Journal of Business Research xxx (xxxx) xxx–xxx

Contents lists available at ScienceDirect

Journal of Business Research

journal homepage: www.elsevier.com/locate/jbusres

Examining the link between marketing controls and firm performance: The mediating effect of market-focused learning capability

Xiaoning Liang[a,*], Johanna Frösén[b,c]

[a] Trinity Business School, Trinity College Dublin, the University of Dublin, Dublin, Ireland
[b] Hanken School of Economics, Helsinki, Finland
[c] Graduate School of Management, St. Petersburg State University, St. Petersburg, Russia

ARTICLE INFO

Keywords:
Marketing controls
Market-focused learning capability
Structural equation modeling
Configuration analysis

ABSTRACT

This study builds on parallel structural equation modeling (SEM) and fuzzy set Qualitative Comparative Analysis (fsQCA) to explore how formal and informal marketing controls affect firm performance by enhancing a firm's market-focused learning capability. The SEM results reveal that formal controls have a direct impact on market-focused learning capability and, thereby, firm performance, while informal controls strengthen this positive impact. Furthermore, results from fsQCA suggest that all configurations associated with high market-focused learning and/or high firm performance reflect high informal controls. Taken together, these results imply that informal controls serve as "hygiene factors" that are necessary but not sufficient to generate market-focused learning capability or firm performance. Finally, a firm's business strategy (i.e., cost leadership, differentiation or a dual strategy) is found to moderate the effectiveness of marketing controls: firms with a dual strategy benefit more from informal controls, while those with a clear strategy reap more benefits from formal controls.

1. Introduction

Management controls are organizational processes that align employees or business units with a firm's overall objectives (Yan & Gray, 1994). Management controls in a marketing context are accordingly deemed vital mechanisms to influence and guide the marketing department and marketing employees to reach desirable outcomes (e.g., Jaworski, 1988). The use of marketing controls as a means of influencing, managing, and improving both individual (e.g., Brashear, Manolis, & Brooks, 2005; Cravens, Lassk, Low, Marshall, & Moncrief, 2004; Schepers, Falk, Ruyter, Jong, & Hammerschmidt, 2012) and firm performance (Frösén, Luoma, Jaakkola, Tikkanen, & Aspara, 2016; Kang, Wu, Hong, & Park, 2012) has received extensive scholarly attention. At a more detailed level, the mechanisms through which marketing controls influence the performance of individuals – in increasing role/task clarity, improving intrinsic motivation, and facilitating inter-personal communication and interaction – are relatively well understood (e.g., Flaherty & Pappas, 2012; Miao & Evans, 2012). However, the majority of studies addressing the consequences of marketing controls on firm-level performance has focused on the direct overarching effects, but overlooked the mechanisms through which these effects occur, leading to a limited understanding of how marketing controls contribute to firm performance (Lee, Kozlenkova, & Palmatier, 2015).

Conceptual studies in management have noted that organizational learning may play a role in transforming management controls to firm performance (Turner & Makhija, 2006). However, due to the present lack of empirical validation, the extant literature only shows a limited understanding of the role that organizational learning plays in explaining the performance implications of such controls, particularly in the field of marketing (Lee et al., 2015). Effective collection of, dissemination of, and responsiveness to market information in many industries constitute an important source of competitive advantage (e.g., Garrett, Covin, & Slevin, 2009; Zhang, Wu, & Cui, 2015). For instance, highly successful firms in various industries, such as Asos and Lamoda (retailing), 3 M (diverse technology), IBM (high technology), Imation (banking), and Cummins India (manufacturing), have built their advantage largely on a superior understanding of, and responsiveness to, the market (Day, 2006; Khrennikov & Thesig, 2014; von Hippel, Thomke, & Sonnack, 1999). This advantage, however, is largely the result of less successful trials and market-focused learning.

Management controls play an important role in managing information flows and encouraging knowledge sharing, thereby enhancing organizational learning (Le Bon & Merunka, 2006; Turner & Makhija, 2006). Accordingly, previous studies have called for more research on understanding the linkage between such controls – particularly in relation to flows of market-focused information and knowledge – and organizational learning (Auh & Menguc, 2013). These studies suggest that there is a need for more

* Corresponding author.
E-mail addresses: Xiaoning.liang@tcd.ie (X. Liang), johanna.frosen@hanken.fi (J. Frösén).

https://doi.org/10.1016/j.jbusres.2019.01.021
Received 17 January 2018; Received in revised form 9 January 2019; Accepted 11 January 2019

research stressing the central role of organizational learning in translating informal market knowledge into firm performance (e.g., Liu, Luo, & Shi, 2002; Slater & Narver, 1995) and the role of formal routines, structures, and practices in defining firms' ability to learn from the market (e.g., Ayers, Gordon, & Schoenbachler, 2001; Conner & Prahalad, 1996).

To address these calls and to shed light on the mechanisms through which marketing controls affect firm performance, this study examines the effect of marketing controls on firm performance from an organizational learning perspective. Specifically, we focus on market-focused learning capability, which is conceptualized as a firm's ability to collect, distribute, interpret, and utilize market-related information for organizational changes (Weerawardena, Mort, Salunke, Knight, & Liesch, 2015). A firm's market-focused learning capability is considered a key driver of its business performance, due largely to advantages gained by the firms' responsiveness to environmental opportunities or threats, market reach, and success in product innovation (Day, 2011; Kim & Atuahene-Gima, 2010). Accordingly, we formulate our first research question as (RQ1): *What is the role of market-focused learning capability in the relationship between marketing controls and firm performance?*

The marketing literature has long stressed that to achieve superior firm performance, organizations should align their organizational structure with their business strategies (e.g., Jaworski, Stathakopoulos, & Krishnan, 1993; Olson, Slater, & Hult, 2005). Already Drazin and Howard (1984) propose that a fit between business strategies and controls is a prerequisite for business success. Later studies have provided support for this proposition. For instance, from a strategy implementation perspective, Vorhies and Morgan (2003) and Olson et al. (2005) empirically confirm that firms with different strategies benefit from different marketing control mechanisms, while Jaworski and MacInnis (1989) suggest that both formal – process and/or output controls – and informal – cultural and/or professional controls – are necessary for successful strategy implementation. Other studies explore the effectiveness of marketing controls and highlight that business strategies determine the form/combination of marketing controls that can produce the most benefits to firm performance (e.g., Jaworski et al., 1993). Accordingly, there is a need to better understand how business strategies can affect the effectiveness of diverse marketing controls (Frösén et al., 2016; Lee et al., 2015). Echoing this need, this study further investigates how diverse marketing controls affect market-focused learning capability and, thereby, firm performance in firms following different business strategies. To this end, we formulate our second research question as (RQ2): *How does business strategy moderate the relationships between marketing controls, market-focused learning capability, and firm performance?*

Our study contributes to the marketing control literature in three important ways. First, we provide empirical evidence on the role of market-focused learning capability in mediating the impact of marketing controls on firm performance. By examining the interplay between diverse types of marketing controls and market-focused learning capability, we shed empirical light on one important mechanism through which the impact of marketing controls is translated into firm performance. Second, we address the relative role of formal and informal controls in contributing to firm performance. Our findings reveal that informal controls do not bear direct implications on firm performance; however, their indirect impact on the effectiveness of formal controls in improving both market-focused learning capability and firm performance is invaluable. Third, we address the moderating role of business strategy as a key contingency determining the effectiveness of individual types of marketing controls. In so doing, we provide actionable guidelines for firms for aligning their marketing controls with their business strategy to improve market-focused learning and firm performance.

2. Theoretical background and hypothesis development

2.1. Performance implications of formal and informal marketing controls

Marketing controls in general incorporate two types of controls – formal and informal controls – that can be in place at the same time and even serve a complementary role (Jaworski et al., 1993). Formal controls represent written or explicitly stated goals, regulations, and standards firms use to specify processes (e.g., operating procedures) and desirable outputs (e.g., financial results) (Jaworski et al., 1993), as well as to detect deviations between actual performance and pre-defined objectives (Ouchi, 1980). Both process and output controls essentially serve to monitor and manage the efficiency of individual marketing activities. Specifically, process controls enhance processes related to achieving organizational objectives, while output controls help firms specify, monitor, and control their outcomes. The use of marketing metrics and key performance indicators is a good example of formal controls (Frösén, Tikkanen, Jaakkola, & Vassinen, 2013). Firms employ a set of marketing metrics to assess marketing performance and to ensure that the goals of the marketing department align with those of the firm (see also Ambler, Kokkinaki, & Puntoni, 2004).

