Market orientation, marketing capability, and new product performance: the moderating role of absorptive capacity

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Abstract

The recent marketing literature identifies market orientation and marketing capabilities as key concepts that firms should use to achieve their competitive advantages. Previous research also confirms cross effects of these dimensions in firms' performance. The present study extends the literature on this subject by introducing absorptive capacity (AC) as a moderator of the relationship among market orientation, the interaction of market orientation and marketing capability, and firms' new product performance. This study empirically examines the research model using survey data from 188 manufacturing firms in Sweden. The findings confirm previous studies that claim a positive relationship among market orientation, marketing capability, and new product performance. More importantly, the results indicate that AC positively moderates the relationship between market orientation and firms' new product performance. Furthermore, the findings suggest that experts should consider AC as a competitive factor in line with the complimentary effect of market orientation and marketing

capability. This consideration would contribute to explain better firm-related performance, such as new product performance.

Keywords: New product performance; market orientation; absorptive capacity; marketing capability; dynamic capability

1.   Introduction

The dynamic capability (DC) literature consistently focuses on the importance of marketing capabilities (MC), which the literature defines either as the sum of mid-level marketing activities (Vorhies & Morgan, 2005) or as higher-level marketing capabilities (Merrilees et al., 2011). MC can significantly affect the effectiveness of the marketing strategy implementation (Morgan et al., 2012) and thus overall firms' performance (Vorhies & Morgan, 2005). In this regard, Day's (2011) conceptual address of the subject suggests a widening gap between market complexity and organizations' marketing capabilities, and calls for a redefinition of these capabilities to add new adaptive capacities to anticipate market changes and become more responsive to them. To avoid rigidity, organizations should enhance such capabilities to acquire new and future-looking intelligence from the market and develop higher-level capabilities such as market sensing and customer-linking capabilities. The potential source of such intelligence is market orientation (MO), which the firm primarily deploys to scan and acquire market intelligence (Vorhies et al., 2011).

On the other hand, MO, which is the process of generating and disseminating market intelligence to create and offer better value to the customer (Kohli & Jaworski, 1990), is a source of advantage for the firm (Kirca et al., 2005; Zhou et al., 2009). MO is "inherently a learning orientation" (Hurley & Hult, 1998, p. 42). In contrast, Morgan et al. (2009) argue from a DC perspective that MO as a resource can only be effective to firm's performance

objectives with the support of complementary market-related organizational capabilities. This study concurs with the above resource-oriented arguments, which suggest a complementary relationship between MO and MC, as well as a combined effect of the two in enhancing firm performance (Morgan et al., 2009). However, this study proposes that these recent views cannot fully explain the DC-oriented marketing approach to competitiveness without considering the role and effect of another type of organizational capacity: absorptive capacity (AC). This capacity consists in absorbing and deploying knowledge in the organization; DC literature refers to AC as organizational DC (Floyd & Lane, 2000; Zahra & George, 2002).

MO is a learning orientation, or as Slater and Narver (1994) suggest, the combination of MO with a learning orientation results in better organizational performance. Slater and Narver (1994) equate MO with the process of learning, behavior change, and performance improvement. One of the components of MO is inter-functional coordination (Lukas & Ferrell, 2000), which is about the coordinated application of resources for generation and dissemination of market intelligence (Slater & Narver, 1994). The organizational learning and DC theories suggest that success of the process of intelligence gathering and deployment depends on the firm's AC (Javalgi et al., 2014) Therefore, this study proposes that AC plays a moderating role in the relationships between MO and the combined effect of MO and MC on firm performance, according to new product success.

This article's structure is as follows: after discussing the theoretical background, the article develops the hypotheses. Then, the article explains the method and presents the results of a statistical analysis. The study concludes with a discussion of key findings and directions for further research.

