The impact of social media technologies on organization cultural intelligence and new product development in international markets

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Abstract

Purpose – The study examines the role of social media technologies as a driver of organization cultural intelligence and new product development capabilities, and how the complementary effects of these capabilities contribute to multinational corporations' (MNCs) performance. Further, the study investigates the capabilities-performance relationship under conditions of high and low market and technological turbulence.

Design/methodology/approach – A quantitative survey method was implemented, with the data provided by senior marketing managers employed in MNC regional offices. The proposed model was tested using structural equation modelling and multi-group moderation analysis.

Findings – The results indicate that social media technologies support the development of organization cultural intelligence and new product development capabilities, which in turn contribute to MNC regional performance. A high level of technological turbulence only weakens the relationship between organization cultural intelligence and performance.

Research limitations/implications – The results suggest that organization cultural intelligence contributes to MNCs' performance, by deploying social media information and complementing the organization's new product development capability under a specific environmental context.

Practical implications – The paper offers practical recommendations to MNCs on social media use when developing and launching new products in different regional markets. MNCs need to recruit culturally intelligent managers, who consider the level of market and technological turbulence when combining several types of capabilities.

Originality/value – Within the dynamic marketing capabilities literature, this is the first study to incorporate and reliably measure cultural intelligence capability. The research offers empirical evidence that organization cultural intelligence and new product development capabilities are necessary to achieve superior MNC performance, and depend on the level of market and technological turbulence.

Keywords New product development, Organization cultural intelligence, Social media technologies, Organization performance, Market turbulence, Technological turbulence

Paper type Research paper

1. Introduction

Multinational corporations (MNCs) need to possess a range of capabilities in order to achieve superior performance in their different regional markets. These organizations need to develop or update their processes to match the new environment and provide value to their foreign customers (Kachouie *et al.,* 2018; Purkayastha *et al.,* 2020). The market orientation and dynamic marketing capabilities views of the firm provide an explanation of MNCs' sustainable advantages and performance in foreign markets, characterized by diverse cultures, preferences and needs (Kohli and Jaworski, 1990; Narver and Slater, 1990; Teece *et al.,* 1997). An organization's ability to manage cross-cultural interactions, and integrate knowledge in developing new products that create value to foreign customers, represents a source of competitive advantage (Ang and Inkpen, 2008; Sheng *et al.,* 2015). These capabilities rely on the information processed and analyzed by MNCs' resources and market-based assets (Srivastava *et al.,* 2001). Social media resources represent an opportunity to collect and create new knowledge through engagement activities and data analytics (Muninger *et al.,* 2019; Shirazi *et al.,* 2021; Tafesse and Wien, 2018). For example, Nike used its intercultural and social media capabilities to source market research and market intelligence, and to promote its successful Pro Hijab marketing campaign in Spring 2018, and the launch of its Victory swim collection in 2019 (Bahrainwala and O'Connor, 2019).

The marketing literature identifies new product development as a dynamic capability and a driver of MNC performance in international markets (Barrales-Molina *et al.,* 2014; Fang and Zou, 2009; Najafi-Tavani *et al.,* 2018). Dyson, an innovative household appliances manufacturer, has utilized its cultural competence and social media capabilities to develop and promote products, such as its bladeless fans and air purifiers, which satisfy the preferences of foreign customers who reside in countries with high levels of temperature and air pollution. This international marketing capability explains the MNC's ability to use available resources and develop and launch new products that meet customer needs in different countries (Morgan *et al.,* 2018; Sheng *et al.,* 2015; Subramaniam and Venkatraman, 2001). Earlier studies have suggested cultural and environmental turbulence as significant influencers on the relationships between these marketing capabilities and performance (Anning-Dorson, 2019; Eisend *et al.,* 2016; Murray and Chao, 2005; Samaha *et al.,* 2014). This study extends these previous views

and identifies organization cultural intelligence (OCI) as the organizational ability to manage cross-cultural interactions effectively, and complement the contribution of MNCs' new product development (NPD) capabilities to support international competitiveness (Ang and Inkpen, 2008; Katkalo *et al.,* 2010; Teece, 2007).

Product development related knowledge and collaboration with stakeholders are identified as resources that drive the development of new product development capabilities (Najafi-Tavani *et al.,* 2018; Wu *et al.,* 2020). Previous studies have suggested that the knowledge of customer needs, preferences and behaviors is essential for NPD success, and the timely collection and analysis of customer feedback is critical in supporting the NPD process (Song and Montoya-Weiss, 2001; Tang and Marinova, 2019). These customers are highly exposed to digital and social media platforms, and they use the online media for information search, evaluation of offerings and communication of their experiences (Bazi *et al.,* 2019; Stephen, 2016). Thus, social media technologies (SMT) represent an opportunity for the international marketing paradigm, and the integration of online platforms into MNCs' resources may contribute to the development of international marketing capabilities, such as NPD and OCI capabilities (Moorman and Day, 2016; Cheng and Krumwiede, 2018).

The competitive global environment and the collection of information from different geographical areas represent a double challenge for MNCs that operate in foreign markets (Day, 2011). The MNC's development and introduction of new products relies on its headquarters efficiently transferring, interpreting and applying subsidiaries' knowledge (Kogut and Zander, 2003; Sheng *et al.,* 2015). These challenges are augmented by rapid changes in consumer behaviors, technological disruptions and cross-cultural interactions. Therefore, this research focuses on the role of OCI capabilities as processes that complement NPD, to maximize MNCs' international performance. Given its global reach, social media supports MNC's faster and more frequent communications with international stakeholders; facilitates the acquisition of data from different foreign markets; and enhances the cross-cultural interactions (Abeza *et al.*, 2020; Okazaki and Taylor, 2013). Social media resources are important, to facilitate the development of MNC's culturally intelligent processes and new product development capabilities.

Previous literature has highlighted the positive relationship between marketing capabilities and organizations' performance (Barrales-Molina *et al.,* 2014; Kaleka and Morgan, 2017; Morgan *et al.,* 2018). However, more studies are needed to identify the drivers of international

marketing capabilities and analyze the complementary effects of these capabilities on organizations' performance in digital and social media marketing (Moorman and Day, 2016; Tan and Sousa, 2015). To bridge this gap, this study aims to: (1) examine the contribution of social media technologies on the development of organization cultural intelligence and new product development capabilities; (2) investigate the main and complementary effects of these capabilities on organization performance; and (3) understand the moderation effects of market and technological turbulence on capabilities-performance relationships.

This study makes three contributions to the literature of international marketing capabilities and MNC performance. First, it identifies organization cultural intelligence as a capability that complements MNCs' new product development in achieving superior international performance. Second, the study found that the strategic use of SMT contributes to the development of MNC's culturally intelligent processes and facilitates the development and launch of new products in different countries. Third, our study advances the knowledge on the moderating roles of market and technological turbulence, and found that a high level of market turbulence affects negatively the relationship between OCI and NPD capability. On the other hand, a high level of technological turbulence moderates the contribution of OCI capability to MNC performance, and does not influence the relationship between NPD capability and performance.

2. Theoretical background and hypotheses

Social media technologies

The evolution of a MNC is a result of the constant search for competitive advantage, and an organization's resources that are valuable, rare, inimitable, and non-substitutable explain the variation in organizational performance (Barney, 1991). Social media resources facilitate the timely acquisition of information due to prominent levels of interactions and engagements with MNC platforms (Nguyen *et al.,* 2015). The data analysis explains the social and cultural factors that affect consumers' needs and preferences (Stephen, 2016; Wang and Kim, 2017). Prior studies have used the technology acceptance model, resource-based view (RBV), and knowledge-based view theories to explore social media adoption and acquisition of information from these platforms (Nguyen *et al.,* 2015). This study focuses on the effective implementation of SMT as an enabler of dynamic marketing capabilities in international markets (Barrales-Molina *et al*., 2014; Tafesse and Wien, 2018). According to Teece *et al*. (1997), the implementation processes of recent technologies influence how related organizations'

capabilities achieve performance. Thus, this study defines the implementation of SMT as the MNE's process to use social media strategically by engaging stakeholders in a continuous relationship, and by generating insights for the development of marketing capabilities (Tafesse and Wien, 2018). Thus, the implementation of social media technologies is considered a market-based asset that is absorbed and leveraged by organizations' marketing capabilities to improve firms' performance (Srivastava *et al.,* 2001). Social media strategic implementation meets the requirement of a market-based asset since knowledge is generated and relationships are leveraged through marketing activities and analytics, which is difficult to imitate and valuable to the MNE organization (Srivastava *et al.,* 1998). The presence of social media market-based assets enables MNEs' organization to identify opportunities and inform the development of new capabilities to achieve performance in international markets (Barney, 1991; Foltean *et al.,* 2018; Muninger *et al.,* 2019).