Informal controls comprise cultural and professional controls that influence employee behaviors through the establishment of unwritten values, rituals, and mutual commitment (Jaworski, 1988). Cultural controls denote social norms, shared values, or beliefs that make up the internal organizational culture, while professional controls use standards and conformity to guide employee actions and appraise employees for their commitment in interacting with others (Jaworski et al., 1993). For instance, a market-oriented organizational culture – stressing the creation of customer value as a key driver for competitive advantage and business profitability – can be considered a form of informal control that defines the *raison d'être* of the organization and guides organizational behavior (Gebhardt, Carpenter, & Sherry, 2006). As another example of informal control, employee-firm identification leads employees to feel a sense of pride in work, identify with their organization to accomplish self-definitional needs, and perform on behalf of their organizations, thus leading to positive firm performance (Homburg, Wieseke, & Hoyer, 2009).

In our study, we argue that both formal and informal controls positively influence firm performance. By exercising formal controls, firms explicate the outcome requirements and standards for the marketing department (Ambler et al., 2004). Consequently, the marketing department and employees understand their organization's expectations more accurately, thereby reducing role ambiguity and increasing task clarity (Joshi & Randall, 2001). The increased role/task clarity, in turn, diminishes a conflict of interests between departments and individuals, improving the efficiency of the marketing department and the firm (Bello & Gilliland, 1997). Output controls, in particular, allow firms to monitor the performance of the marketing department regularly and motivate the department to achieve the pre-set performance goals for which it is held accountable (Anderson & Oliver, 1987). This ensures that the marketing department does not pursue random opportunities that might deviate from firm-level strategic objectives (Caruana, Morris, & Vella, 1998). Finally, formal controls provide feedback for the marketing department on its performance against the objectives (Ambler et al., 2004). Such feedback helps the department to adjust its marketing strategies or apply efforts to work more efficiently toward these objectives. Thus, we hypothesize:

H1a. Formal marketing controls have a positive impact on firm performance.

Informal controls, particularly cultural controls, can encourage cooperative behaviors among individuals and collaboration between departments (Ayers et al., 2001). If employees are rewarded for being committed to work-related discussion and interactions, they are more likely to engage in these behaviors (Flaherty & Pappas, 2012). This improves interactions, communications, and cooperation within and between departments, which, according to empirical evidence, lead to superior firm performance (Verhoef & Leeflang, 2009). Moreover, employees often internalize social norms or shared values better than explicit goals or standards (Homburg et al., 2009). This internalization

nurtures goal congruence, sense of belonging, and job commitment (Brashear et al., 2005), which, in turn, may motivate employees to effectively perform their responsibilities in congruence with organizational objectives (Cravens et al., 2004). Building on this reasoning, we assume:

H1b. Informal marketing controls have a positive impact on firm performance.

2.2. Mediating effect of market-focused learning capability

Market-focused learning capability is a type of organizational learning capability focused on collecting market-related information and knowledge, and disseminating, interpreting, and utilizing such knowledge for the constant renewal of the organization (Weerawardena, O'Cass, & Julian, 2006). It is deemed an important source of competitive advantage (Day, 1994, 2011; Weerawardena et al., 2015). Studies show that firms with a superior market-focused learning capability are inclined to be more responsive to market changes, which can lead to improved firm performance (Garrett et al., 2009). For instance, higher levels of market-focused learning capability allow firms to be more responsive to changing customer needs and, thereby, to increase compatibility between their new product development and customer preferences (Kim & Atuahene-Gima, 2010). Consequently, such firms become more capable of reaching the intended market and satisfying customers' needs (Knight, 2000). Empirical studies further support that firms with a higher level of market-focused learning capability outperform others with regard to new product innovation, marketing capabilities, and market and firm performance (Skarmeas, Lisboa, & Saridakis, 2016; Weerawardena et al., 2006).

Studies on the mechanisms of market-focused learning capability have begun to link it with marketing controls. On the one hand, information about the market, especially about customers and competitors, is the key source of market knowledge (De Luca & Atuahene-Gima, 2007). Formal controls, such as the use of marketing metrics, enable firms to accumulate information about their customers and competitors (Ambler et al., 2004; Homburg, Artz, & Wieseke, 2012), thereby facilitating market-focused learning. On the other hand, Baker and Sinkula (2002) assert that firms' values (e.g., learning commitment, shared visions, and open-mindedness) encourage a collective effort to develop market-focused learning processes. A firm's informal controls are shown to be positively associated with learning or, in more specific terms, with related learning processes, such as information sharing, knowledge creation, and market information acquisition (Ayers et al., 2001; Liu et al., 2002; Miao & Evans, 2012). Taken together, we hypothesize that the use of marketing controls cultivates a firm's market-focused learning capability and, thereby, firm performance:

H2. A firm's market-focused learning capability mediates the positive impact of (a) formal and (b) informal controls on firm performance.

2.3. Interactions between formal and informal marketing controls

Previous studies suggest that formal and informal controls can complement each other to influence firm performance (e.g., Frösén et al., 2016; Kumar, Jones, Venkatesan, & Leone, 2011). For instance, Frösén et al. (2016) highlight that, although informal controls per se may not lead to superior firm performance, they yield performance benefits when combined with appropriate formal controls. Other studies advocate the combined use of formal and informal controls to increase the clarity of employees' roles, reduce role conflict and ambiguity, enhance team collaboration, and thereby enhance individual and firm performance (Miao & Evans, 2012). Similarly, the impact of marketing controls on market-focused learning capability may change, depending on the extent to which formal and informal controls are practiced simultaneously. Taking the acquisition of market-related knowledge as an example, Homburg et al. (2012) find that firms acquire and accumulate market knowledge through identifying causal relationships behind marketing metrics (formal control). Others suggest that informal controls (e.g., a market-oriented culture) can supplement the acquisition of such market-related knowledge by creating a broader understanding of the market (e.g., Olavarrieta & Friedmann, 2008). In congruence with these studies, we hypothesize:

H3. Formal and informal controls positively interact to influence market-focused learning capability.

2.4. Moderating effect of strategy type on the impact of marketing controls

Business strategy denotes how firms compete in a marketplace (Walker & Ruekert, 1987). Emphasizing a firm's role in serving customers and outperforming competitors, Porter (1980) proposes two dominant strategies: cost leadership and differentiation. A cost leadership strategy entails firms undercutting their prices to offer goods or/and services at lower prices than the competition. A differentiation strategy entails creating value that customers perceive as unique and distinct, thereby differentiating the firm's offerings from those of its competitors. Some scholars hold that cost leadership and differentiation strategies are mutually exclusive and that firms must commit to one clear strategy to achieve success (e.g., Aulakh, Kotabe, & Teegen, 2000; Porter, 1980). Other empirical evidence, however, suggests that these two strategies are not two ends of the spectrum but may occur simultaneously (e.g., Li & Li, 2008). Under certain contexts, adopting a dual strategy, a strategy that emphasizes both cost leadership and differentiation strategies, may also be beneficial to firms (Beal & Yasai-Ardekani, 2000).

Firms with different business strategies may benefit from different marketing controls (Vorhies & Morgan, 2003). Maintaining a competitive price in the marketplace requires firms to reduce their costs to a minimum (Walker & Ruekert, 1987). Therefore, firms following a cost leadership strategy are likely to benefit more from formal controls that enable them to closely monitor operating costs and reduce risks (Clark, 2001). In contrast, firms following a differentiation strategy often rely on employees' proactivity rather than guidance from higher-level managers (cf. Olson et al., 2005), as well as on stimulating risk taking and exploration of new market opportunities at all organizational levels (Slater & Narver, 1995). Therefore, such firms are likely to benefit from informal controls that stress departmental and individual collaboration, highlight flexibility in the organization, and appraise innovation and exploration of opportunities (Crossan & Apaydin, 2010). Following this logic, we hypothesize:

H4. Compared with firms adopting a cost leadership strategy, those with a differentiation strategy can benefit (a) more from informal controls, but (b) less from formal controls.

For firms with a dual strategy, differentiation and low cost are emphasized simultaneously in the organization. These firms can benefit from a high level of both formal controls that monitor the production process and operating costs (Clark, 2001; Jaworski et al., 1993) and informal controls that allow them to stress knowledge sharing and innovativeness (Crossan & Apaydin, 2010). Fig. 1 summarizes our theoretical framework.

3. Research approach and data collection

3.1. Data collection

This study builds on survey data collected in Ireland, which is among the world's most open and rapidly growing economies. In Ireland, market-focused learning plays a central role for firms that compete in the intensely competitive global market (Enterprise Strategy Group, 2004). We followed Dillman's (2011) tailored design method

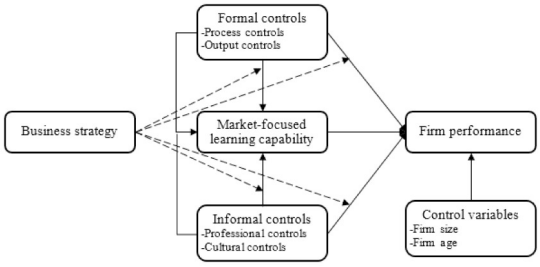

Fig. 1. The impact of marketing controls on firm performance is mediated by market-focused learning capability and moderated by a firm's business strategy. *Dashed lines represent the moderation effect of strategy type on the impact of marketing controls.

and sent a survey (online and offline) to 660[1] firms in the Irish Times Top 1000 Companies database and to 210 small and medium enterprises (SMEs) that are members of a research institute (to complement the former database to better represent the distribution of firms in the Irish economy).