2.   **Theoretical framework and hypotheses**

The increasing level of market dynamics drives competition on innovation and new product introduction to new levels. In response, firms should pursue proper value-adding strategies and implementing them by acquiring and deploying resources to match their business environment (Ambrosini & Bowman, 2009; Lamore et al., 2013). DC theory explains and supports this approach to competitiveness, suggesting a new range of capabilities to implement new strategies and to make appropriate use of their limited resources (Eisenhardt & Martin, 2000). This theory posits that possession of such capabilities can differentiate firms in the competition from their rivals (Bingham et al., 2007; Teece, 2007). Dynamic capabilities involve complex sets of knowledge and skills, which play a coordinating and inter-functional role to reflect the emergent circumstances and reconfigure organizational resources and capabilities (Teece, 2007). Dynamic capabilities also support other organizational capacities, such as capturing value in the process (Katkalo et al., 2010), and reconfiguring or transforming resources and capabilities (Katkalo et al., 2010; Teece, 2007). Therefore, to support firm competitiveness, DC should deal with and manage various types of capabilities, which complement each other to lead to new and reshaped offerings to the market (Katkalo et al., 2010).

One kind of such capabilities is MO strategies of the firm, an approach for generation and dissemination of market intelligence (Kohli & Jaworski, 1990; Morgan et al., 2009). Morgan et al. (2009) propose that MO requires complementing market-relating organizational capabilities to enable firms to respond to the market intelligence they generate. Building on the theoretical ground, the research model (Figure 1) aims to undertake an empirical research on the subject. The model posits that two sets of complementary capabilities in the organization, namely MO and MC, influence firms' competitive performance in innovation and new product performance (NPP). Furthermore, this study expects a combined effect of

MO and MC on NPP, while a third type of organizational capability, AC, moderates both the effect of MO and the combined effects of MO and MC on NPP. The article further formulates theoretical propositions for empirical examination.

Figure 1 here.

2.1. *MO, MC, and their combined effect on NPP*

MO strategies of the firm are largely about the ongoing monitoring of customers' current and latent needs and market and competition conditions. Using MO, firms prepare and respond to these needs by innovating and introducing appropriate products and services (Atuahene-Gima et al., 2005). MO therefore primarily aims at generation and dissemination of proper market intelligence (Kohli & Jaworski, 1990; Morgan et al., 2009) to give the firm a knowledge advantage (Morgan et al., 2009). Numerous studies find a positive association between MO and business and innovation performance (e.g.. Gonzalez-Benito et al., 2009; Kirca et al., 2005; Laforet, 2008). The knowledge advantage of the firm leads to more relevant and superior products to address the markets' circumstances (Slater & Narver, 1994). Therefore:

H1: The firm's market orientation has a positive relation with the firm's NPP.

Research shows concern over the view that capabilities such as MO can have the expected influence in the absence of other complementing capabilities. For instance, Ketchen et al. (2007) find that MO (as a resource) only have potential value. Murray et al. (2011) argue that to capitalize on MO, firms need to take appropriate strategic actions. They propose that internal processes in relation to marketing (marketing capabilities) should be functional for MO to influence performance. Morgan et al. (2009) also refer to the less attended set of MC) which in fact are essential for deploying MO strategies. They consider MC a combination of mid-level marketing activities (Vorhies & Morgan, 2005) and higher-level

marketing capabilities (Merrilees et al., 2011), necessary for marketing strategy development and execution. These capabilities are in fact important resources for firms, supporting them in achieving superior performance (Morgan et al., 2009; Vorhies & Morgan, 2005). Therefore:

H2: The firm's marketing capabilities have a positive association with the firm's new product performance.

On the other hand, firms need strong and current market intelligence in their approaches and mechanisms to improve their marketing capabilities (Vorhies et al., 2011). The MO capabilities of the firm can provide new knowledge of the market, thus leading to improved and new customer-centered marketing capabilities. The combination of the previous arguments presents a two-way interaction of MO and MC. Morgan et al. (2009) refer to the potential interplay between firm 'know-what' knowledge resources and its complementary 'know-how' capabilities for deployment of resources. Therefore, the interaction of these two sets of capabilities would put the firm in a stronger position for introducing the real wants of the market and hence perform better than the rivals (Eisenhardt & Martin, 2000; Morgan et al., 2009). Organizational learning and DC theories both support the notion of such an effect. The underlying product of MO and MC is knowledge, which the firm absorbs, institutionalizes, and deploys giving the firm advantage and benefits of economies of scope (Danneels, 2007). Besides, as the DC theory proposes, one of the functions of DC is to present a complex set of capabilities which makes imitation difficult for the rivals (Teece, 2007). Morgan et al. (2009) argue that the combination of MO and MC provides such advantage, creating an obscured picture of the source of advantageous performance for the rivals, hence preventing competitors to follow quickly. Following Morgan et al. (2009) this study hypothesizes that:

H3: The combination of the firm's MO and MC positively affects the firm's NPP.