Dynamic marketing capabilities

The dynamic capabilities view of the firm extends the RBV, and considers the effective deployment, combination, and reconfiguration of these resources in dynamic environments (Teece *et al.,* 1997). In great market transformation, an organizations' dynamic capabilities are essential for sensing, seizing opportunities, and reconfiguring the resources for achieving strategic advantage (Teece, 2007). In strategic marketing, Day (1994, p 37) defines capabilities as "*complex bundles of skills and collective learning, exercised through organizational processes, that ensure superior coordination of functional activities*." According to Fang and Zou (2009, p. 743), dynamic marketing capabilities are "*specific and idiosyncratic cross-functional business processes to create and deliver superior customer value in response to market changes."* These capabilities are considered a subset of dynamic capabilities and real dynamic marketing capabilities (DMC), since they are strongly affected by the marketing department and support organization's absorption of market knowledge (Barrales-Molina *et al.,* 2014; Bruni and Verona, 2009; Kachouie *et al.,* 2018).

New product development capability

NPD is a specific dynamic marketing capability, which refers to the development and introduction of new products through market knowledge acquisition, dissemination, and integration within other organizational capabilities (Barrales-Molina *et al.,* 2014; Sheng *et al.,* 2015; Subramaniam and Venkatraman, 2001). This capability is essential to satisfy customers' needs and preferences in international markets, and support the effective and efficient delivery

of superior value to target markets (Fang and Zou, 2009). NPD capability is enabled by market knowledge absorption and management from social media, collaborative networks and alliance (Barrales-Molina *et al.,* 2014; Najafi-Tavani *et al.,* 2018; Wu *et al.,* 2020). NPD is a real dynamic marketing capability supporting the MNEs to absorb, disseminate market knowledge and contribute to organisations performance (Barrales-Molina *et al.,* 2014; Bruni and Verona, 2009; Martin *et al.,* 2020; Murray and Chao, 2005).

Organization cultural intelligence

Cultural intelligence at the individual level refers to the capability of a person to function and manage effectively in multicultural settings (Earley and Ang, 2003). The concept is multidimensional and complements other types of intelligence, such as emotional or social intelligence in situations influenced by cultural diversity (Van Dyne *et al.,* 2012). Previous studies highlighted the link between cultural intelligence and global leadership, cross-cultural team management, international team performance, and expatriate adjustment (Lorenz *et al.,* 2018; Rockstuhl *et al.,* 2011). These studies advanced the conceptualization of cultural intelligence at the individual and group levels, and represent an opportunity for a further development of the construct at the organization level.

Ang and Inkpen (2008, p 338) define organization cultural intelligence as: *"form of organizational intelligence or firm-level capability in functioning effectively in culturally diverse situations."* The study draws on the individual culture intelligence concept (Earley and Ang, 2003) and resource-based view (Barney, 1991), to explain the three resource dimensions of OCI. First, top management cultural intelligence, since their attributes directly affect global strategy and performance. Second, competitive cultural intelligence, which explains the processes and routines that generate and integrate various knowledge assets. Third, structural cultural intelligence, which explains how a firm's formal and informal reporting structure and norms prevent fault lines, and foster an environment of mutual understanding with foreign stakeholders (Ang and Inkpen, 2008).

In this study, we define OCI as the organizational ability to understand and incorporate market cultural knowledge in processes and structural norms, to achieve performance in international markets. We argue that OCI complements market orientation and leads to deeper insights into foreign stakeholders, and in specific conditions OCI is considered a real dynamic marketing capability, since it assists MNEs to absorb and disseminate cultural market knowledge (Barrales-Molina *et al.,* 2014; Bruni and Verona, 2009; Kachouie *et al.,* 2018).

This research adopts the RBV (Barney, 1991) and its extension, the market-based asset (Srivastava *et al.,* 2001), to conceptualize SMT as a resource to acquire market and customer information through engagement activities and analytics. However, the use of social media technologies might not achieve performance unless MNCs build the capabilities that leverage and integrate SMT knowledge and reconfigure internal and external competencies to address the changes in international markets (Foltean *et al.,* 2018; Trainor *et al.* 2013). MNCs are using social media to communicate with their customers and generate market information. However, this usage might not explain how and why certain firms can achieve performance in rapidly changing environments (Barrales-Molina *et al.,* 2014; Teece *et al.,* 1997). Thus, MNCs need specific capabilities such as OCI and NPD to deploy the knowledge from social media technologies to create and deliver customer value.

Building on this theoretical background, the developed research model (Figure 1) posits that the implementation of SMT is associated with OCI and NPD capabilities, and these two sets of complementary capabilities influence MNCs' performance. However, this dimensional approach to capabilities explains the contribution of these capabilities in isolation from one another and limits our understanding on the specific conditions that capabilities, such as SMT, OCI or NPD may influence firm performance (Fiss, 2007; Greckhamer, 2016). A set-theoretic approach to capability configurations provides a better understanding of how all possible combinations of SMT, OCI and NPD produce higher performance rather than only their net effects on performance (Fiss, 2007; Greckhamer, 2011; Woodside, 2013). Thus, a configuration approach will complement the dimensional approach and the pre-determined relationships in answering the question of how several configurations of SMT, OCI and NPD contribute to performance (Woodside, 2013). Furthermore, this study investigates the moderating effects of market and technological turbulence on the relationships between both OCI, NPD capabilities and MNCs' performance.

INSERT FIG. 1 HERE

2.1 SMT, OCI and NPD capabilities

SMT provide an MNC with the opportunities to test, experiment, and enhance the strong ties with different stakeholders through active participation and strong capitalization on organizations' network experts and influencers (Muninger *et al.,* 2019). SMT facilitate

customer engagements and encourage conversations with culturally diversified consumers (Abeza et al., 2020; Hazzam and Wilkins, 2022). Thus, engagement activities offer a productive environment for cultural knowledge and a cross-cultural learning environment that enhances the organizations' competitive cultural intelligence (Ang and Inkpen, 2008; Moon, 2010). Hu *et al.* (2017) suggest that the use of informational and socializing social media enhances multicultural experiences, and the adequate flow of cultural knowledge and relationships' extension facilitates the development of cultural intelligence (Hu *et al.,* 2018). Also, social media analytics enable the tracking of progress and strategic adjustment in new cultural markets (Ang and Inkpen, 2008; Tafesse and Wien, 2018). Thus, SMT implementation enhances MNC's cultural knowledge and contributes to the development of culturally intelligent processes and routines through formalized strategy, engagement activities and data analytics (Ray, 2014; Tafesse and Wien, 2018; Yitmen, 2013). Therefore, this paper proposes:

H1. SMT is positively related to MNC organization cultural intelligence capability.

SMT could support the development of MNCs' new products since the generation and analysis of customer insights are in real-time, faster, and with a higher number of stakeholders (Rathore *et al.,* 2016). These interactive learning experiences and generation of up-to-date knowledge shorten decision making processes and support MNC's vigilant market learning and efficient product development through the amplification and quick sharing of customers' insights (Day, 2011; Garcia-Morales *et al.,* 2018). The strategic implementation of SMT engagement activities reach customers that are willing to participate in new product development, and data analysis of these interactions explains a faster response to changing environment through integration of market knowledge (Muninger *et al.,* 2019; Nguyen *et al.,* 2015).

Trainor *et al.* (2013) propose that the combination of SMT and an organization's cross functional systems facilitate the integration of customer information, and informs speedy effective responses to various needs and preferences. The accessibility and integration of customer insights into the MNC's new product development capability support a faster and innovative response to the dynamic changes in their environments (Murray and Chao, 2005; Wang and Kim, 2017). Thus, SMT contribute to the efficiency and speed of MNCs' cross-functional processes, improve the responsiveness of the organization to market changes, and contribute to the development of MNCs' new product development capabilities (Fang and Zou, 2009; Subramaniam, 2006). Therefore, it is proposed:

*H2***.** SMT is positively related to MNC new product development capability.

2.2. OCI, NPD and MNC performance

MNCs may efficiently manage resources and develop the processes that create value for international customers (Vorhies, 1998). However, external factors such as cultural distance could have a critical impact on the MNC's decision-making and performance (Kraus *et al.,* 2016). Cultural attributes are embedded in the MNC's cultural intelligent processes and routines, which highlight superior knowledge of international stakeholders, and facilitate the adaptation of marketing strategy to achieve higher performance in international markets (Ang and Inkpen, 2008; Magnusson *et al.,* 2013).

An MNC's cultural intelligence capabilities enhance the attainment of this cultural knowledge and drive the organization's superior performance (van Driel and Gabrenya, 2013). Furthermore, OCI capabilities create resource position barriers, and develop processes and routines that improve the connections with customers and suppliers in cross-cultural interactions (Ang and Inkpen, 2008; Moon, 2010; Yitmen, 2013). OCI supports MNCs' integration and reconfiguration of resources in cross-cultural environments and enhances the organization's ability to operate successfully in foreign markets (Moon, 2010). Therefore, it is proposed:

*H3***.** OCI capability is positively related to MNC performance.