A total of 235 responses were received, with 209 completed surveys, yielding a response rate of 27.01% and a completion rate of 24.02%. Table 1 presents descriptive information about the survey respondents and firms. We tested the non-response bias by comparing early respondents with late respondents (Lindner, Murphy, & Briers, 2001). The *t*-test results show no significant difference between early and late respondents, indicating that there is no serious concern for non-response bias. The questionnaire asked respondents to indicate their levels of involvement in organizational decision-making and their knowledge of marketing-related issues on a 7-point Likert scale. The average scores of decision-making involvement and knowledge of marketing-related issues are 5.80 and 6.18, respectively. A score above 5 indicates that respondents are competent and reliable (e.g., Weerawardena et al., 2006).

3.2. Survey design and scale validation

Table 2 reports our measurement items, all of which were adopted from existing studies and measured on 7-point Likert scales. We conducted interviews with eight academic experts and eleven marketing or senior managers from different industries to check the quality and suitability of the measurement items. The survey was finalized based on their feedback. We used fourteen items adopted from Jaworski et al. (1993) to measure marketing controls. These items capture the extent to which firms implement their formal and informal controls over the marketing department. Formal controls are represented by process and output controls, while informal controls are characterized by professional and cultural controls.

3.2.1. Market-focused learning capability

Six items were adopted from Weerawardena et al. (2006) and Weerawardena et al. (2015) to measure market-focused learning capability. The respondents were asked to indicate how their firms performed with respect to the collection, interpretation and use of market-related information in innovation and organization-wide renewal, compared with their major competitors.

[1] Before we sent out the survey, we contacted the firms in the Irish Times Top 1000 Companies list and asked them to indicate the proper informant(s) to whom we could send the survey. We collected the contact information of 660 firms. Other firms in this list were ruled out either because there was no functional marketing department in Ireland or because they refused to participate in this study due to organizational policy.

Table 1
Descriptive statistics on respondents and their firms.

Variable		Category	N (sample)	Valid %
Job title		Marketing manager	75	37.13%
		CMO	40	19.80%
		CEO	41	20.30%
		Other[a]	46	22.77%
		Missing value	7	
		Total	209	100.00%
Firm	Trade status	Private	157	75.12%
		Public	52	24.88%
		Total	209	100.00%
	Business focus	B2B	140	66.99%
		B2C	69	33.01%
		Total	209	100.00%
	Business strategy	Cost leadership	19	9.09%
		Differentiation	175	83.73%
		Dual	15	7.18%
		Total	209	100.00%
	Industry	Manufacturing	38	18.18%
		Service/trade	118	56.46%
		Other	53	25.36%
		Total	209	100.00%

[a] 22.77% of our respondents are other experienced professionals who had sufficient knowledge on marketing-related issues (titles including business development director, senior commercial director, and director of sales and operation). We conducted a series of one-way ANOVA analysis to check if the four types of respondents answered the survey questions differently. The results showed no difference in their answers, indicating that their evaluations of the key concepts were consistent.

3.2.2. Firm performance

Multiple items were derived from previous studies to measure firm performance (Verhoef & Leeflang, 2009; Vorhies & Morgan, 2005). Our respondents were asked to indicate how their firms performed regarding customer satisfaction, market share, new customer acquisition, profitability, return on investment (ROI) and sales, relative to their major competitors. Combined, these measures provide a rounded view of firm performance including both perspectives of effectiveness and efficiency (e.g., Sheth & Sisodia, 2002).[2]

3.2.3. Moderators and control variables

The measures of business strategy, used as a moderator, were adopted from Verhoef and Leeflang (2009), with different selections for cost leadership strategy, differentiation strategy, and others. If selecting "others," the respondents were further asked to specify their strategic choice. One respondent reported following a niche strategy and was therefore removed from subsequent analyses, while others reported having a dual strategy (a combination of cost leadership and differentiation). This study also included firm size (the number of full-time employees) and firm age (the number of years since establishment) as control variables, since these two variables have been found to have an impact on firm performance in other empirical studies and are thereby commonly used as controls (e.g., Homburg et al., 2012; O'Sullivan & Abela, 2007).

3.3. Data validity and reliability

Confirmatory Factor Analysis (CFA) was performed to assess the measurement model. As shown in Table 2, a four-factor confirmatory measurement model results in a good model fit: $\chi^2(264) = 525.12$; Chi-square value/degree of freedom (CMIN/df) = 1.99; comparative fit

[2] We also divided firm performance data into measures of effectiveness and efficiency and separately analyzed the effectiveness and efficiency models. However, separating effectiveness and efficiency models did not result in significantly different findings, which is why firm performance is treated as a unidimensional construct combining the two.

Table 2
CFA results.

Constructs and items	Factor loadings	Properties
Formal controls (Jaworski et al., 1993)		
Output controls (α = 0.92) (1 = strongly disagree, 7 = strongly agree)		CR = 0.87
Our firm sets clear, planned goals and objectives for the marketing department	0.82	AVE = 0.78
Our firm monitors if the marketing department attains performance goals	0.93	MSV = 0.55
Our firm requires the marketing department to explain why if goals are not met	0.85	ASV = 0.28
Our firm provides feedback to the marketing department concerning the extent to which it achieves performance goals	0.88	
Process controls (α = 0.95) (1 = strongly disagree, 7 = strongly agree)		
Our firm specifies detailed and comprehensive specifications for the procedures that the marketing department needs to follow	0.91	
Our firm formulates processes by which the marketing department has to operate	0.96	
Our firm monitors if the marketing department works according to prescribed methods	0.93	
Informal controls (Jaworski et al., 1993)		
Cultural controls (α = 0.94) (1 = strongly disagree, 7 = strongly agree)		CR = 0.96
Our firm encourages marketing staff to have shared values, beliefs and norms	0.81	AVE = 0.93
Our firm encourages marketing staff to feel a sense of pride in their work	0.94	MSV = 0.55
Our firm encourages marketing staff to feel a part of the organization	0.99	ASV = 0.25
Professional controls (α = 0.95) (1 = strongly disagree, 7 = strongly agree)		
Our firm encourages cooperation between marketing staff	0.93	
Our firm fosters an environment where marketing staff respect each other's work	0.96	
Our firm encourages job-related discussions between marketing staff	0.91	
Most marketing staff are familiar with each other's productivity	0.80	
Market-focused learning (Weerawardena et al., 2006; Weerawardena et al., 2015) (α = 0.86)		
Compared to our major competitors, our firm performs (better or worse) in… (1 = much worse, 7 = much better)		CR = 0.86
Collecting information about markets	0.78	AVE = 0.51
Searching for innovative ideas through market information	0.69	MSV = 0.18
Gaining knowledge about market segments	0.80	ASV = 0.15
Gaining knowledge of our competitors	0.70	
Sharing market information with employees[a]	0.58	
Using market information in innovation	0.70	
Firm performance (Verhoef & Leeflang, 2009; Vorhies & Morgan, 2005) (α = 0.89)		
Relative to our major competitors, our firm performs (better or worse) in terms of (1 = much worse, 7 = much better)		CR = 0.89
Customer satisfaction[b]	–	AVE = 0.63
Market share	0.74	MSV = 0.16
Acquiring new customers	0.78	ASV = 0.12
Return on investment	0.77	
Sales	0.82	
Profitability	0.85	

[a] Market-focused learning capability is conceptualized as the collection, distribution, interpretation, and use of market knowledge of a firm. Though its factor loading is low, this item is kept to measure the distribution of market knowledge.
[b] Item deleted due to low factor loading.

index (CFI) = 0.95; root mean square error of approximation (RMSEA) = 0.07; standardized root mean squared residual (SRMR) = 0.06. The Cronbach's alphas and composite reliability (CR) scores for all the variables are above the recommended 0.80 level (Fornell & Larcker, 1981), demonstrating good internal reliability. All items are loaded onto their expected construct, with acceptable factor loadings. Thus, the convergent validity is secured. The Average Variance Extracted (AVE) values all exceed the recommended 0.50 threshold (Fornell & Larcker, 1981), further confirming the convergent validity. Maximum Shared Variance (MSV) and Average Shared Variance (ASV) scores are smaller than the respective AVE, indicating that the constructs differ distinctly from each other (Hair, Black, Babin, & Anderson, 2010). The square root of AVE is larger than the inter-construct correlation, further securing discriminant validity. Table 3 presents the descriptive statistics and correlation matrix.