2.2.   AC and deployment of market intelligence

AC is an organization-level process that involves the acquisition and assimilation of external knowledge. The absorbed knowledge should enable the organization to adapt and evolve by reconfiguring its resources to meet current and anticipated needs and to respond to changes in firm's business environment (Zahra & George, 2002). As such, AC satisfies the criteria of a DC (Zahra & George, 2002). The general agreement is that AC is a multidimensional construct involving the ability to value, assimilate, and apply knowledge (Cohen & Levinthal, 1990). Scholars also define AC as the skills that the organization needs to deal with the tacit component of external knowledge, and the need to modify this capability to the benefit of the organization (Teece, 2007). Szulanski (1996) finds that lack of AC is a major setback for the firm to introduce improvement and best practice.

Researchers also find a causal relationship between AC's effectiveness and NPP of the firm (Yao et al., 2013). Javalgi et al. (2014) argue that collection of intelligence from the market is not the same as winning the market, and state that learning capacity and firm performance influence the effects of customer-oriented selling. MO should therefore contribute to the success of the firm by introducing new products, providing both the required intelligence and the capacity for assimilating and applying the absorbed knowledge. On the other hand, AC has an inter-functional coordination role in the application of resources for market intelligence generation (Lukas & Ferrell, 2000). Jansen et al.'s (2005) research finds a significant association between measures of inter-functional coordination and AC. Therefore: H4: Absorptive capacity positively moderates the relationship between market orientation and the firm's new product performance.

Finally, drawing on the discussion of the role and position of AC as a key in defining DC, the study's arguments about the complementary effects of resources and capabilities would lead to a further insight in the matter. Considering the arguments for the third research

hypothesis, from a DC perspective, marketing capabilities and market intelligence complement each other to lead to superior performance of the firm. MO brings required market intelligence into the approaches and mechanisms of MC, while MC gives means for deploying the customer-oriented decisions taken after the intelligence collection in the MO process. This study also argues that the know-what advantage arising from MO, to be effective, requires support from organizational capacity for learning and assimilation of knowledge. This means that the know-what advantage of the firm reflects in its AC, suggesting a complementary effect of the three factors, MO-MC-AC, which collectively contribute to the performance of the firm's new products.

H5: The interaction among firm's MO, MC, and AC positively affects the firm's NPP.

3.   Method

3.1.   *Sample and data collection*

The authors collect primary data for testing the research hypotheses via an online questionnaire survey of Swedish manufacturing firms, using Swedish Business Directory as a sampling frame. Professional translators translate the questionnaire from English into Swedish and again into English to reduce concern regarding the face validity of measures. To further ensure the content and face validity of the measures, the authors conduct seven in-depth interviews with academic peer and manufacturing managers to confirm the relevance and completeness of items present in the research questionnaire. Data collection takes place in early 2015. The vice presidents and marketing managers of 720 firms received an email with the link to the questionnaire. From this process, 188 usable questionnaires result, demonstrating a response rate of 26 %. The responding companies belong to various manufacturing sectors, including metal, automotive parts, medical, engineering manufacturing, food, and plastic, and their sizes ranged from 18 to 14,500 employees.

To check the possibility of common method bias, this study run a variant of Harman's one factor test (Malhotra et al., 2006). This test loaded all items into one common factor resulting in a very poor fit ($X^2_{(df=275)}$ = 1053.69, CFI = 0.73, NFI = 0.67), suggesting that common method bias is not problematic.

3.2. Measures

The five-item scales of new product performance derive from the study of Langerak et al. (2004), which reflects the financial and market-related performance of firm new product. For the measures of MO dimensions, the study adopts 16 item scales from Morgan et al. (2009) and Jaworski and Kohli (1993). The MO items focus on behaviors related to firms' information acquisition, information dissemination, and information responsiveness. The study measured marketing capability with a six-item scale from Vorhies and Morgan (2005) and Ngo and O'Cass (2012). These six items collectively measure market-related capabilities such as product development, pricing, channel management, marketing communications, market planning, and marketing implementation. The study measures AC using six items originally by Tu et al. (2006) aiming to measure employee knowledge, manager knowledge, communications network, communications climate, and knowledge scanning. The study also includes firm size and age as control variables.