MNCs' cross functional capabilities facilitate the integration of stakeholder knowledge and produce higher levels of learning and experiences (Brodie *et al.,* 2016). These dynamic marketing capabilities contribute to MNCs' performance in fast-changing environments, since it allows the organization to adjust, reconfigure, and deploy the required resources to stay synchronized with the external environment (Day, 2011). NPD capability outperforms industry forces and contributes to the MNC's performance through the effective deployment of tacit overseas knowledge, and the fast introduction of new products that have superior quality and lower costs (Murray and Chao, 2005; Subramaniam and Venkatraman, 2001). According to Fang and Zou (2009), NPD capabilities explain fast and efficient business processes that facilitate an organization's response to market changes, which positively influences the MNC's performance (Xu *et al.,* 2018). This dynamic marketing capability contributes to improved and more successful products, and relates significantly and positively to MNC's performance (Barrales-Molina *et al.,* 2014; Kaleka and Morgan, 2017; Tan and Sousa, 2015; Vicente *et al.,* 2015). Therefore, it is proposed:

H4. NPD capability is positively related to MNC performance.

Cultural differences explain barriers to cross-border knowledge transfer. This type of knowledge is not easily codified and culturally determined (Javidan *et al.,* 2005). Organization cultural intelligence emphasizes a constant update of the stakeholders' cultural knowledge that is relevant to the organization's operations (van Driel and Gabrenya, 2013). On the other hand, the organizations' development of high-quality relationships with foreign stakeholders is a central focus of marketing exchange. Cultural differences affect MNC relationships through different encoding and exploitation of social information (Samaha *et al.,* 2014). OCI improves MNCs' cross-cultural interactions with international stakeholders, which could positively influence the quality of relationships, and facilitate the sharing and exchange of cultural knowledge (Moon, 2010). These cross-cultural interactions enable culturally intelligent organizations to monitor and update their processes to match the changing environment (Ang and Inkpen, 2008). Therefore, the cross-cultural coordination mechanisms enhance MNCs' market knowledge, and the combination of partner resources within culturally intelligent processes supports the advancement of new product development capability (Barrales-Molina *et al.,* 2014; Fang and Zou, 2009; Moon, 2010).

H5. OCI capability is positively related to NPD capability.

2.3. Moderating effects of market turbulence

The MNC's environmental context impacts the relationship between their marketing capabilities and performance (Day, 1994; Guo *et al.,* 2018; Fang and Zou, 2009; Morgan *et al.,* 2012; Song *et al.,* 2005). Market turbulence refers to the rate of changes in customer's preferences (Jaworski and Kohli, 1993). OCI complements MNEs' market orientation and performs as a dynamic capability that facilitates the coordination, integration and reconfiguration of MNCs' resources to new cultural situations (Moon, 2010). On the other hand, NPD is a dynamic marketing capability, as the process is initiated in the marketing department through market knowledge acquisition, dissemination and integration within other organizational capabilities (Barrales-Molina *et al.,* 2014).

Fang and Zou (2009) argue that a high level of market turbulence improves the contribution of these capabilities to organization performance, and MNCs are frequently using their dynamic capabilities to endure competitiveness in turbulent environments (Wilden and Gudergan, 2014). High level market turbulence affects the organization's aim of innovating faster and more effectively, and the knowledge breadth embedded in culturally intelligent and NPD processes is deployed to meet the specific demands of the MNC's customers, and to deal with

market uncertainties (Ju *et al.,* 2018). These findings are confirmed by Su *et al.,* (2013), who found that a high level of market turbulence influences the marketing capabilities-performance association positively. Therefore, it is proposed:

H6. The relationship between OCI capabilities and organization performance is stronger when the level of market turbulence is high, than when it is low.

H7. The relationship between NPD capabilities and organization performance is stronger when the level of market turbulence is high, than when it is low.

2.4. Moderating effects of technological turbulence

Technology facilitates the structuring and conducting of NPD activities through the quick application of new knowledge, and technological turbulence explains the rate of technological change (Jaworski and Kohli, 1993; Song and Montoya-Weiss, 2001). The rapid changes in information technology and customer preferences have diminished MNC's generation and interpretation of new market information (Day, 2011). In high levels of technological turbulence, organizations need to adapt constantly to the frequent alterations of the environments and technological trends (Martin *et al.,* 2020). The dynamic marketing capability approach is susceptible to an implicit inside-out myopia, meaning that the mindful scanning activities mounted by the firm might lost sensitivity to weak signals in overly complex and volatile technological changes (Day, 2011). Further, dynamic marketing capabilities have a time lag, in response to high technological turbulence, and might not be sufficient to maintain high market performance (Day, 2011; Guo *et al.,* 2018). Thus, organization's marketing capabilities might not grow to mitigate the challenges of high technological turbulence due to outdated information and knowledge (Ju *et al.,* 2018; Murray and Chao, 2005). Previous studies confirm that high technological turbulence dampens the contribution of dynamic marketing capabilities, such as OCI and NPD, on MNC performance (Song *et al.,* 2005; Su *et al.,* 2013). Therefore, it is proposed:

H8. The relationship between OCI capabilities and organization performance is weaker when the level of technological turbulence is high, than when it is low.

H9. The relationship between NPD capabilities and organization performance is weaker when the level of technological turbulence is high, than when it is low.

3. Methodology

3.1. Sample and data collection

Regional marketing strategies are managed by MNCs' local offices, and are responsible for identifying new markets and products, and acting as the board of parent organizations (Dunning and Norman, 1983). In recent years, the United Arab Emirates (UAE) has achieved a continuous growth rate of foreign direct investment, and expatriates of more than 100 different nationalities represent 83% of the total population (Mina, 2014; Petersen *et al.,* 2015). The economic situation, the market attractiveness and the multicultural environment has supported MNCs' decisions to establish regional offices in the UAE to manage their local markets. The sampling frame was developed from the Dubai Chamber of Commerce and Industry database, which provides information about MNCs contact details and operation modes. The target population consists of 454 MNCs that operate in a range of different industries, and they have a representative office in Dubai managing all activities within a region.

First, the study key informants were selected and validated by searching the professional LinkedIn social network for regional marketing managers, or directors' profiles that highlight current employment. Second, the regional MNC offices were contacted by telephone to confirm the name of a regional marketing director or manager. Third, LinkedIn was accessed to connect and invite the marketing managers to participate in this study. Marketing managers receiving the invitation through the LinkedIn network could see the profile of the researcher, and social influence and reciprocity likely explain the decision of many of the managers to participate in the study (Chang *et al.,* 2017).

The survey link was sent to 434 MNC regional marketing directors/managers, and 167 usable responses were received after three reminders. The response rate of 38% is similar to other studies conducted in international marketing research (Guo *et al.,* 2018; Morgan *et al.,* 2009). We tested for possible nonresponse bias by comparing early and late respondents' differences across means of the main study constructs, following the recommendation of Armstrong and Overton (1977). The *t*-tests indicate that no significant differences exist between early and late respondents for the main study variables, and nonresponse bias is not a problem for the study data. Besides, we conducted a *t*-test on our nonrespondent versus respondent organizations using secondary data on industry type. The result ($t = 0.164$; $p > 0.05$) highlights that no differences was found indicating the lack of non-response bias in the sample (Rogelberg and Stanton, 2007). The study sample comprises of organizations from different industries, and of various sizes, in terms of number of employees (see Table I).

INSERT TABLE I HERE

3.2. Common method bias

In our study, the existence of common method bias was measured using Harman's single factor test and variance inflation factor. First, the common method bias exists if only one factor explains the majority of the covariance among the measures during the exploratory factor analysis with unrotated factor solutions (Podsakoff *et al.,* 2012). Second, the highest variance accounted for a single factor was 37.5% of the 80.3% explained variance. Besides, the correlations between constructs were below 0.90 (Table II), and the highest value of variance inflation factor was below the threshold of 3.3, which provides support that common method bias is not a problem in this study (Kock, 2015; Pavlou *et al.,* 2007).

INSERT TABLE II HERE

3.3. Measures

The concept of OCI explains the organization's capability to understand and incorporate the market cultural knowledge into organizations' processes and structural norms. We conceptualize and operationalize OCI as a three-factor second order construct following Ang and Inkpen's (2008) recommendation. The dimensions of OCI are managerial, competitive and structural cultural intelligence, and twenty-three items were used to measure organization cultural intelligence, and we employed exploratory and confirmatory factor analysis to assess the second order factor model, which we will discuss in the results section. Twelve items from Tafesse and Wien (2018) were deployed to capture the construct of social media technologies. The dimensions of social media technologies implementation are: (1) social media strategy, (2) social media engagement activities, and (3) social media analytics. A Likert-type seven-point scale was implemented to operationalize OCI capabilities and SMT ranging from (1) 'Strongly disagree' to (7) 'Strongly agree', with a mid-point label of 'Neither agree nor disagree'.