To address potential common method variance (CMV), we followed several procedures recommended by Podsakoff, MacKenzie, and Podsakoff (2012). For instance, all respondents were guaranteed anonymity and confidentiality of their responses. To reduce task difficulty and enhance the accuracy of responses, the survey was piloted with 11 practitioners from various industries and 8 academic experts, and modified accordingly to make it clearer and more concise. We further tested for CMV by conducting Harman's one-factor test. Exploratory factor analysis using principal component factoring resulted in a solution of five factors. The results show no single dominant factor. We also employed the marker variable technique recommended by Lindell and Whitney (2001). We chose marketing complexity as a marker variable, since this variable is not theoretically related with the variables of interest in this study. Marketing complexity was measured with three items: “our range includes many products/services,” “our firm offers a broad set of products/services,” and “our products/services are very distinct” (Homburg et al., 2012). The results show that the marker variable is unrelated to our variables (correlation coefficients range from −0.05 to 0.08, none of them being statistically significant). The average correlation between the marker variable and the variables in this study is 0.05, indicating no big concern for CMV. Finally, including the marker variable into the analyses did not affect our results. Taken together, these tests all indicate that CMV is not a serious concern in this study.

Previous studies have suggested that objective firm performance measures produce a more valid and reliable assessment of firm performance (Katsikeas, Morgan, Leonidou, & Hult, 2016). Accordingly, we collected objective firm performance data to validate our primary performance data collected via the survey instrument. We used objective firm performance data on return on asset (ROA) and profit margin as proxies for financial performance (O'Sullivan & Abela, 2007). We collected data of three-year average ROA and profit margin through the Financial Analysis Made Easy (FAME) database one year after conducting the survey. For the 209 firms in our sample, we were able to obtain the data of ROA for 55 firms and profit margin for 50 firms. Highly significant correlations are found between firm performance and profit margin ($r = 0.57$, $p < .001$) and ROA ($r = 0.60$, $p < .001$), further validating our subjective firm performance measures.

Table 3
Descriptive statistics and correlation matrix.

	Mean	SD	VIFs	1	2	3	4	5	6	7	8
1: Formal control	4.06	1.23	2.80	–							
2: Informal control	3.49	0.98	2.51	0.71	–						
3: MFL	3.97	0.71	1.29	0.42	0.35	–					
4: Firm performance	4.76	1.15	–	0.37	0.31	0.44	–				
5: Firm age	35.99	38.98	1.02	0.13	0.08	0.06	0.22	–			
6: Firm size	1771.72	7594.09	1.02	0.11	0.06	0.12	−0.03	0.03	–		
7: Cost leadership			2.23	−0.14	−0.12	−0.12	0.05	0.15	−0.07	–	
8: Differentiation			2.12	0.04	0.02	0.03	−0.03	−0.03	0.06	−0.72	–

Note: MFL: market-focused learning capability; correlation ≥0.22 or < −0.22 is significant at the 0.01 level.

Table 4
Path analysis results.

Variables	Model 1a	Model 2a	Model 3a	Model 4a
Controls				
Firm age → FP	0.18** (2.87)	0.18** (3.08)	0.18** (3.11)	0.18** (3.12)
Firm size → FP	−0.07 (−1.09)	−0.09 (−1.53)	−0.09 (−1.54)	−0.08 (−1.45)
Independent variables				
FC → FP	0.34** (3.26)	0.16 (1.53)	0.16 (1.50)	0.13 (1.33)
IC → FP	0.04 (0.34)	0.06 (0.60)	0.08 (0.67)	0.11 (1.01)
FC * IC → FP			0.02 (0.31)	−0.02 (−0.22)
Mediators				
MFL → FP		0.34** (5.04)	0.34** (4.88)	0.33** (5.03)
FC → MFL		0.53** (5.30)	0.48** (4.89)	0.48** (4.82)
IC → MFL		−0.07 (−0.73)	0.11 (0.94)	0.11 (0.97)
FC * IC → MFL			0.23** (2.90)	0.23** (2.90)
Moderators				
CL → MFL				0.06 (0.71)
DF → MFL				0.08 (0.83)
CL → FP				0.02 (0.18)
DF → FP				−0.07 (−0.76)
CL * FC → MFL				−0.02 (−0.13)
CL * IC → MFL				0.02 (0.20)
CL * FC → FP				0.48** (3.12)
CL * IC → FP				−0.14 (−1.20)
DF * FC → MFL				0.08 (0.46)
DF * IC → MFL				−0.16 (−1.11)
DF * FC → FP				0.49** (3.57)
DF * IC → FP				−0.37** (−2.63)
Model fit indices				
χ^2 (df)	6.44 (5)	7.64 (7)	9.56 (9)	20.35 (21)
CMIN/df	1.29	1.09	1.06	0.97
CFI	0.99	0.997	0.998	0.999
RMSEA	0.04	0.02	0.02	0.00
SRMR	0.05	0.06	0.05	0.04

Note: the numbers in brackets are critical ratios; Firm size was recoded as a dummy variable with 1 representing large firms, and 0 representing SMEs.
Abbreviations: FC: formal controls, IC: informal controls, FP: firm performance, CL: cost leadership strategy, DF: differentiation strategy.
** $p < .01$.

4. Analytical methods and findings

We used structural equation modeling (SEM) in AMOS as a primary method to test our research hypotheses related to the impact of formal and informal controls on market-focused learning capability and firm performance (Hair et al., 2010). Moreover, we applied a set-theoretic configuration analysis method, fuzzy-set Qualitative Comparative Analysis (fsQCA), to shed additional light on the complexity of the interplay of marketing controls (process, output, cultural, and professional controls), market-focused learning capability, and business strategy in their association with firm performance (Fiss, 2011; Woodside, 2013).

4.1. Path analysis results

Table 4 shows the results from our path analysis. To test our research model, we used mean-centered independent variables to reduce potential multicollinearity (Aiken, West, & Reno, 1991). All variance inflation factor (VIF) values (see Table 3) are below the threshold of 3, indicating that multicollinearity poses no serious concern (Hair et al., 2010). Model 1 analyzes the direct effect of formal and informal controls on firm performance. The results show that only formal controls have a significant impact on firm performance ($\beta = 0.34$, $p < .01$), while informal controls have no direct effect ($\beta = 0.04$, $p > .05$). This supports H1a but not H1b.

Model 2 includes market-focused learning capability as a mediator of the relationship between marketing controls and firm performance. The results demonstrate that formal controls positively influence market-focused learning capability ($\beta = 0.53$, $p < .01$), while informal controls have no significant impact ($\beta = -0.07$, $p > .05$). Market-focused learning capability is also found to have a positive impact on firm

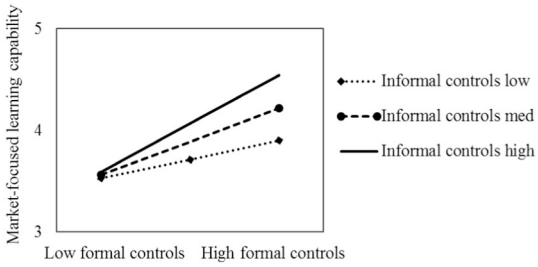

Fig. 2. The interaction effect between formal and informal controls on market-focused learning capability.

performance ($\beta = 0.34$, $p < .01$). Moreover, bootstrapping results provide support for the full mediating effect of market-focused learning capability on the relationship between formal controls and firm performance (0.18, bootstrap standard errors (BSE) = 0.05, 95% bias-corrected bootstrap confidence interval (BCBCI): [0.11; 0.28]). The results support H2a but not H2b.

Model 3 further incorporates potential interaction between formal and informal controls on market-focused learning capability. The results show that informal controls strengthen the impact of formal controls ($\beta = 0.23$, $p < .01$), which supports H3. As shown in Fig. 2, when the level of informal controls is low, formal controls have a positive impact on market-focused learning. When the level of informal controls increases, the positive impact of formal controls on such capability becomes even stronger. These results underscore the value of the combined use of formal and informal controls in cultivating a firm's market-focused learning capability.

Model 4 further extends Model 3 to include strategy type as a potential moderator.[3] For the analysis, we coded strategy type as dummy variables of differentiation strategy and cost leadership strategy (a dual strategy representing the baseline). Strategy type as such is not found to have a direct effect on either market focused learning capability or firm performance. However, as Table 4 depicts, our results show that both cost leadership and differentiation strategies (compared to a dual strategy) positively moderate the impact of formal controls on firm performance ($\beta_1 = 0.48$, $t_1 = 3.12$, $p < .01$; $\beta_2 = 0.49$, $t_2 = 3.57$, $p < .01$, respectively). Fig. 3 further illustrates our findings. The results imply that firms with a clear strategy benefit more from the adoption of formal controls than those with a dual strategy.