4.   Analysis

4.1.   Reliability, validity, and descriptive statistics

LISREL 8.8 uses confirmatory factor analysis (CFA) with a covariance matrix as input and maximum likelihood estimation to purify the measurements and to evaluate the dimensionality, validity, and reliability of the measurement scales. The final model after removing seven items with poor performance, produces a good fit, with $X^2_{df=260}$ = 572.05;

CFI = 0.97; NFI = 0.94; NNFI = 0.96; IFI = 0.97; SRMR = 0.057 and RMSEA = 0.08. The composite reliability (CR) and average variances (AVE) for each research construct are higher than the cut-off points of 0.7 and 0.5 respectively (Bagozzi et al., 1991). Furthermore, all item loadings in the model are above 0.6 and significant at the 0.01, representing convergent validity (Bagozzi et al., 1991). Table 1 shows the summary of measurement analysis.

Table 1 here.

The study also evaluates discriminant validity, comparing the squared correlation of two constructs against their individual AVE (Fornell & Larcker, 1981). Table 2 shows that, for all constructs, the AVE is higher than the squared inter-construct correlation estimates (SIC), indicating that the model's constructs satisfy the criteria of discriminant validity.

Table 2 here.

4.2.   Results

The study tests the hypothesized relationships using hierarchical regression analysis. The study centers all measures (except for those of the NPP as dependent variable) to avoid multi-collinearity problems (Mason & Perreault, 1991). Model 1 contains control variables (i.e., firm age and number of employees). Next, the analysis introduces MO, marketing capability, and AC in model 2. Then, the interaction terms MO×MC as well as MO×AC incorporate into model 3. Finally, model 4 contains the interaction term MO×MC×AC. Table 3 shows the results. Although the addition of the main factors in model 2 increases the R^2 by 0.44, the addition of interaction terms MO×MC and MO×AC (model 3) to model 2 further increases R^2 by 0.04. Furthermore, the addition of interaction term between MO×MC×AC (model 4) to model 3 increases R^2 by only 0.02. The F-values for the incremental R^2 values achieve a 0.05 level statistical significance.

In model 2, both MO and MC relate significantly to new product performance (MO: 0.41, $p < 0.001$; MC: 0.17, $p < 0.05$); thus supporting H1 and H2. After considering the interaction terms in model 3, the coefficient estimate for the interaction term MO×MC is positive but insignificant (0.03, $p > 0.05$); hence, the results fail to support H3. On the other hand, the coefficient estimate for the interaction term between MO and AC is significant (0.21, $p < 0.05$), claiming that AC positively moderates the relationship between MO and new product performance; thus, the result supports H4. Finally, in model 4, the coefficient estimate for the interaction term MO×MC×AC is positive and significant, which supports H5. In other words, the combined effect of MO, marketing capability, and AC further strengthens firm NPP.

Table 3 here.

5. Discussion and conclusions

This study contributes to both DC and Marketing Strategy literature by extending recent studies (i.e., Morgan et al., 2009) through investigating the relationships between MO, MC, AC, and NPP. Theoretically, this study finds that the role of organizational capacity for absorbing and assimilating the knowledge from external sources is key to understand the effects of MO on firm performance. Empirically, this finding finds support when AC acts as a complementary dimension to the areas of influence in NPP, from the point of view of previous research on complementary capability combinations (e.g., Morgan et al., 2009; Ngo & O'Cass, 2012).