The international NPD capabilities items and scale were adapted from Sheng *et al.* (2015) and consist of five items that measure the MNC's capability of developing and introducing new products across multiple countries (Subramaniam and Venkatraman, 2001). A seven-point rating scale was employed to operationalize NPD capabilities ranging from (1) 'Much worse

than the competition' to (7) 'Much better than the competition', with a mid-point label of 'Same as the competition'. The organization's performance was measured using four items adapted from Guo *et al.* (2018), which explain market performance. The use of perceptual measures is consistent with previous studies in international marketing with managerial decisions and activities primarily driven by managerial perceptions of organization performance (Moorman and Day, 2016; Morgan *et al.,* 2012). A seven-point rating scale was employed to measure organization market performance ranging from (1) 'Far below the competitors' to (7) 'Far above the competitors' with a mid-point label of 'About the same as competitors'.

Market and technological turbulence were measured through the items adapted from Guo *et al.* (2018). Seven-point Likert scales were employed to measure these constructs ranging from (1) 'Strongly disagree' to (7) 'Strongly agree', with a mid-point label of 'Neither agree nor disagree'.

4. Results

4.1. Measurement model assessment

Exploratory factor analysis (EFA) was conducted using the SPSS software, to investigate the new second-order OCI and SMT constructs. The result for OCI explains that each of the measures loaded on their respective first-order factors (managerial, competitive and structural cultural intelligence). However, for the SMT construct, two items cross-loaded on social media strategy and engagement activities, and were removed from further analysis. The removal of the two items reveals the three first-order factors of social media strategy, social media engagement activities and social media analytics.

Next, three measurement models were estimated (see Table III) using maximum likelihood estimation and covariance matrix in AMOS. The confirmatory factor analysis (CFA) indicates how well the measured variables represent the research constructs (Anderson and Gerbing, 1988; Gallagher *et al.,* 2008). OCI is a new construct, and the first confirmatory factor analysis was performed on the 23 items that are suggested by Ang and Inkpen (2008) to measure the OCI capability. This construct is a second order factor, and this procedure is essential to validate the three factor structures identified by Ang and Inkpen (2008) to measure this capability. The significant chi-square ($\chi^2 = 438.519$; $df = 221$; $p < 0.000$) was expected given the sensitivity of this test to the sample size (Bagozzi and Yi, 1988). However, the other goodness of fit indices (Normed chi-squared [χ^2/df] = 1.98, Tucker-Lewis index [TLI] = 0.94,

comparative fit index [CFI] = 0.95, and root mean square error of approximation [RMSEA] = 0.077) indicate that the model fits the data adequately (Hair *et al.,* 2014).

The second measurement model consists of SMT second order factor and the three first order factors of social media strategy, social media engagement activities, and social media analytics. Despite a significant chi-square ($\chi^2 = 56.922$; $df = 32$; $p < 0.000$), the model exhibits satisfactory goodness of fit indices ($\chi^2/df = 1.779$; TLI = 0.98; CFI = 0.98; RMSEA = 0.068). The third measurement model consists of 5 items measuring the NPD capability; 4 items measuring the market turbulence; 4 items measuring the technological turbulence; and 4 items measuring the organization's performance. Despite a significant chi-square ($\chi^2 = 233.444$; $df = 107$; $p < 0.000$), the model exhibits satisfactory goodness of fit indices ($\chi^2/df = 2.172$; TLI = 0.94; CFI = 0.95; RMSEA = 0.084). Furthermore, the values of the standardized factor loading estimates were higher than 0.7 with statistical significance, and without any loadings above 1 or below -1. Table III shows a summary of the measurement model analysis.

INSERT TABLE III HERE

Convergent and discriminant validity were assessed. Convergent validity refers to the common shared variance between the indicators of the same construct, and discriminant validity evaluates the construct's divergence, and how it differs from others, while not measuring the same thing (Gallagher *et al.,* 2008). The values of the average variance extracted (AVE) were greater than 0.5 and construct reliability (CR) above 0.7 indicate convergent validity (Anderson and Gerbing, 1988) (see Table III). Discriminant validity is achieved if the AVE of any two constructs is higher than their squared correlation estimate. Table II shows that the square root of AVE of the study constructs, in the diagonal, is greater than their correlations below the diagonal line (Fornell and Larcker, 1981). The research constructs achieve discriminant validity.

This analysis was followed by conducting a CFA combining measures of SMT, OCI and NPD capabilities in one model. This process is important to demonstrate the convergent and discriminant validity of SMT and organizational capabilities measures. We follow the suggestion of Hau and Marsh (2004) using item parcels when the sample size is small, and the number of estimated parameters is large. Thus, the latent variables named OCI capability and SMT were measured by the parcel items of their dimensions. The model exhibits satisfactory

goodness of fit indices (χ^2/df = 1.959; TLI = 0.96; CFI = 0.97; RMSEA = 0.076). Table IV confirms the convergent and discriminant validity of the measures (Anderson and Gerbing, 1988; Fornell and Larcker, 1981).

INSERT TABLE IV HERE

4.2. Structural model and moderation analysis

To test the hypothesized paths, OCI capability and SMT were treated a second-order latent factor constructs linking to their three first-order latent factors. NPD capability, market turbulence, technological turbulence and organization performance were treated as first-order latent constructs. The chi-square test and goodness of fit indices (χ^2 = 1327.730, df = 800, p = 0.000; TLI = 0.92; CFI = 0.93; RMSEA = 0.063) indicate that the structural model fits the data adequately (see Table V).

INSERT TABLE V HERE

As shown in Table V, the empirical tests of the key relationships predicted in our theoretical model support H1, H2, H3 and H4, and reject H5. The findings of path analysis indicate that social media technologies relate positively and significantly to OCI capability (β = 0.54, p < 0.001) and NPD capability (β = 0.28, p < 0.01), supporting *H1* and *H2*. The results show that OCI capability relates positively and significantly to organization performance, supporting *H3* (β = 0.53, p < 0.001). The relationship between NPD capability and organization performance indicates a significant and positive loading path, supporting *H4* (β = 0.40, p < 0.001). Regarding *H5*, the relationship between OCI and NPD capabilities was not significant (β = -0.14, p = 0.146) warranting further investigation of the relationship between OCI capability and NPD capability under low and high level of market and technological turbulence.

To test the hypothesized relationships *H6*, *H7*, *H8* and *H9*, the structural model was re-estimated by splitting the sample at the median levels of market and technological turbulence (Martin *et al.,* 2020). This procedure is followed by a multi-group path analysis, which is suitable for testing the study hypotheses by comparing specific path parameters across the two groups of high and low market and technological turbulence (Stephenson *et al.,* 2006). First, we tested for general moderating effects using the Chi-square difference test, by restricting all the paths in one model, while in the other they were unconstrained (Walsh *et al.,* 2008). The

results indicate that market turbulence ($\Delta\chi^2$ = 56.776 (*df* = 43), *p* = < 0.1) and technological turbulence ($\Delta\chi^2$ = 78.139 (*df* = 43), *p* = < 0.01) are general moderators of the model. However, as shown in Table VI, the Chi-square difference test when constraining and unconstraining the two specific links between OCI capability and organization performance, NPD capability and organization performance under low and high level of market turbulence are not significant. Thus, *H6* and *H7* were rejected. This result was followed by the analysis of interactions showing that the interactions term of OCI and market turbulence (β = 0.02, *p* > 0.05) and NPD capability and market turbulence (β = 0.10, *p* > 0.05) were not significant.

On the other hand, the Chi-square difference test ($\Delta\chi^2$ = 5.3 (*df* = 1), *p* = < 0.05) was significant when comparing a constrained and unconstrained model of the link between OCI capability and organization performance under low and high levels of technological turbulence. The multi-group path analysis indicates that the relationship between OCI capability and organization performance is positive and significant, and this relationship is weaker under a high level of technological turbulence (β = 0.426, *p* < 0.001), than when it is low (β = 0.516, *p* < 0.001). Thus, *H8* was supported. Finally, the Chi-square difference test was not significant when we compared a constrained and unconstrained model for the relationship between NPD capability and organization performance under low and high levels of technological turbulence (see Table VI). Therefore, *H9* was rejected. This result was followed by the analysis of interactions showing that the interactions term of OCI and technological turbulence (β = -0.18, *p* < 0.05) was significant and NPD capability and technological turbulence (β = -0.06, *p* > 0.05) was not significant.

INSERT TABLE VI HERE

4.3. Fuzzy-set qualitative comparative analysis

The test of hypotheses using structural equation modelling was followed by the configurational approach that allows the investigation of how the capabilities combine to create the outcome (Fiss, 2007). This method differs from linear regression analysis that focuses on the unique contribution of a variable while all other values remain constant. Thus, configurational approach explains under what specific conditions a variable influences the outcome (Fiss, 2007). The study follows the recommendations of Greckhamer *et al.* (2018) performing qualitative comparative analysis and using fsQCA software to conduct the analysis (Ragin, 2008). First, we transform the data into fuzzy sets by calibrating the Likert-type seven-point

scales and setting the original values of 7, 1 and 4 to match to the full membership, full non-membership, and the cross-over point. Second, we construct the truth table by specifying the frequency threshold as 7 retaining more than 80% of the cases, and > 0.8 for raw consistency (Greckhamer *et al.,* 2018; Ragin, 2008). Table VII and Table VIII summarise all possible configurations of capabilities predicting high and low performance.

