orientation: Review, refinement, and roadmap. *Journal of Market-Focused Management, 1,* 119-135. https://doi.org/10.1007/BF00128686

24. Kohli, A. K. & Jaworski, B. J. (1990). Market Orientation: The Construct, Research Propositions, and Managerial Implications. *Journal of Marketing, 54*(2), 1-18. https://doi.org/10.1177/002224299005400201

25. Kohli, A. K., Jaworski, B. J. & Kumar, A. (1993). MARKOR: A Measure of Market Orientation. *Journal of Marketing Research, 30*(4), 467-477. https://doi.org/10.1177/002224379303000406

26. Kotler, P. (2000). *Marketing Management.* Prentice Hall.

27. Kotler, P. & Zaltman, G. (1971). Social Marketing: An Approach to Planned Social Change. *Journal of Marketing, 35*(July), 3-12. https://doi.org/10.1177/002224297103500302

28. Kotler, P., Wong, W., Saunders, J. & Armstrong, G. (2005). *Principles of Marketing: European Edition* (4th ed). Pearson Education Limited.

29. Mahmutović, K. (2018). Impact of e-marketing orientation on marketing performance: Case of European real estate brokerage industry. In Barković, D. et al. (Eds.), *Proceedings of the Interdisciplinary Management Research XIV* (pp. 1308-1332). Opatija: Josip Juraj Strossmayer University of Osijek, Faculty of Economics in Osijek Croatia; Postgraduate Doctoral Study Program in Management; Hochschule Pforzheim University; Croatian Academy of Sciences and Arts.

30. Mahmutović, K. (2020). From Google Analytics to digital marketing optimization in the hotel industry: proposal of framework and empirical evaluation of hotel industry in Croatia, Bosnia and Herzegovina and Serbia. In Šimurina, J. et al. (Eds.), *Proceedings of FEB Zagreb 11th International Odyssey Conference on Economics and Business* (pp. 828-843)*.* Zagreb: Faculty of Economics and Business.

31. Masa'deh, R., Al-Henzab, J., Tarhini, A. & Obeidat, B. Y. (2018). The associations among market orientation, technology orientation, entrepreneurial orientation and organizational performance. *Benchmarking: An International Journal, 25*(8), 3117-3142. https://doi.org/10.1108/BIJ-02-2017-0024

32. McCarthy, E. J. & Perreault Jr., W. D. (1984). *Basic Marketing* (8th ed). Irwin.

33. McKee, D. O., Varadarajan, R. & Vassar, J. (1990). A taxonomy of marketing planning styles. *Journal of the Academy of Marketing Sciences, 18*(2), 131-141. https://doi.org/10.1007/BF02726429

34. Narver, J. C. & Slater, S. F. (1990). The Effect of a Market Orientation on Business Profitability. *Journal of Marketing, 54*(4), 20-35. https://doi.org/10.1177/002224299005400403

35. Narver, J. C. & Slater, S. F. (1994). Market Orientation, Customer Value, and Superior Performance. *Business Horizons, 37*(2), 22-28. https://doi.org/10.1016/0007-6813(94)90029-9

36. Nunnally, J. C. (1978). *Psychometric Theory* (2nd ed). McGraw-Hill.

37. Nunnally, J. C. & Bernstein, I. (1994). *Psychometric Theory* (3rd ed). McGraw Hill.

38. Peattie, K. & Peters, L. (1997). The marketing mix in the third age of computing. *Marketing Intelligence & Planning, 15*(3), 142-150. https://doi.org/10.1108/02634509710165948

39. Peštek, A. (2009). *E-marketing strategije u industriji turizma u Bosni i Hercegovini* [Doctoral dissertation, University of Sarajevo]. University of Sarajevo, School of Economics and Business.

40. Pett, M. A., Lackey, N. R. & Sullivan, J. L. (2003). *Making Sense of Factor Analysis: The Use of Factor Analysis for Instrument Development in Health Care Research.* Sage Publications, Inc. https://doi.org/10.4135/9781412984898

41. Phillips, J. (2013). *Building a Digital Analytics Organization.* Pearson FT Press.

42. Porter, M. E. (1990). The Competitive Advantage of Nations. *Harvard Business Review, 68*(2), 73-93. https://doi.org/10.1007/978-1-349-11336-1

43. Pulendran, S., Speed, R. & Widing II, R. E. (2003). Marketing planning, market orientation and business performance. *European Journal of Marketing, 37*(3/4), 476-497.

https://doi.org/10.1108/03090560310459050

44. Ruekert, R. W. (1992). Developing a market orientation: an organizational strategy perspective. *International Journal of Research in Marketing, 9*(3), 225-245.

https://doi.org/10.1016/0167-8116(92)90019-H

45. Sampaio C. A. F., Hernández-Mogollón J. M. & Rodrigues R. G. (2019). Market Orientation and Hotel Industry: Developing a Measurement Model. In Machado, J. et al. (Eds). *Innovation, Engineering and Entrepreneurship* (pp. 1058-1065). Cham: Springer. https://doi.org/10.1007/978-3-319-91334-6_146

46. Shaltoni, A. M. (2006). e-Marketing Adoption in Organizations. In Zappala, S. & Gray, C. (Eds.), *Impact of e-Commerce on Consumers and Small Firms* (pp. 129-138). Ashgate Publishing Ltd.

47. Shaltoni, A. M. & West, D. C. (2010). The measurement of e-marketing orientation (EMO) in business-to-business markets. *Industrial Marketing Management, 39*(7), 1097-1102.

https://doi.org/10.1016/j.indmarman.2009.06.011

48. Smith, P. (2020). *SOSTAC: Guide to your Perfect Digital Marketing Plan*. Kindle edition. Amazon.

49. Tsiotsou, R. H. & Vlachopoulou, M. (2009). E-marketing Orientation: Conceptualization and Scale Development. In *Proceedings of the 2nd Biennial International Conference on Services Marketing* (pp. 580-590).

50. Van Egeren, M. & O'Connor, S. (1998). Drivers of market orientation and performance in service firms. *Journal of Services Marketing, 12*(1), 39-58. https://doi.org/10.1108/08876049810202357