The statistical analysis confirms previous research (e.g., Kirca et al., 2005), claiming that MO positively affects NPP (H1). MO is present in a set of skills and capabilities representing firms' knowledge assets (Kohli & Jaworski, 1990; Morgan et al., 2009), which not only result in new product success (Baker & Sinkula, 2005; Tsai et al., 2008), but also

facilitate other capabilities of firms to "become more distinctive (relative to the competition) over the long run, resulting in sustainable competitive advantage" (Kumar et al., 2011, p. 17). The confirmation of this effect in the present study, which takes place in a different context, complements the previous views and strengthens the support for resource-based and DC perspective. At the same time, despite the use of subjective measures, the confirmation of the hypotheses disagrees with Morgan et al.'s (2009) report. This result may owe to the focus on new product as the indication of firm performance and possible context effects. The managerial implication of this finding is that managers should encourage firms' information acquisition, information dissemination, and information responsiveness, to strengthen the new-product-related performance.

Furthermore, MC has a positive association with NPP (H2), which is in line with earlier studies in the marketing literature (e.g., Mu, 2015). MC are necessary for marketing strategy development and execution, which enables firms to achieve customer-related advantage with respect to customer satisfaction, relationship building, and retention (Ngo & O'Cass, 2012), resulting in superior firm performance such as NPP (Vorhies & Morgan, 2005). The managerial implication of this finding is that MC, as important market-related capabilities, are an essential element in facilitating firms' success in new product introduction, because these capabilities are valuable and difficult for competitors to imitate.

More importantly, the statistical results confirm the positive moderating effect of absorptive capacity on the relationship between MO and new product performance (H4). This result strongly confirms the organizational learning and dynamic capability perspective, which posit that success of firm process of intelligence gathering and deployment depend on firm capacity to absorb and exploit the received or collected knowledge (Javalgi et al., 2014). Thus, the MO-NPP association depends on the absorptive capacity of the firm. The high capacity of firms to identify, absorb, and assimilate relevant market information and

knowledge strengthens the effect of MO on firm product-related performance by offering innovative products to the market. Additionally, in DC theory, this result presents a clear support of the asset complementarity effects.

Although recent studies in marketing literature highlight the importance of complementary capability combinations (e.g., resources-capabilities and capabilities-capabilities) (Morgan et al., 2009; Ngo & O'Cass, 2012), this research's findings do not support the positive and significant effect of the interaction between MO and MC on NPP(H3). Although this result contrasts with Morgan et al.'s (2009) finding, the result supports the argument suggesting that experts should consider both AC and the complimentary effect of MO and MC to explain better firm performance such as NPP (H5). In other words, this study's findings suggest that firms' MO, such as market-based knowledge resource, marketing capabilities, and ability to absorb and exploit fruitful knowledge complement one another in a productive way and strengthen the firms' NPP.

The study also answers Morgan et al.'s (2009) suggestion to consider the quality of MO in the firm for its effects on firm performance. The study shows that the presence of AC would enhance the quality of MO, which finds confirmation when AC joins the combination of MO×MC, making the new combination (MO×MC×AC) associate significantly with firm NPP.

This study has a number of limitations that scholars may consider as opportunities for future research. Firms' subjective NPP is the dependent variable, which might have restricting effects on the outcome and the analysis. Drawing on dynamic capability theory, this research considers the role of MO, MC, AC, and their complementary effect to account NPP. Firms currently operate in a highly turbulent environment; therefore, future study may investigate the role of potential organizational strategic capabilities such as agility (Sharifi et al., 2006) and its combination with other organizational orientation (i.e., MO and supply chain

orientation) and capabilities and resources (i.e., MO and AC) in this context. In the same vein, the effects of environmental turbulence factors (market, competition, and technology turbulence) on the process of deploying MO, MC, and their interaction could provide further insight in the subject.