The construction of a truth table was followed by the analysis of necessary and sufficient conditions. XY plots were used to evaluate necessary conditions of capabilities, and the results highlight that none of the variables meet the requirement of necessary conditions. None of the single conditions or combinations achieved both consistency and coverage greater than 0.9 (Ragin, 2008). Table IX displays three configurations of capabilities that explain the performance and one combination for the absence of performance achieving consistency > 0.8 and coverage > 0.2 (Greckhamer *et al.,* 2018; Ragin, 2008). Table IX shows that the combination of SMT and OCI capability denoted SMT*OCI, and the combination of SMT and NPD capability denoted SMT*NPD, and the combination of OCI and NPD capabilities denoted OCI*NPD generate high level of performance. On the other hand, the configuration ~SMT*OCI~NPD explains that in the absence of SMT and NPD capability, the presence of OCI generates low level of performance.

INSERT TABLE VII HERE

INSERT TABLE VIII HERE

INSERT TABLE IX HERE

The construction of a truth table and the analysis of configurations was followed by sensitivity analysis and evaluation of the robustness of our findings (Greckhamer *et al.,* 2018). First, we changed the fuzzy-set calibrations to the 90th percentile for full membership, the median as a cross-over, and the 10th percentile as the thresholds for full non-membership (Greckhamer, 2016). Table X and Table XI summarise all possible configurations of capabilities predicting high and low performance. The frequency threshold was 9 retaining more than 80% of the cases, and > 0.8 for raw consistency (Greckhamer *et al.,* 2018; Ragin, 2008). Table XII reveals that the two configurations SMT*OCI and SMT*NPD that are equivalent to the first and

second original solutions in Table IX are sufficient to achieve performance. However, the configurations' raw coverage and consistency were lower than the original solutions, and the overall solution coverage and consistency were reduced from 0.951 to 0.820 and from 0.889 to 0.802, respectively. Further, Table XII explains that the two configurations ~SMT*OCI~NPD and SMT*~OCI*NPD generate low performance.

INSERT TABLE X HERE

INSERT TABLE XI HERE

INSERT TABLE XII HERE

We followed this analysis by evaluating the sensitivity of calibration to anchors using the 80th and 20th percentiles as thresholds for full membership and full non-membership. Table XIII and Table XIV summarise all possible configurations of capabilities predicting high and low performance. Table XV explains the same result as in Table IX for configurations achieving higher performance. However, the configurations' raw coverage and consistency were lower than the original solutions, and the overall solution coverage and consistency were reduced from 0.951 to 0.874 and from 0.889 to 0.761, respectively. Further, Table XV explains that the two configurations ~SMT*OCI~NPD and SMT*~OCI*NPD generate low performance. The results from our sensitivity analysis suggest that the configurations SMT*OCI and SMT*NPD are stable and robust in achieving higher performance, and the configuration ~SMT*OCI~NPD is stable and robust in generating low performance. However, the results of the configurations OCI*NPD achieving high performance, and SMT*~OCI*NPD generating low performance need further research and investigation to confirm their contributions to performance.

INSERT TABLE XIII HERE

INSERT TABLE XIV HERE

INSERT TABLE XV HERE

4.4. Post-hoc analysis

The analysis of hypothesized moderation paths was followed by a post-hoc analysis investigating the moderation effects of market and technological turbulence on: (1) the relationship between OCI and NPD capabilities; and (2) the relationships between SMT and the two capabilities (see Table XVI). This study hypothesized a positive and significant relationship between OCI capability and NPD capability. However, the path analysis did not support this hypothesis. Thus, we investigate further this relationship under low and high levels of market turbulence (see Table XVI). The Chi-square difference test ($\Delta\chi^2 = 5.0$ ($df = 1$), $p = < 0.05$) was significant when comparing a constrained and unconstrained model of the link between these capabilities, and the results of path analysis explain that the relationship between OCI and NPD capabilities is not significant when the level of market turbulence is low ($\beta = 0.064$, $p = 0.653$) compared to a significant and negative relationship when the level of market turbulence is high ($\beta = - 0.369$, $p < 0.05$). On the other hand, we found that the relationship between SMT and OCI capability ($\Delta\chi^2 = 7.7$ ($df = 1$), $p = < 0.01$) and the relationship between SMT and NPD capability ($\Delta\chi^2 = 5.3$ ($df = 1$), $p = < 0.05$) are moderated by the level of technological turbulence. However, these relationships were not moderated by the level of market turbulence.

The multi-group path analysis indicates that the relationship between SMT and OCI capability is positive and significant, and this relationship is stronger under a high level of technological turbulence ($\beta = 0.601$, $p < 0.001$), than when it is low ($\beta = 0.332$, $p < 0.05$). On the other hand, the relationship between SMT and NPD capability was positive and significant under a low level of technological turbulence ($\beta = 0.390$, $p < 0.01$) and non-significant under a high level of technological turbulence ($\beta = 0.238$, $p = 0.115$). In addition, mediation analysis using the bootstrap method was carried out to analyze the direct and indirect standardized path estimates and the significance levels between SMT and organization performance, and between SMT and NPD capability (Cheung and Lau, 2007). The results reveal that there is a significant and positive indirect relationship ($\beta = 0.37$, $p < 0.05$) between SMT and organization performance, and this relationship is fully mediated by OCI and NPD capabilities. On the other hand, the mediation analysis explains that the indirect relationship between SMT and NPD capabilities was not significant ($\beta = -0.04$, $p > 0.05$), and not mediated by OCI capability.

INSERT TABLE XVI HERE
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5. Discussion

This study contributes to the international and dynamic marketing capabilities literature by identifying OCI as an organizational capability that combines with social media technologies and complements MNC's NPD capability to achieve superior performance in international markets. However, these relationships are influenced by the level of market and technological turbulence. The finding highlights the importance of social media platforms in today's marketing environments. These platforms provide MNCs the ability to engage and develop relationships with their customers. Besides, the analysis of these interactions enriches MNCs' ability to develop the capabilities supporting firm performance in international markets. The result of fuzzy qualitative comparative analysis provides additional support to the complementary effects of capabilities. SMT combines with OCI and NPD capabilities to achieve higher performance, and the configuration of OCI and NPD capabilities contributes to higher organizational performance. On the other hand, the result explains that OCI capability might not relate to performance in the absence of SMT and NPD capability.

Social media technologies contribute to the development of OCI and NPD capabilities under all levels of market turbulence. This contribution is significantly stronger for OCI capability and not significant for NPD capability under high levels of technological turbulence. The findings indicate that OCI and NPD capabilities contribute to performance under all levels of market turbulence. However, a high level of technological turbulence weakens significantly the OCI-performance relationship, but not the contribution of NPD capability to performance. Also, this study finds that the relationship between OCI and NPD capabilities is moderated by the level of market turbulence and becomes negative under high levels of such turbulence. As a result, this research provides five contributions to international marketing knowledge and understanding.

Theoretical implications

First, the study identifies OCI as a specific capability that embed the cultural values of foreign stakeholders, complement the MNC's NPD capability to introduce new products efficiently and perform successfully in international markets. The processes of these culturally intelligent organizations are reconfigured as per the dynamic of the environment, facilitate the

development of information sharing strategies, and combine with NPD capabilities to enhance MNCs' performance (Moon, 2010; Sheng *et al.,* 2015; Subramaniam and Venkatraman, 2001). This finding empirically supports the dynamic capabilities assumptions which explain the complementary combinations of capabilities and the use of new knowledge and well-known learning mechanisms for the evolution and production of adaptable outcomes. (Eisenhardt and Martin, 2000; Menguc and Auh, 2006; Morgan *et al.,* 2009).

Second, the configurational theorizing highlights the combination effects of SMT, OCI and NPD capabilities on performance, and explains that OCI capability might produce lower performance in the absence of SMT and NPD capabilities. This result implies that the set-theoretic approach to marketing capabilities provides evidence on the equifinality of different profiles and attributes that may achieve successful performance (Fiss, 2007; Greckhamer, 2011). The configurational approach extends the dimensional conceptualization of capabilities by providing several alternatives and combinations of SMT, OCI and NPD resulting in the achievement of high performance (Woodside, 2013). The dimensional approach provides insights on how these capabilities relate to performance in isolation; however, the configurational approach confirmed that the performance of one dynamic capability depends on the presence of others to achieve successful results. Overall, the findings of the fsQCA analysis explain that SMT, OCI and NPD capabilities combine into distinct configurations to produce performance supporting conjunctural causation. The multiple configurations of SMT, OCI and NPD capabilities are linked to performance supporting equifinality, and the presence of OCI in the absence of SMT and NPD capabilities might not connect to performance supporting asymmetry (Misangyi *et al.,* 2017).