In contrast, compared to a dual strategy, a differentiation strategy is found to negatively moderate the effect of informal controls on firm performance ($\beta = -0.37$, $t = -2.63$, $p < .01$). This finding (Fig. 4) suggests that firms with a dual strategy would benefit more from the adoption of informal controls than those with a clear strategy, especially as compared to those with a differentiation strategy. Contrary to our hypotheses, the effects of marketing controls on firm performance and market-focused learning do not differ significantly between firms with a cost leadership strategy and those with a differentiation strategy, leading to the rejection of H4a and H4b. Interestingly, firms adopting a dual strategy benefit more from informal controls and less from formal controls, as opposed to those with a clear strategy.

4.2. Configuration analysis

Inclusion of the detailed classification of marketing controls into a single structural model is not possible due to high collinearity between the individual marketing controls; however, fsQCA as a set-theoretic method (e.g., Fiss, 2007; Short, Payne, & Ketchen, 2008) remains robust against such multicollinearity. Instead of correlations, fsQCA builds on set memberships based on theoretically drawn thresholds (e.g., Fiss, 2011). This means that the results from fsQCA are not directly comparable to those obtained from SEM. However, using fsQCA to complement the insights obtained from SEM helps us to gain a more rounded view of the nature of the interplay between the diverse controls (e.g., Fiss, 2011; Ragin, 2008).

The fsQCA requires all variables of interest to be calibrated into set membership scores that vary between 0.00 and 1.00. In this study, the calibration of marketing controls, market-focused learning capability, and firm performance followed the so-called direct method of calibration (Ragin, 2008). Thresholds for full membership, point of maximum ambiguity (the crossover point), and full non-membership were set to Likert-scale values of 5.00, 4.00, and 3.00, respectively. Coding of business strategy relied on crisp sets only obtaining values of 0.00 and 1.00. The fsQCA builds on an analysis of truth tables constructed based on all possible combinations of conditions of interest compared to all combinations that appear in the data (Ragin, 2008). In the analysis, frequency threshold for a combination to form a configuration identified in the analysis was set to 3.00, and the consistency threshold (denoting the certainty with which the configuration in question is associated with the outcome of interest) to 0.80. The analysis procedure followed a hierarchical approach similar to that applied to SEM, proceeding from a simple model including marketing controls as combinatory factors associated with a high market-focused learning capability (Model i), to examining the interplay of both marketing controls and market-focused learning in generating firm performance (Model ii), and, finally, to including business strategy as a contextual factor (Model iii). We report the intermediary solution provided by fsQCA, and compare it with the parsimonious solution to distinguish between core and periphery conditions (e.g., Fiss, 2011).

Prior to looking at the configuration of causal conditions, the role of each individual condition (marketing controls, market-focused learning capability, and business strategy) in producing the outcome (market-focused learning capability or firm performance) was analyzed in separation. Table 5 presents the results from these Necessity Analyses (Tóth, Thiesbrummel, Henneberg, & Naudé, 2015). As reflected in the table, not following a cost leadership strategy in our data emerges as a necessary condition for both high performance and high market-focused learning capability. This means that practically no high-performing firms or firms reflecting high market-focused learning follow a cost leadership strategy. Interestingly, two informal controls – cultural and professional controls – also emerge as close-to-necessary conditions (with a consistency close to 0.90; see Tóth et al., 2015).

Table 6 presents the configurations related to Model i (simple configurations of marketing controls associated with high market-focused learning capability), Model ii (configurations of marketing controls combined with market-focused learning capability, associated with high firm performance), and Model iii (configurations of marketing controls, market-focused learning capability, and strategy type associated with high firm performance). As shown in Model i, both configurations reflecting a high market-focused learning capability reflect high informal controls and at least one of the formal controls: either process (C1) or output (C2) control. In both configurations, formal controls represent core configurations with a strong relation to the outcome; informal controls represent only peripheral conditions for which the relation to the outcome is weaker (Fiss, 2011). In line with the SEM analyses, this finding suggests that informal controls are complementary to the formal ones in producing the outcome. Both configurations are relatively consistently associated with the outcome (consistency > 0.80), and cover a remarkable proportion of cases reflecting the outcome.

In contrast, Model ii shows that mere informal controls suffice for high firm performance when coupled with high market-focused learning capability; otherwise, a full set of both formal and informal controls is needed. This further highlights the role of market-focused

[3] As an additional robustness check, we also ran a multi-group analysis in AMOS to test the moderating effect of business strategy. The multi-group analysis returns essentially the same results as those reported in this manuscript.

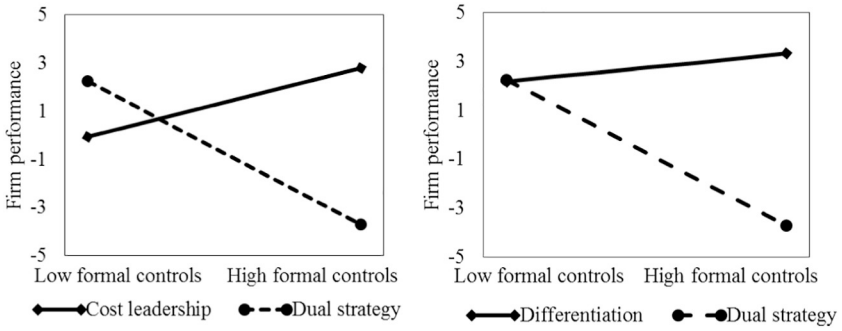

Fig. 3. The interaction effect between business strategy and formal controls on firm performance.

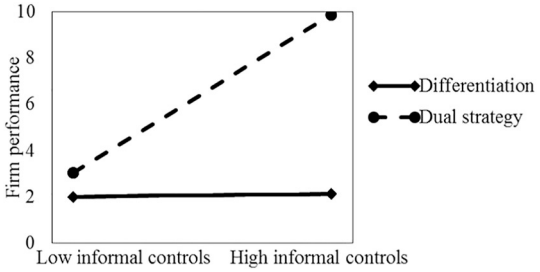

Fig. 4. The interaction effect between business strategy and informal controls on firm performance.

learning capability as a mediator between marketing controls and firm performance, especially in the context of formal controls. The configuration reflecting high market-focused learning capability and high informal controls (C1) is further broken down into two sub-configurations based on two alternative interpretations of its core: the core configuration is formed by high market-focused learning capability, combined with either high cultural control (C1a) or high professional control (C1b), the other representing a periphery condition supporting the core (e.g. Fiss, 2011). For the configuration reflecting a full set of marketing controls but not necessarily market-focused learning capability (C2), process control takes the role of a core condition, supported by the others.

Finally, Model iii as a final step of the analysis particularly stresses the varying role of process controls across strategy types: in general, process control is more important for firms with a cost leadership strategy (C3) than for those following a differentiation strategy (C1). However, firms following a differentiation strategy but not reflecting high market-focused learning capability need process controls for high firm performance (C2). It is notable that the configuration related to cost leadership strategy (C3) covers only a very small proportion of high performing firms (raw coverage 0.04). This is in line with our analysis of necessary conditions, which highlights the lack of cost leadership strategy as a condition necessary for high performance (consistency > 0.90). It means that in our data, very few high-performing firms would reflect cost leadership. Accordingly, configuration C3 may be applicable only to a very small number of firms, which calls for caution in drawing generalizations based on our related findings. Configurations C1 and C2, in terms of both their general content and core, are directly parallel with the configurations identified with Model ii.

Table 7 presents examples of high-performing firms belonging to each of the configurations, focusing on configurations identified by Model ii as the most illustrative model. The firms included in Table 7 represent typical cases of high-performing firms that are best aligned with the characteristics of each configuration.

In line with their recognition as necessary conditions, cultural and professional controls are part of all high-performing configurations (Models ii and iii), as well as all configurations associated with high market-focused learning capability (Model i). This finding further highlights the role of such informal controls as hygiene factors necessary (but not sufficient) for achieving high market-focused learning and/or firm performance (cf. Dul, 2016; Skarmeas, Leonidou, & Saridakis, 2014). This is in line with our SEM results that informal controls do not bear statistically significant performance implications,

Table 5
Analysis of necessary conditions.

		Market-focused learning		Firm performance	
		Consistency	Coverage	Consistency	Coverage
Form of control	Output	0.70	0.80	0.69	0.82
	~Output	0.38	0.65	0.37	0.65
	Process	0.57	0.84	0.55	0.84
	~Process	0.50	0.64	0.51	0.68
	Cultural	0.89	0.75	0.87	0.77
	~Cultural	0.17	0.62	0.18	0.67
	Professional	0.89	0.75	0.87	0.76
	~Professional	0.17	0.63	0.18	0.67
Strategy type	Cost leadership	0.09	0.64	0.09	0.70
	~Cost leadership	**0.91**	0.69	**0.91**	0.71
	Differentiation	0.86	0.70	0.83	0.71
	~Differentiation	0.14	0.59	0.17	0.73
Firm characteristic	Large	0.30	0.65	0.34	0.76
	~Large	0.70	0.70	0.66	0.69
	Old	0.74	0.67	0.81	0.76
	~Old	0.26	0.72	0.19	0.57
Mediator	Market-focused learning			0.78	0.81
	~Market-focused learning			0.31	0.71

Table 6
Results from configuration analyses.