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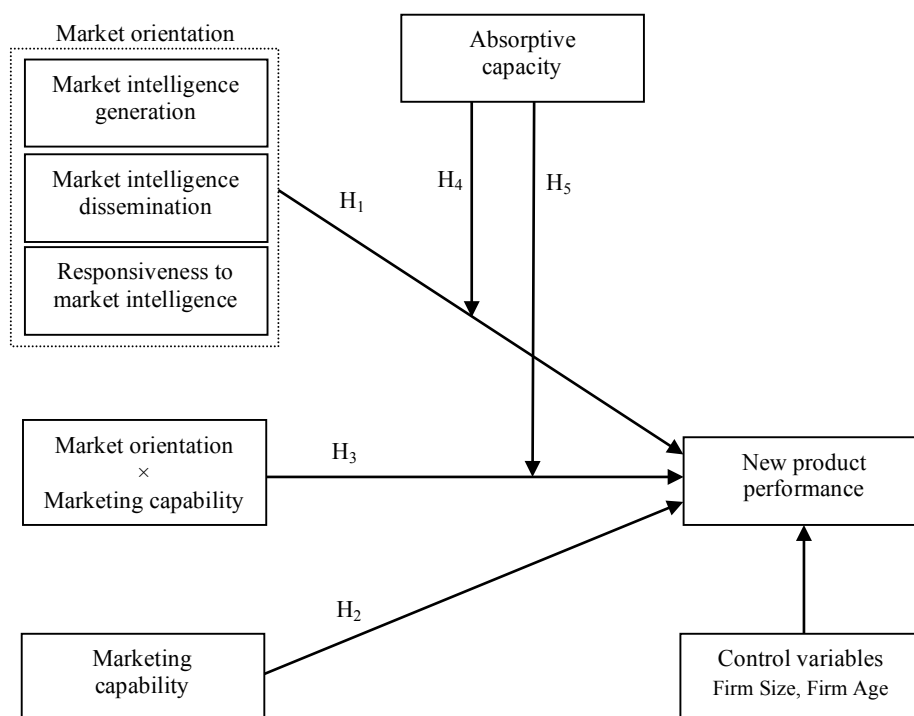
Figure 1. Conceptual framework

Table 1. Summary statistics of the measurement analysis

Variable	Mean	SD	Item Loading*	AVE	CR	Cronbach 's Alpha
New Product Performance	4.66	1.23	0.73-0.85	0.63	0.84	0.82
Market intelligence generation	5.18	1.28	0.65-0.78	0.53	0.82	0.81
Market intelligence dissemination	4.86	1.40	0.60-0.81	0.53	0.77	0.76
Responsiveness to market intelligence	5.51	1.22	0.66-0.83	0.52	0.81	0.81
Absorptive capacity	5.08	1.25	0.71-0.80	0.56	0.86	0.86
Marketing capability	5.46	1.31	0.76-0.88	0.66	0.92	0.92
Firm size	3.95	1.65	n/a	n/a	n/a	n/a
Firm Age	2.59	0.95	n/a	n/a	n/a	n/a

*item loadings after deleting values less than 0.6. The natural logarithm value was assigned to each control variables instead of the original value; Complete list of items and their loadings are available upon request.

Table 2. Squared inter-construct correlation estimates and related AVEs

	(1)	(2)	(3)	(4)	(5)	(6)
(1) New Product Performance	**0.63**					
(2) Market intelligence generation	0.13	**0.53**				
(3) Market intelligence dissemination	0.16	0.49	**0.53**			
(4) Responsiveness to market intelligence	0.17	0.38	0.33	**0.52**		
(5) Absorptive capacity	0.20	0.40	0.39	0.50	**0.56**	
(6) Marketing capability	0.21	0.36	0.34	0.41	0.44	**0.66**

Notes: The bold, underlined figures on the diagonal are AVEs.

Table 3. Hierarchical regression analysis

Variable	Model 1	Model 2	Model 3	Model 4	VIF
Size	-0.06 (-0.60)	-0.02 (-0.27)	-0.04 (-0.52)	-0.02 (-0.33)	1.37
Age	0.22 (2.34)*	0.02 (0.29)	0.03 (0.44)	0.03 (0.39)	1.44
MO		0.41 (4.78)***	0.35 (3.74)***	0.26 (2.67)**	2.95
AC		0.19 (2.09)*	0.14 (1.58)	0.07 (0.70)	2.67
MC		0.17 (2.05)*	0.19 (2.31)*	0.09 (1.06)	2.36
MOxAC			0.21 (2.46)*	0.15 (1.80)	2.16
MOxMC			0.03 (0.36)	0.03 (0.38)	2.29
MOxMCxAC				0.29 (2.59)*	3.88
R^2	0.04	0.48	0.52	0.54	
Adj-R^2	0.03	0.46	0.50	0.52	
F-Value	2.96	25.59***	21.53***	20.41***	

***, $p<0.001$; **, $p<0.01$, *, $p<0.05$; T-values are in parentheses.