Third, the results show that social media technologies relate positively and significantly to OCI and NPD capabilities. The online social platforms have the ability to develop conversations with several stakeholders, and the insights generated from these interactions are used to better serve the stakeholders' needs (Wang and Kim, 2017). Social media technologies enable an organization to act on new business opportunities, by acquiring and disseminating external stakeholders' knowledge (Garcia-Morales *et al.,* 2018). Besides, the knowledge acquired from these platforms and the accumulation of experiences suggests strategic capabilities for growth in dynamic markets (Nguyen *et al.,* 2015). This finding confirms the premises of the resource-based (Barney, 1991), market-based assets (Srivastava *et al.,* 2001), and dynamic capabilities (Teece *et al.,* 1997) theories by explaining that the strategic use of social media resources predicts the development of dynamic marketing capabilities such as OCI and NPD. However,

the contribution of SMT resources on capabilities is contextual and depends on the level of technological turbulence. While SMT enhance the culturally oriented firm processes and routines under a high level of technological turbulence, this improvement is not significant for NPD capability. We argue that NPD is often a risky and costly process, and MNEs' might not develop the absorptive capacity or technological capabilities that effectively integrate knowledge acquired from social media technologies under a high level of technological turbulence (Murray and Chao, 2005; Najafi-Tavani *et al.,* 2018).

Fourth, the results indicate that the relationship between OCI and NPD is not significant and turns negative under a high level of market turbulence. This result is consistent with the argument of Zeng *et al.* (2013), who propose that an MNC's experiences in distinct cultures may not secure the organization's success in new foreign markets. It is necessary for these organizations to establish new processes and mechanisms to update and correct previous knowledge before it is applied in new markets. In addition, these capabilities might have a detrimental effect due to learning errors, lack of data analytics, and technological capabilities that support quick experimentation in fast-changing markets (Day, 2011).

Fifth, the results add to the dynamic capabilities by investigating the contribution of OCI and NPD capabilities on MNCs' performance under different levels of market and technological turbulence. The findings reveal that the impact of these capabilities on performance is not moderated by the level of market turbulence. This result is consistent with the theoretical view of Day (2011), who argued a positive contribution of dynamic marketing capabilities on performance in fast changing environments, by adjusting, reconfiguring and deploying the required resources to stay synchronized with the external environment (Teece *et al.,* 1997). On the other hand, this result contradicts the findings of previous studies that have found a positive moderation of market turbulence on the capabilities-performance relationship (Fang and Zou, 2009; Kaleka and Morgan, 2017), and the argument of Murray and Chao (2005), who proposed a weaker capabilities-performance relationship under high levels of market turbulence. This could be related to the conceptualization of dynamic marketing capabilities and the performance measures used in different studies.

The findings reveal that technological turbulence weakens the relationship between OCI capability and performance. The result is in line with the studies of Song *et al.* (2005) and Su *et al.* (2013), which found a negative moderation effect of technological turbulence on the capabilities-performance relationship. Thus, marketing capabilities might not be sufficient in

high technological turbulence, and the presence of MNCs' technological capabilities is essential to offset the fast technological changes and support organization performance (Song *et al.,* 2005; Su *et al.,* 2013). However, the relationship between NPD capability and performance was not moderated by the level of technological turbulence. This result suggests that specific dynamic marketing capabilities are important in today's general market environments, characterized by continuous technological disruptions.

Finally, the findings of the study extend the work of Ang and Inkpen (2008), which provided a theoretical conceptualization of cultural intelligence at the organization level, and defined it as a form of organizational intelligence necessary to achieve performance in international markets. The suggested OCI dimensions and scale were valid and reliable, and the empirical analysis confirmed that culturally intelligent organizations develop, manage, and enhance their processes for successful performance in international markets. The findings of this research extend the previous stream of studies that found positive relationships between individual or group cultural intelligence and cross-border performance (Ang *et al.,* 2007; Rockstuhl *et al.,* 2011).

Managerial implications

The study provides several implications for marketing practitioners in international markets. First, marketing managers are encouraged to use social media platforms strategically by engaging, collaborating and analyzing stakeholder's interactions to develop new products or processes that embed their stakeholders needs, preferences and cultural knowledge in foreign markets. Customers are more willing to suggest feedback and recommendations if they perceive MNCs' social media platforms as interactive and responsive (Bozkurt *et al.,* 2020). This new knowledge enhances MNCs' managers' awareness in cross-cultural interactions and enables the firm to introduce products that meet the requirements of foreign stakeholders (Ang and Inkpen, 2008; Sheng *et al.,* 2015).

Second, the results suggest that managers must build a portfolio of capabilities and enhance the organization's readiness to work with new contingencies, such as, the rapid changes in customers' preferences and technologies (Day, 2011; Morgan *et al.,* 2012). Foreign markets are turbulent by nature, and MNCs are required to train their managers on the cultural values, legal and economies of foreign markets. This knowledge will support marketing managers to design culturally appropriate governance mechanisms, and develop information sharing strategies with their stakeholders, contributing to market performance (Moon, 2010). On the

other hand, managers must build the capability to frequently introduce new products that meet the requirements of international markets for sustainable performance (Fang and Zou, 2009; Vicente *et al.,* 2015).

Third, marketing practitioners must be aware of the detrimental effect of OCI capability on NPD capability under a high level of market turbulence. Managers are required to adapt their culturally intelligent processes and structures to be decentralized and flexible, to disseminate the new market and customers' preferences (Sheng *et al.,* 2015). This can be achieved through frequent interactions with different stakeholders and an open marketing system (Day, 2011).

Fourth, the findings of the fsQCA provide new directions for management decision-making on marketing capabilities development and investment (Day, 2011; Moorman and Day, 2016). The result of SMT, OCI and NPD configurations explains that managers may invest in two capabilities and achieve successful results. This is important when organizations are facing resource constraints. Further, the results imply that one capability, such as OCI, may not produce performance in the absence of SMT and NPD (Morgan *et al.,* 2012). Thus, managers should consider the presence or absence of a capability affecting other capabilities in multiple configurations to produce performance (Misangyi *et al.,* 2017; Sheng *et al.,* 2015).

Finally, the valid and reliable measurement scale of organization cultural intelligence is beneficial for managers to diagnose how their processes embed the stakeholders' cultural values (Ang and Inkpen, 2008; Moon, 2010). MNCs might tailor training programs to elevate their managers' cultural intelligence, or provide short assignments in international markets before promoting their managers to full responsibility in culturally dissimilar markets.

6. Limitations and future research directions

The first limitation of this study is the cross-sectional nature of survey data collection, which presents a challenge to generalize the causal directions between the resources, capabilities, and organization performance. Dynamic marketing capabilities develop over time and their measurement with cross-sectional surveys explains a snapshot of their current conditions. Thus, we establish associations between capabilities and performance and not cause and effect. The directions of the relationships and the development of these capabilities could be validated and tested with longitudinal studies. Second, the study investigated the associations between one type of resource, two types of capabilities and MNCs' performance. The estimation and relationships between capabilities and performance might be affected by other observed and non-observed variables that confound the result, such as, company strategy or other resources.

Thus, the claim of cause and effect with cross-sectional survey data is limited (Antonakis *et al.,* 2010). Future studies might use experimental design and explore other resources, such as, absorptive capacity or other types of capabilities, for example, technological or information processing capabilities.

Third, the data was generated from the regional offices of MNCs operating in the Middle East and Gulf regions, in particular the emirate of Dubai. Therefore, the interpretation of the results might be cautiously generalized to other countries, contexts and types of organization internationalization. Besides, the data was collected from a single key informant which might not explain the reality of the overall organization. Thus, future studies might validate this result with secondary data or archival records and recruit several respondents from each organization.

Fourth, the study measures organizational performance using the effectiveness dimension only. This might not contrast the overall performance of the MNCs. Future studies might include efficient or adaptiveness dimensions, or use secondary data to validate the influence of marketing capabilities on organizational performance.

Fifth, we adapted Ang and Inkpen's (2008) conceptualization of OCI as managerial, competitive and structural MNCs' cultural intelligence. Future research might conceptualize OCI, including processes, positions and paths capabilities, and validate the measurement scale of organization cultural intelligence (Moon, 2010). Also, future studies might explore the influence of OCI on performance when MNCs operate in foreign countries with various levels of cultural distance.