	Outcomes:	Model i Market-focused learning		Model ii Firm performance			Model iii Firm performance				
		C1	C2	C1a	C1b	C2	C1a	C1b	C2	C3a	C3b
Marketing controls	Output		●			●			●	●	●
	Process	●				●			●	●	●
	Cultural	●	●	●	●	●	●	●	●	●	●
	Professional	●	●	●	●	●	●	●	●	●	●
Mediator	Market-focused learning	--	--	●	●		●	●		●	●
Moderator	Cost leadership	--	--	--	--	--	○	○	○	●	●
	Differentiation	--	--	--	--	--	●	●	●	○	○
Configuration	Raw coverage	.55	.68	.70	.70	.50	.60	.60	.45	.04	.04
	Unique Coverage	.03	.16	.25	.25	.05	.20	.20	.05	.04	.04
	Consistency	.85	.83	.85	.85	.87	.83	.83	.86	1.00	1.00
Solution	Coverage	.71			.76				.69		
	Consistency	.82			.83				.83		

N.B.: Black circles denote presence of conditions, white circles its absence. Blank spaces represent "don't care" conditions. Large circles denote core conditions, while small circles refer to periphery conditions. – denotes the exclusion of conditions.

albeit reinforcing the impact of formal controls. Taken together, these findings (as well as the relatively high mean scores in Table 3) suggest that whereas informal controls are necessary for high performance to occur, they are not sufficient per se to generate performance, but are rather complementary to formal controls (e.g., Frösén et al., 2016). Interestingly, all configurations associated with high firm performance not necessarily reflecting high market-focused learning capability (C2 in Model ii and Model iii) are characterized by a full set of marketing controls. In line with SEM results, this finding highlights the mediating role of market-focused learning capability that in some instances may even suffice to substitute for formal controls (C1 in Model ii and Model iii).

5. Discussion and conclusions

The primary objective of this study is to investigate how marketing controls affect firm performance through their impact on market-focused learning capability in different contexts. Our research shows that market-focused learning capability serves as a mediator in the relationship between formal controls and firm performance: formal controls positively influence market-focused learning capability, thereby enhancing firm performance. Informal controls, in contrast, neither directly nor indirectly (via market-focused learning) affect firm performance. However, they serve to enhance the contribution of formal controls to market-focused learning. The configuration analysis shows similar results and suggests that informal controls per se are not sufficient to yield superior performance but should be combined with formal controls and/or market-focused learning capability. Both moderation and configuration analyses confirm that the impact of marketing controls on firm performance varies depending on the firm's business strategy.

5.1. Theoretical contributions

This study contributes to the literature in three main respects. First, while previous studies on the consequences of marketing controls have mainly stressed their direct effects on performance, our study emphasizes the role of market-focused learning capability in translating the use of marketing controls into firm performance. Thereby, our study responds to recent calls to examine the underlying mechanisms related to how marketing controls influence firm performance (e.g., Lee et al., 2015), especially from an organizational learning perspective (e.g., Turner & Makhija, 2006). Recent studies emphasize the need for firms to develop market-sensing capabilities because firms with such capabilities are more responsive to external opportunities and threats, and are better able to adapt to the changing market and succeed in new product development (Weerawardena et al., 2015; Zhang et al., 2015). This study not only echoes this emphasis by empirically validating the positive impact of market-focused learning capability on firm performance, but also extends our understanding of how to harness such capability. While previous studies assert that formal routines, structure, or organizational practices can affect a firm's market-focused learning capability (Ayers et al., 2001; Conner & Prahalad, 1996), our study empirically supports this assertion and additionally shows that informal controls serve to reinforce this impact on such capability.

Second, our study amplifies the argument that a combination of high formal and high informal controls is beneficial for firm performance (Cravens et al., 2004; Jaworski et al., 1993). Previous studies argue that market-focused learning requires a sharing, collaborative culture as well as open discussions and interaction across departments (Baker & Sinkula, 2002). Our study supports and extends this argument by showing that informal controls enhance the impact of formal controls on market-focused learning capability and thereby, firm performance. Put differently, informal controls are deemed a necessary, albeit not sufficient, condition for both market-focused learning and firm performance (Mahoney, Kimball, & Koivu, 2009). To some extent, our empirical account provides justification for firms' traditional focus on formal controls (Jaworski et al., 1993). However, this should not undermine the role of informal controls in generating firm performance. In line with recent studies (e.g., Frösén et al., 2016; Kumar et al., 2011), our study implies that, though informal controls do not guarantee high firm performance, they still serve as an important prerequisite for superior firm performance.

Third, Frösén et al. (2016) point out that there is no "one-size-fits-all" marketing control mechanism for all firms and that some marketing control configurations are applicable only to certain contexts. Echoing these points, we find strong empirical support for the performance implications of marketing controls depending on business strategy. For instance, formal controls are found to be more beneficial for firms with a clear strategy (either cost leadership or differentiation) than those with a dual strategy (focusing on both). One potential reason is that there is a mismatch between formal controls and a dual strategy: while formal controls allow firms to reduce task ambiguity and conflicts of interests (Joshi & Randall, 2001), the adoption of a dual strategy may

Table 7
Examples of firms belonging to each configuration.

Configuration (Model ii)	Example	Industry	Description	Size	Target market	Strategy	Output control	Process control	Cultural control	Professional control	Market-focused learning
C1	i	Manufacturing	Supplier of roofing and cladding materials to the building industry	Small	B2B	Differentiation	No	Yes	Yes	Yes	Yes
	ii	Manufacturing	Supplier of domestic heating oil products	Small	B2C	Cost leadership/ differentiation	No	No	Yes	Yes	Yes
	iii	Retailing	Wholesaler of electrical appliances	Small	B2B	Differentiation	Yes	No	Yes	Yes	Yes
	iv	Retailing	Seller of cars and motorbikes (both new and used)	Large	B2C	Differentiation	Yes	No	Yes	Yes	Yes
	v	Professional services	Provider of front and back office outsourcing	Large	B2B	Differentiation	No	No	Yes	Yes	Yes
C2	vi	Professional services	Chamber of commerce	Small	B2B	Cost leadership	No	Yes	Yes	Yes	Yes
	vii	Manufacturing	Wholesaler of pharmaceuticals	Large	B2C	Differentiation	Yes	Yes	Yes	Yes	No
	viii	Logistics	Provider of logistics and warehousing	Small	B2C	Differentiation	Yes	Yes	Yes	Yes	No
	ix	Professional services	Provider of information technology services	Large	B2B	Differentiation	Yes	Yes	Yes	Yes	No

diminish these benefits because it requires firms to focus on various directions and involve different resources and arrangements (Aulakh et al., 2000). However, our results show that informal controls seem particularly beneficial for firms with a dual strategy. This is in line with Kyriakopoulos and Moorman (2004), in which firms with high informal controls (i.e., a market-oriented culture) are found to yield superior performance by pursuing contradictory strategies.

In addition, our configuration analysis shows that firms with a cost leadership strategy can yield better performance outcomes by using process controls than those with a differentiation strategy, further highlighting the contingent effect of business strategy on the effectiveness of marketing controls. These results all underscore that firms should adjust their control structure to match the business strategy they adopt (Olson et al., 2005; Vorhies & Morgan, 2003).

5.2. Managerial implications

This study provides management teams with actionable insights into how to match marketing controls with business strategies to improve market-focused learning capability and firm performance. First, the direct positive impact of formal controls on firm performance and market-focused learning capability indicates that firms should consider formal marketing controls as the backbone of their control mechanisms. Output and process controls serve to set department-level goals to guide employee behavior as well as to provide real-time feedback to the marketing department. Accordingly, marketing metrics targeting both processes and outcomes, including customer satisfaction, conversions, and market coverage, but also sales, profit margins, and ROI, should be monitored periodically.

Second, our findings also suggest that although informal controls per se have no direct impact on market-focused learning capability or firm performance, they serve as 'hygiene factors' reinforcing the impact of formal controls on market-focused learning. Thus, in order to reap the full benefits from formal controls, firms should combine them with informal controls. Put differently, the combination of formal and informal controls still yields the highest performance gains. Whereas formal controls serve to define and clarify employees' expected output and behaviors, informal controls help create shared organizational culture, and values to motivate employees to act according to organizational goals.

Third, our study finds that a higher level of formal and informal controls does not always lead to better outcomes. This relationship depends on the adopted business strategy; there are no one-size-fits-all templates that would work equally well across firms, but the control structure within each firm should be carefully aligned with its business strategy. For instance, firms with a dual strategy should emphasize informal controls more compared to firms following either a clear cost leadership strategy or a clear differentiation strategy.