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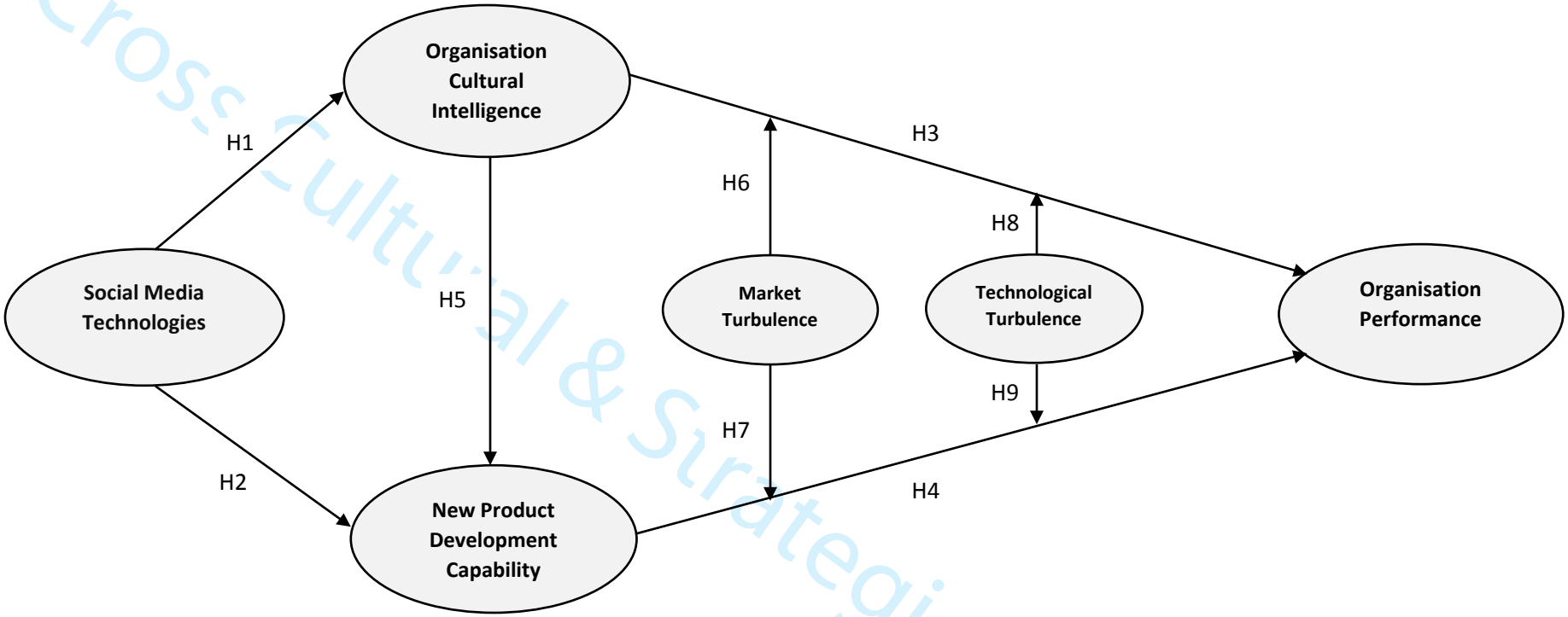

Figure 1. Proposed conceptual model

Table I. Organization profiles

Characteristic	Variation	Count	(%)
Organization time in the region	Less than 3 years	12	7.2
	Between 3 and 5 years	23	13.8
	Over 5 years	132	79
Organization size	Less than 100 employees	29	17.4
	Between 100 and 499 employees	55	32.9
	Between 500 and 999 employees	39	23.4
	1000 or more employees	44	26.3
Organization headquarters location	Europe	70	41.9
	Americas	64	38.3
	Asia	33	19.8
Industry sector	Retail	15	9.0
	Media and communication	8	4.8
	Food and beverage	13	7.8
	Manufacturing	10	6.0
	Technology	24	14.4
	Insurance	3	1.8
	Healthcare	11	6.6
	Bank and finance	6	3.6
	Transportation and logistics	14	8.4
	Oil and gas	9	5.4
	Construction	8	4.8
	Education	11	6.6
	Hospitality	19	11.4
	Others	16	9.6
Respondents' job title	Regional marketing manager	111	66.5
	Marketing director	56	33.5

Table II. Descriptive and internal consistency of measures

	M	SD	1	2	3	4	5	6	7	8	9	10
1. Managerial Cultural Intelligence	5.44	1.09	**0.83**									
2. Competitive Cultural Intelligence	5.76	1.08	0.56**	**0.85**								
3. Structural Cultural Intelligence	5.55	1.28	0.63**	0.77**	**0.92**							
4. Social Media Strategy	5.51	1.21	0.38**	0.43**	0.45**	**0.91**						
5. Social Media Engagement Activities	5.39	1.18	0.36**	0.38**	0.47**	0.83**	**0.83**					
6. Social Media Analytics	5.47	1.36	0.32**	0.37**	0.42**	0.78**	0.83**	**0.93**				
7. New Product Development Capability	5.26	1.06	0.04	0.02	0.01	0.11	0.23**	0.23**	**0.85**			
8. Market Turbulence	5.16	1.25	0.32**	0.18*	0.32**	0.25**	0.30**	0.26**	0.01	**0.88**		
9. Technological Turbulence	5.58	1.12	0.25**	0.38**	0.48**	0.33**	0.27**	0.30**	-0.00	0.55**	**0.87**	
10. Organization Performance	5.27	1.06	0.35**	0.39**	0.44**	0.24**	0.33**	0.29**	0.39**	0.27**	0.30**	**0.85**

*$p < 0.05$ (two-tailed test); ** $p < 0.01$ (two-tailed test)
Squared root of Average variance extracted is in bold on the diagonal

Table III. Measurement models and measures.

Factors and Items	Mean	SD	Standardized loading	*t*-value
Measurement model 1: Organization Cultural Intelligence Capability				
Managerial cultural intelligence (CR = 0.92, AVE = 0.68)			.70	8.16
Key leaders are confident they can work with business stakeholders from different cultures	5.66	1.274	.82	13.54
Key leaders are confident in dealing with the stresses of working with business stakeholders from unfamiliar cultures	5.54	1.274	.83	13.82
Key leaders know the cultural values of other	5.46	1.250	.87	14.92
Key leaders know the economies of other cultures	5.48	1.171	.77	12.27
Key leaders know the legal systems of other cultures	5.04	1.204	.77	12.30
Key leaders are multilingual	5.19	1.230	.73	11.28
Key leaders are aware of cultural differences when in cross-cultural interactions	5.51	1.344	.88	15.39
Key leaders modify their verbal behavior (words, tone, style) when in cross-cultural interactions	5.59	1.367	.85	22.02
Key leaders modify their nonverbal behavior (gestures, time, and space orientation) when in cross-cultural interactions	5.53	1.422	.85[a]	-
Competitive cultural intelligence (CR = 0.94, AVE = 0.72)			.83	8.88
Our firm values its regional public reputation	6.17	1.167	.90	14.33
Our firm has a process to evaluate the competitive risks of regional markets	5.63	1.248	.82	12.57
Our firm is able to assess the cultural compatibility of regional stakeholders	5.56	1.062	.75	11.02
Our firm understands that factors such as data and privacy must be evaluated in selecting regional stakeholders	5.94	1.316	.90	14.35
Our firm has a process to evaluate the proposed financial plan of regional offices	5.80	1.264	.83	12.74
Our firm has a process to evaluate the actual financial performance of regional offices	5.97	1.351	.89	14.16
Our firm has a process to evaluate the non-financial performance of regional offices	5.57	1.258	.86	13.33
Our firm has legal mechanisms to manage risks associated with proprietary firm knowledge	5.79	1.303	.88	13.84
Our firm has a system to exit from regional ventures with minimal business disruptions	5.45	1.226	.80[a]	-
Structural cultural intelligence (CR = 0.95, AVE = 0.83)			.95[a]	-
Our firm understands the expectations of our external regional business stakeholders	5.61	1.321	.88[a]	-
Our firm knows how to resolve cultural differences with our external regional business stakeholders	5.43	1.315	.89	17.36
Our firm knows how to develop culturally appropriate standard operating procedures with our external regional business stakeholders	5.59	1.406	.95	20.45
Our firm knows how to design culturally appropriate governance mechanisms to ensure high performance across the operating region	5.55	1.455	.91	18.31
Our firm knows how to develop information sharing strategies with our external regional business stakeholders.	5.61	1.383	.90	17.64
Goodness-of-Fit Statistics:				
χ^2 (*df.*) = 438.519 (221), $\chi^2/df.$ = 1.98, $p < .001$; TLI = 0.94; CFI = 0.95; RMSEA = 0.077				
Measurement model 2: Social Media Technologies				
Social media strategy (CR = 0.93, AVE = 0.83)			.91[a]	
We have a social media strategy that is based on the firm's key performance goals [b]			-[b]	-
We have a social media strategy that provides direction for executing our social media activities	5.56	1.254	.92	19.54
We have a social media strategy that is closely aligned with our marketing strategy	5.54	1.316	.91	18.78
We have a social media strategy that offers a clear definition of our target audience	5.55	1.316	.90[a]	-
Social media engagement activities (CR = 0.87, AVE = 0.69)			.97	12.02
We encourage stakeholders to interact with us in social media	5.30	1.458	.78	11.59
We create interesting and engaging content to stimulate engagement [b]			-[b]	-
We respond actively to stakeholder engagement	5.59	1.252	.88	13.74
We acknowledge and reward stakeholders who engage with us	5.29	1.300	.81[a]	-
Social media analytics (CR = 0.96, AVE = 0.87)			.89	13.46
We use social media analytics to plan and execute our social media effort	5.39	1.422	.93	23.87
We use social media analytics to learn about our audience	5.47	1.439	.93	23.18
We use social media analytics to measure our effectiveness	5.45	1.463	.94	24.10
We monitor relevant social media analytics	5.59	1.411	.93[a]	-
χ^2 (*df.*) = 56.922 (32), $\chi^2/df.$ = 1.77, $p < .001$; TLI = 0.98; CFI = 0.98; RMSEA = 0.068				
Measurement model 3: NPD, market turbulence, technological turbulence and organization performance				
New product development capability (CR = 0.93, AVE = 0.73)				
Frequency of new product introductions in the region	5.25	1.215	.79	11.39
Being first in the regional market with new products	5.16	1.237	.85	17.52
Ability to introduce new product versions simultaneously in different markets.	5.29	1.194	.89	16.46
Ability to respond to the unique requirements of different countries	5.29	1.193	.90	16.96
Ability to penetrate new regional markets	5.34	1.181	.80[a]	-
Market turbulence (CR = 0.93, AVE = 0.77)				
In our business, customer product preferences change quite a bit over time	5.32	1.402	.93	15.35
It is difficult to predict market and customer preference changes	5.03	1.342	.91	9.91
It is very difficult to forecast where customer demands in our industry will be in 5 years	5.14	1.490	.91	10.30
Constant changes in consumer demands bring hidden opportunities for our firm's business development	5.16	1.272	.83[a]	-
Technological turbulence (CR = 0.92, AVE = 0.76)				
The technology in our industry is changing rapidly	5.78	1.327	.91	17.38
Technological changes provide big opportunities in our industry	5.68	1.247	.87	19.21
It is very difficult to forecast where the technology in our industry will be in 5 years	5.40	1.182	.77	13.03
A large number of new product ideas have been made possible through technological breakthroughs in our industry	5.50	1.231	.93[a]	-
Organization performance (CR = 0.91, AVE = 0.72)				
Market share growth	5.22	1.162	.81[a]	-
New customer acquisition	5.29	1.188	.82	17.725
Customer satisfaction	5.34	1.166	.80	8.235
Sales goal achievement	5.25	1.205	.94	9.299

Goodness-of-Fit Statistics:
χ^2 (*df.*) = 233.444 (107), $\chi^2/df.$ = 2.71, $p < .001$; TLI = 0.94; CFI = 0.95; RMSEA = 0.084

Note: CR = composite reliability; AVE = average variance extracted.
[a] Fixed to set the scales, [b] Item removed during Exploratory Factor Analysis

Table IV. Internal consistency of measures of capabilities

	CR	AVE	1	2	3
1. OCI capability	0.86	0.67	**0.82**		
2. Social media technology	0.93	0.81	0.48**	**0.90**	
3. NPD capability	0.93	0.73	0.03	0.21**	**0.85**

** $p < 0.01$ (two-tailed test)
Squared root of average variance extracted is in bold on the diagonal

Table V. Results of hypotheses testing

Hypothesis	Standardized effect	*t*-value
H1 Social media technologies→ Organization cultural intelligence capability	0.54	5.55***
H2 Social media technologies→ New product development capability	0.28	2.81**
H3 Organization cultural intelligence capability → Organization performance	0.53	6.00***
H4 New product development capability → Organization performance	0.40	5.71***
H5 Organization cultural intelligence capability → New product development capability	-0.14	-1.45
Goodness-of-Fit Statistics:		
χ^2 (*df.*) = 1327.730(800), $p < 0.001$; TLI=0.92; CFI=0.93; RMSEA=0.063		

**$p < 0.01$; ***$p < 0.001$

Table VI. Results of multi-group analysis

	Low	High	Δχ (df=1)
Market turbulence			
OCI capability → Organization performance	0.425	0.590	0.007
NPD capability → Organization performance	0.384	0.491	0.165
	$\Delta\chi^2$ (*df*=43): 56.776*		
Technological turbulence			
OCI capability → Organization performance	0.516	0.426	5.300**
NPD capability → Organization performance	0.471	0.381	1.080
	$\Delta\chi^2$ (*df*=43): 78.139***		

*$p < 0.1$; **p < 0.05; ***p < 0.01

Table VII**.** Truth table for the configurations to predict higher performance

SMT	OCI	NPD	Number	OP	Consistency
0	1	1	7	1	0.975
1	0	1	10	1	0.972
1	1	0	11	1	0.957
0	0	1	3	1	0.954
0	1	0	5	1	0.941
1	1	1	117	1	0.940

Notes: SMT: social media technologies; OCI: organizational culture intelligence; NPD: new product development; OP: organizational performance

Table VIII**.** Truth table for the configurations to predict lower performance

SMT	OCI	NPD	Number	~ OP	Consistency
0	0	1	3	1	0.875
0	1	0	5	1	0.865

Notes: SMT: social media technologies; OCI: organizational culture intelligence; NPD: new product development; ~ OP: absence of organizational performance

Table IX. Sufficient configurations of marketing capabilities to predict performance

Configurations	Raw coverage	Unique coverage	Consistency
Configurations for high level of OP			
SMT*OCI	0.873	0.080	0.910
SMT*NPD	0.824	0.031	0.923
OCI*NPD	0.838	0.046	0.929
Solution coverage: 0.951			
Solution consistency: 0.889			
Configurations for low level of OP			
~SMT*OCI~NPD	0.516	0.516	0.865
Solution coverage: 0.516			
Solution consistency: 0.865			

Notes: SMT: social media technologies; OCI: organizational culture intelligence; NPD: new product development; OP: organization performance

Table X. Truth table for the configurations to predict higher performance at 90th and 10th percentiles

SMT	OCI	NPD	Number	OP	Consistency
0	1	1	9	1	0.907
1	1	1	59	1	0.878
1	0	1	13	1	0.866
1	1	0	40	1	0.844

Notes: SMT: social media technologies; OCI: organizational culture intelligence; NPD: new product development; OP: organizational performance

Table XI**.** Truth table for the configurations to predict lower performance at 90th and 10th percentiles

SMT	OCI	NPD	Number	~ OP	Consistency
0	1	0	9	1	0.834
1	0	1	13	1	0.820

Notes: SMT: social media technologies; OCI: organizational culture intelligence; NPD: new product development; ~ OP: absence of organizational performance

Table XII. Sufficient configurations of marketing capabilities to predict performance at 90th and 10th percentiles.

Configurations	Raw coverage	Unique coverage	Consistency
Configurations for high level of OP			
SMT*OCI	0.745	0.153	0.822
SMT*NPD	0.666	0.075	0.845
Solution coverage: 0.820			
Solution consistency: 0.802			
Configurations for low level of OP			
~SMT*OCI~NPD	0.391	0.145	0.834
SMT*~OCI*NPD	0.409	0.163	0.820
Solution coverage: 0.555			
Solution consistency: 0.786			

Notes: SMT: social media technologies; OCI: organizational culture intelligence; NPD: new product development; OP: organization performance

Table XIII**.** Truth table for the configurations to predict higher performance at 80th and 20th percentiles

SMT	OCI	NPD	Number	OP	Consistency
0	1	1	9	1	0.856
1	1	1	59	1	0.843
1	0	1	13	1	0.810
1	1	0	40	1	0.804

Notes: SMT: social media technologies; OCI: organizational culture intelligence; NPD: new product development; OP: organizational performance

Table XIV**.** Truth table for the configurations to predict lower performance at 80th and 20th percentiles

SMT	OCI	NPD	Number	~ OP	Consistency
0	1	0	9	1	0.833
1	0	1	13	1	0.805

Notes: SMT: social media technologies; OCI: organizational culture intelligence; NPD: new product development; ~ OP: absence of organizational performance

Table XV. Sufficient configurations of marketing capabilities to predict performance at 80th and 20th percentiles.

Configurations	Raw coverage	Unique coverage	Consistency
Configurations for high level of OP			
SMT*OCI	0.731	0.204	0.791
SMT*NPD	0.595	0.067	0.804
OCI*NPD	0.602	0.074	0.819
Solution coverage: 0.874			
Solution consistency: 0.761			
Configurations for low level of OP			
~SMT*OCI~NPD	0.368	0.176	0.833
SMT*~OCI*NPD	0.325	0.133	0.805
Solution coverage: 0.501			
Solution consistency: 0.784			

Notes: SMT: social media technologies; OCI: organizational culture intelligence; NPD: new product development; OP: organization performance

Table XVI**.** Results of multi-group post-hoc analysis

	Low	**High**	**$\Delta\chi^2$ (*df*=1)**
Market turbulence			
SMT → OCI capability	0.429	0.545	2.559
SMT → NPD capability	0.244	0.347	0.007
OCI capability → NPD capability	0.064	-0.369	5.010**
	$\Delta\chi^2$ (*df*=43): 56.776*		
Technological turbulence			
SMT → OCI capability	0.332	0.601	7.749***
SMT → NPD capability	0.390	0.238	5.300**
OCI capability → NPD capability	-0.051	-0.234	0.271
	$\Delta\chi^2$ (*df*=43): 78.139***		

*$p < 0.1$; **$p < 0.05$; ***$p < 0.01$