Finally, our study suggests that the value of any control structure is ultimately reaped via its contribution to market-focused learning capability. Thus, particular attention should be paid on how the control structure is implemented within the firm to enhance market-focused learning. This means ensuring that the feedback mechanisms and metric information reach all relevant levels and departments of the organization, that all units and departments share the same organizational culture, and that all goals and reward systems are aligned across the entire organization.

5.3. Limitations and future research

No empirical study is without limitations; nevertheless, limitations provide valuable avenues for future research. Our study represents a first attempt to shed light on the mechanisms through which marketing controls enhance firm performance in practice. In the present study, we concentrate only on market-focused learning capability as an important mediator in the marketing controls-firm performance relationship.

Future studies should, however, also address alternative mechanisms, such as alignment of the goals and activities of departments and levels across the organization, and/or budget allocations across organizational functions. Furthermore, our study only includes business strategy as a moderator. Future research may extend the examination to other environmental or organizational factors, such as a firm's market position, industry, or target market.

Second, the cross-sectional design adopted in this study prevents us from making strong causal claims (Bollen, 1989). Accordingly, future research could adopt a longitudinal design to confirm the suggested causality as well as to include temporality into the investigation. It is well known that the time frame in which diverse marketing actions affect firm performance varies; similarly, the time lag required for individual control types to bear fruit may vary.

Third, all our data points come from firms operating in the Irish context, which is why our results should be generalized to other geographical and cultural contexts with caution. Empirical evidence from other countries and comparisons between different country contexts would help to clarify the exact nature (context specific vs. universal) of the identified relationships and establish a general theory of the mechanisms of the marketing controls-firm performance relationship. In particular, mechanisms related to the different marketing controls in an emerging market setting would call for further research.

Acknowledgement

We thank the Editor Eric Boyd and the two anonymous reviewers for their constructive suggestions and great support throughout the review process. The authors are also grateful to Dr. Yuhui Gao, the supervisor of Dr. Xiaoning Liang at Dublin City University, for her insightful comments on the early versions of this manuscript. The authors would also like to thank the anonymous reviewers and participants from the 46th European Marketing Academy Conference for their valuable feedback. We also acknowledge the DCUBS Northeastern University Postgraduate Research Scholarship for the support for this study.

References

Aiken, L. S., West, S. G., & Reno, R. R. (1991). *Multiple regression: Testing and interpreting interactions.* California: Sage.

Ambler, T., Kokkinaki, F., & Puntoni, S. (2004). Assessing marketing performance: Reasons for metrics selection. *Journal of Marketing Management, 20*(3/4), 475–498.

Anderson, E., & Oliver, R. L. (1987). Perspectives on behavior-based versus outcome-based salesforce control systems. *Journal of Marketing, 51*(4), 76–88.

Auh, S., & Menguc, B. (2013). Knowledge sharing behaviors of industrial salespeople. *European Journal of Marketing, 47*(8), 1333–1355.

Aulakh, P., Kotabe, M., & Teegen, H. (2000). Export strategies and performance of firms from emerging economies: Evidence from Brazil, Chile, and Mexico. *Academy of Management Journal, 43*(3), 342–361.

Ayers, D. J., Gordon, G. L., & Schoenbachler, D. D. (2001). Integration and new product development success: The role of formal and informal controls. *Journal of Applied Business Research, 17*(2), 133–148.

Baker, W. E., & Sinkula, J. M. (2002). Market orientation, learning orientation and product innovation: Delving into the organization's black box. *Journal of Market-Focused Management, 5*(1), 5–23.

Beal, R. M., & Yasai-Ardekani, M. (2000). Performance implications of aligning CEO functional experiences with competitive strategies. *Journal of Management, 26*(4), 733–762.

Bello, D. C., & Gilliland, D. I. (1997). The effect of output controls, process controls, and flexibility on export channel performance. *Journal of Marketing, 61*(1), 22–38.

Bollen, K. A. (1989). A new incremental fit index for general structural equation models. *Sociological Methods & Research, 17*(3), 303–316.

Brashear, T. G., Manolis, C., & Brooks, C. M. (2005). The effects of control, trust, and justice on salesperson turnover. *Journal of Business Research, 58*(3), 241–249.

Caruana, A., Morris, M. H., & Vella, A. J. (1998). The effect of centralization and formalization on entrepreneurship in export firms. *Journal of Small Business Management, 36*(1), 16–29.

Clark, B. H. (2001). A summary of thinking on measuring the value of marketing. *Journal of Targeting, Measurement and Analysis for Marketing, 9*(4), 357–369.

Conner, K. R., & Prahalad, C. K. (1996). A resource-based theory of the firm: Knowledge versus opportunism. *Organization Science, 7*(5), 477–501.

Cravens, D. W., Lassk, F. G., Low, G. S., Marshall, G. W., & Moncrief, W. C. (2004). Formal and informal management control combinations in sales organizations. *Journal of Business Research, 57*(3), 241–248.

Crossan, M. M., & Apaydin, M. (2010). A multi-dimensional framework of organizational innovation: A systematic review of the literature. *Journal of Management Studies, 47*(6), 1154–1191.

Day, G. S. (1994). The capabilities of market-driven organizations. *Journal of Marketing, 58*(4), 37–52.

Day, G. S. (2006). Aligning the organization with the market. *MIT Sloan Management Review, 48*(1), 41–49.

Day, G. S. (2011). Closing the marketing capabilities gaps. *Journal of Marketing, 75*(4), 183–195.

De Luca, L. M., & Atuahene-Gima, K. (2007). Market knowledge dimensions and cross-functional collaboration: Examining the different routes to product innovation performance. *Journal of Marketing, 71*(1), 95–112.

Dillman, D. A. (2011). *Mail and Internet surveys: The tailored design method-2007 update with new Internet, visual, and mixed-mode guide.* New Jersey: John Wiley & Sons.

Drazin, R., & Howard, P. (1984). Strategy implementation - a technique for organizational design. *Columbia Journal of World Business, 19*(2), 40–46.

Dul, J. (2016). Identifying single necessary conditions with NCA and fsQCA. *Journal of Business Research, 69*(4), 1516–1523.

Enterprise Strategy Group (2004). Ahead of the curve: Ireland's place in the global economy. https://dbei.gov.ie/en/Publications/Publication-files/Forf%C3%A1s/Enterprise-Strategy-Group-Report-Full-Report.pdf, Accessed date: 12 December 2013.

Fiss, P. C. (2007). A set-theoretical approach to organizational configurations. *Academy of Management Review, 32*(4), 1180–1198.

Fiss, P. C. (2011). Building better causal theories: A fuzzy set approach to typologies in organization research. *Academy of Management Journal, 54*(2), 393–420.

Flaherty, K. E., & Pappas, J. M. (2012). Control mechanisms, idea transfer, and performance in sales organizations. *Industrial Marketing Management, 41*(5), 841–848.

Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research, 18*(3), 382–388.

Frösén, J., Luoma, J., Jaakkola, M., Tikkanen, H., & Aspara, J. (2016). What counts versus what can be counted: The complex interplay of market orientation and marketing performance measurement. *Journal of Marketing, 80*(3), 60–78.

Frösén, J., Tikkanen, H., Jaakkola, M., & Vassinen, A. (2013). Marketing performance assessment systems and the business context. *European Journal of Marketing, 47*(5/6), 715–737.

Garrett, R. P., Covin, J. G., & Slevin, D. P. (2009). Market responsiveness, top management risk taking, and the role of strategic learning as determinants of market pioneering. *Journal of Business Research, 62*(8), 782–788.

Gebhardt, G. F., Carpenter, G. S., & Sherry, J. F., Jr. (2006). Creating a market orientation: A longitudinal, multifirm, grounded analysis of cultural transformation. *Journal of Marketing, 70*(4), 37–55.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). New Jersey: Pearson Prentice Hall.

Homburg, C., Artz, M., & Wieseke, J. (2012). Marketing performance measurement systems: Does comprehensiveness really improve performance? *Journal of Marketing, 76*(3), 56–77.

Homburg, C., Wieseke, J., & Hoyer, W. D. (2009). Social identity and the service–profit chain. *Journal of Marketing, 73*(2), 38–54.

Jaworski, B. J. (1988). Toward a theory of marketing control: Environmental context, control types, and consequences. *Journal of Marketing, 52*(3), 23–39.

Jaworski, B. J., & MacInnis, D. J. (1989). Marketing jobs and management controls: Toward a framework. *Journal of Marketing Research, 26*(4), 406–419.

Jaworski, B. J., Stathakopoulos, V., & Krishnan, H. S. (1993). Control combinations in marketing: Conceptual framework and empirical evidence. *Journal of Marketing, 57*(1), 57–69.

Joshi, A. W., & Randall, S. (2001). The indirect effects of organizational controls on salesperson performance and customer orientation. *Journal of Business Research, 54*(1), 1–9.

Kang, M., Wu, X., Hong, P., & Park, Y. (2012). Aligning organizational control practices with competitive outsourcing performance. *Journal of Business Research, 65*(8), 1195–1201.

Katsikeas, C. S., Morgan, N. A., Leonidou, L. C., & Hult, G. T. M. (2016). Assessing performance outcomes in marketing. *Journal of Marketing, 80*(1), 1–20.

Khrennikov, I., & Thesig, G. (2014). Where the delivery man gives fashion advice. *Bloomberg business week. 4366. Bloomberg business week* (pp. 21–23).

Kim, N., & Atuahene-Gima, K. (2010). Using exploratory and exploitative market learning for new product development. *Journal of Product Innovation Management, 27*(4), 519–536.

Knight, G. (2000). Entrepreneurship and marketing strategy: The SME under globalization. *Journal of International Marketing, 8*(2), 12–32.

Kumar, V., Jones, E., Venkatesan, R., & Leone, R. P. (2011). Is market orientation a source of sustainable competitive advantage or simply the cost of competing? *Journal of Marketing, 75*(1), 16–30.

Kyriakopoulos, K., & Moorman, C. (2004). Tradeoffs in marketing exploitation and exploration strategies: The overlooked role of market orientation. *International Journal of Research in Marketing, 21*(3), 219–240.

Le Bon, J., & Merunka, D. (2006). The impact of individual and managerial factors on salespeople's contribution to marketing intelligence activities. *International Journal of Research in Marketing, 23*(4), 395–408.

Lee, J. Y., Kozlenkova, I. V., & Palmatier, R. W. (2015). Structural marketing: Using organizational structure to achieve marketing objectives. *Journal of the Academy of Marketing Science, 43*(1), 73–99.

Li, C. B., & Li, J. J. (2008). Achieving superior financial performance in China:

Differentiation, cost leadership, or both? *Journal of International Marketing, 16*(3), 1–22.
Lindell, M. K., & Whitney, D. J. (2001). Accounting for common method variance in cross-sectional research designs. *Journal of Applied Psychology, 86*(1), 114–121.
Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001). Handling nonresponse in social science research. *Journal of Agricultural Education, 42*(4), 43–53.
Liu, S. S., Luo, X., & Shi, Y. Z. (2002). Integrating customer orientation, corporate entrepreneurship, and learning orientation in organizations-in-transition: An empirical study. *International Journal of Research in Marketing, 19*(4), 367–382.
Mahoney, J., Kimball, E., & Koivu, K. L. (2009). The logic of historical explanation in the social sciences. *Comparative Political Studies, 42*(1), 114–146.
Miao, C. F., & Evans, K. R. (2012). Effects of formal sales control systems: A combinatory perspective. *International Journal of Research in Marketing, 29*(2), 181–191.
Olavarrieta, S., & Friedmann, R. (2008). Market orientation, knowledge-related resources and firm performance. *Journal of Business Research, 61*(6), 623–630.
Olson, E. M., Slater, S. F., & Hult, G. T. M. (2005). The performance implications of fit among business strategy, marketing organization structure, and strategic behavior. *Journal of Marketing, 69*(3), 49–65.
O'Sullivan, D., & Abela, A. V. (2007). Marketing performance measurement ability and firm performance. *Journal of Marketing, 71*(2), 79–93.
Ouchi, W. G. (1980). Markets, bureaucracies, and clans. *Administrative Science Quarterly, 25*(1), 129–141.
Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology, 63*(1), 539–569.
Porter, M. E. (1980). *Competitive strategy: Techniques for analyzing industries and competition.* New York: Free Press.
Ragin, C. C. (2008). *Redesigning social inquiry: Fuzzy sets and beyond.* Chicago: University of Chicago Press.
Schepers, J., Falk, T., Ruyter, K. D., Jong, A. D., & Hammerschmidt, M. (2012). Principles and principals: Do customer stewardship and agency control compete or complement when shaping frontline employee behavior? *Journal of Marketing, 76*(6), 1–20.
Sheth, J. N., & Sisodia, R. S. (2002). Marketing productivity: Issues and analysis. *Journal of Business Research, 55*(5), 349–362.
Short, J. C., Payne, G. T., & Ketchen, D. J. (2008). Research on organizational configurations: Past accomplishments and future challenges. *Journal of Management, 34*(6), 1053–1079.
Skarmeas, D., Leonidou, C. N., & Saridakis, C. (2014). Examining the role of CSR skepticism using fuzzy-set qualitative comparative analysis. *Journal of Business Research, 67*(9), 1796–1805.
Skarmeas, D., Lisboa, A., & Saridakis, C. (2016). Export performance as a function of market learning capabilities and intrapreneurship: SEM and FsQCA findings. *Journal of Business Research, 69*(11), 5342–5347.
Slater, S. F., & Narver, J. C. (1995). Market orientation and the learning organization. *Journal of Marketing, 59*(3), 63–74.
Tóth, Z., Thiesbrummel, C., Henneberg, S. C., & Naudé, P. (2015). Understanding configurations of relational attractiveness of the customer firm using fuzzy set QCA. *Journal of Business Research, 68*(3), 723–734.
Turner, K. L., & Makhija, M. V. (2006). The role of organizational controls in managing knowledge. *Academy of Management Review, 31*(1), 197–217.
Verhoef, P. C., & Leeflang, P. S. H. (2009). Understanding the marketing department's influence within the firm. *Journal of Marketing, 73*(1), 14–37.
Von Hippel, E., Thomke, S., & Sonnack, M. (1999). Creating breakthroughs at 3M. *Harvard Business Review, 77*, 47–57.
Vorhies, D. W., & Morgan, N. A. (2003). A configuration theory assessment of marketing organization fit with business strategy and its relationship with marketing performance. *Journal of Marketing, 67*(1), 100–115.
Vorhies, D. W., & Morgan, N. A. (2005). Benchmarking marketing capabilities for sustainable competitive advantage. *Journal of Marketing, 69*(1), 80–94.
Walker, O. C., Jr., & Ruekert, R. W. (1987). Marketing's role in the implementation of business strategies: A critical review and conceptual framework. *Journal of Marketing, 51*(3), 15–33.
Weerawardena, J., Mort, G. S., Salunke, S., Knight, G., & Liesch, P. W. (2015). The role of the market sub-system and the socio-technical sub-system in innovation and firm performance: A dynamic capabilities approach. *Journal of the Academy of Marketing Science, 43*(2), 221–239.
Weerawardena, J., O'Cass, A., & Julian, C. (2006). Does industry matter? Examining the role of industry structure and organizational learning in innovation and brand performance. *Journal of Business Research, 59*(1), 37–45.
Woodside, A. G. (2013). Moving beyond multiple regression analysis to algorithms: Calling for adoption of a paradigm shift from symmetric to asymmetric thinking in data analysis and crafting theory. *Journal of Business Research, 66*(4), 463–472.
Yan, A., & Gray, B. (1994). Bargaining power, management control, and performance in United States-China joint ventures: A comparative case study. *Academy of Management Journal, 37*(6), 1478–1517.
Zhang, H., Wu, F., & Cui, A. S. (2015). Balancing market exploration and market exploitation in product innovation: A contingency perspective. *International Journal of Research in Marketing, 32*(3), 297–308.

Xiaoning Liang is an assistant professor of Marketing at Trinity Business School, Trinity College Dublin, the University of Dublin, Ireland. Before Joining Trinity Business School, Xiaoning worked as a research assistant on the EU funded Horizon 2020 Cloud Lightning project and as a post-doc researcher at the Irish Centre for Cloud Computing and Commerce (IC4). Her research interests centre on marketing performance measurement, marketing analytics, digital marketing, marketing controls and marketing capabilities. Her work has been published in Journal of Business Research, Asian Journal of Technology Innovation and Displays as well as many leading international marketing conferences.

Johanna Frösén is Associate Professor at Hanken School of Economics in Helsinki, Finland and at St. Petersburg State University, Graduate School of Management in St. Petersburg, Russia. She holds a Doctorate from Aalto University School of Business in Helsinki, Finland. Prior to joining Hanken, Johanna worked as Assistant Professor and CEMS Academic Director at St. Petersburg State University, Graduate School of Management. She has also worked as Researcher and Project Coordinator at Aalto University School of Business. She has held Visiting Scholarships at the National University of Singapore Business School in Singapore and the University of California Riverside, School of Business Administration in California. Johanna's research concentrates around strategic marketing: marketing performance, marketing metrics, marketing controls, marketing analytics, strategic orientations, and organizational capabilities. Her research has been published in Journal of Marketing, Industrial Marketing Management, Journal of Business Research, European Journal of Marketing, and Journal of Marketing Management, among others.