Marketing and Innovative Capabilities as Complementary to Drive Firm Performance

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Abstract

While previous literature recognizes the importance of complementary capabilities to drive firm performance, there are claims regarding the difficulties of developing simultaneous capabilities because of firm resource constraints. Our goal is to discuss these contradictions by exploring the sequence in which marketing capabilities, i.e., architectural (strategic level) and specialized (operational level) develop innovative capability to improve firm performance in the SME setting where the resource capability scarcity is a typicall condition. The results show that architectural marketing capabilities and innovative capabilities complement each other to benefit firm results. This benefit does not occur in the case of specialized marketing capabilities. We shed light on what types of marketing capabilities are more effective to complement innovative capability and to drive firm performance and posit that capabilities complementarity may not be assumed as useful in all situations.

Keywords: Marketing Capabilities, Innovative Capability, Firm Performance

Track: Marketing Strategy & Theory

1. Introduction

Capabilities are in the main argument of the resource-based theory which supports that "the return potential of a firm's strategies depend on the attributes of that firm's resources and capabilities' (Barney, 2014, p. 25). Conceptualized as "complex bundles of skills and collective learning, exercised through organisational processes, that ensure superior coordination of functional activities" (Day, 1994, p. 38), capabilities are assumed as one important source of superior competitive advantage (Vorhies & Morgan, 2005). In this vein, capabilities has been explored in the marketing field in the last decades and improved the understanding about the role of marketing in enhancing performance (Morgan, 2012). Consequently, a growing body of research has focused on the relationship between marketing capabilities and performance and many of them has considered the additional support of innovation and other firm capabilities in this regard (Ngo & O'Cass, 2012; Sok, O'Cass, & Miles, 2016; Feng, Morgan, & Rego, 2017; Arunachalam, Ramaswami, Hermann, & Walker, 2018). The reasoning of complementary capabilities is in line with Penrose's argument who states that "exactly the same resource when used for different purposes or in different ways and in combination with different types or amounts of other resources provides a different service or set of services" (Penrose, 1959, p.25). Complementarities among firm capabilities can be crucial to deploy available resources which, although valuable, rare, inimitable, non-substitutable and beneficial to the firms that posses them, are not enough to match the dynamic market conditions faced by firms to drive business performance (Morgan, 2012).

However, despite previous literature recognizes the importance of complementary capabilities to drive firm performance (Helfat & Raubitschek, 2000; Feng et al., 2017), it is also argued that "the simultaneous development of different types of capabilities is often not feasible because of resource constraints" (Guo et al., 2018, p.80). Thus, determining which capabilities can be complemented has become an increasingly important issue. Marketing capabilities are highlighted in this context as having a "catalytic role in the value creation and value extraction links of the innovation pathway" (Arunachalam et al., 2018, p.745). When combined with innovative capabilities, they act as deployment mechanisms to realise firm performance (Arunachalam et al., 2018; Feng et al., 2017). Despite this complementary effect is highlighted, the understanding on which marketing capabilities a firm should focus when exploring the complementarities with other firm capabilities is commonly neglected. Moreover, no attention has been dedicated to explore marketing capabilities hierarchically. Considering different levels of marketing capabilities, Morgan (2012) notes that architectural marketing capabilities – at the strategic level (Hooley et al., 1999) – are processes that are used to select, integrate and orchestrate multiple specialized marketing capabilities – at the operational level (Hooley et al., 1999). Hence, intermediate marketing capabilities would be necessary to operationalize the results of architectural capabilities and transform them in feasible results. Thus, the understanding about the sequence in which marketing capabilities are developed and

combined with other firm capabilities to drive performance appears to be another important research issue. Notwithstanding this importance, it is not a common 'mindset' of research. Specifically, the knowledge about on which capabilities arrangement a firm should focus when exploring the firm innovative context is relatively narrow in particular in the SME setting. Evidence from recent literature highlight some of these perspectives in SMEs but the emphasis is frenquently on the impact of marketing capabilities on innovation outcomes or on the combination of product innovation capability and marketing capabilities (Arunachalam et al., 2018; Sok et al., 2016; O'Cass & Sok, 2014). However, what marketing capabilities are more important to develop innovative capabilities and, in turn, reinforce them to drive positive performance outcomes is still an unanswered question. We intend to fill this gap by exploring the sequence in which architectural (strategic level) and specialized (operational level) marketing capabilities develop innovative capability to improve firm performance. This study offers two main contributions to the marketing and innovation literature in this regard. First, it explores complementary firm capabilities and highlights what types of marketing capabilities are emphasised to complement innovative capabilities and drive firm performance which is a useful issue to understand marketplace performance outcomes (Ngo & O'Cass, 2012). Furthemore, as the development of all types of marketing capabilities is often not feasible because of resource constraints, identifying which marketing capabilities to develop is an important issue to overcome resource capability scarcity and improve growth (O'Cass & Sok, 2014). Second, it explores marketing capabilities hierarchically and discusses the sequence in which they deploy innovative capabilities to improve firm performance. The knowledge about on which level marketing capabilities impact innovative capabilities is a key issue to explain the resource allocation in the development and utilization of different marketing capabilities (Guo et al., 2018). This is particularly relevant in the presence of resource capability scarcity that is a typicall condition in the SME setting (O'Cass & Sok, 2014).

2. Theoretical Background and Study Hypotheses

Marketing capabilities are defined as "the specialized, architectural, cross-functional, and dynamic processes by which marketing resources are acquired, combined, and transformed into value offerings for target market(s)" (Morgan, 2012, p. 106). Overall, they help firms to reduce risks associated with opportunity seeking and can direct organisational attention toward innovations as well as enable customer acceptance of these innovations (Arunachalam et al., 2018). Architectural marketing capabilities - the focal point of our study - concern the processes involved in "selecting strategic marketing goals and formulations strategies to attain them and the implementation related-processes that facilitate the deployment of the multiple and inter-related resource inputs required to enact strategic marketing decisions" (Morgan, 2012, p.108). These capabilities represent the skills related to the competitive positioning decisions of a firm, which form "the core of a firm's marketing strategy", and can be placed in the second level of marketing

capabilities hierarchy (Hooley et al., 1999, p. 263). Previous literature states that well developed architectural marketing capabilities will improve the firm capacity of using networks for converting new product ideas into innovations as well as will improve the firm understanding and conversion of market opportunities to enjoy greater success and market effectiveness (Arunachalam et al., 2018; Vorhies, Morgan & Autry, 2009). Therefore, even though we assume that complementary capabilities can prevent firm capabilities imitation and are stronger to positively impact performance than in isolation (Ngo & O'Cass, 2012; Vorhies & Morgan, 2005), it is not possible to ignore the solely importance of the architectural marketing capabilities to enable the realization of strategy. Thus, we hypothesise:

H_1: Architectural marketing capabilities will positively influence firm performance.

Architectural marketing capabilities contribute to enlarge market opportunities for firms and improve their innovation potential (Arunachalam et al, 2018). These capabilities will support market learning that permeates the entire strategy process and will increase the market knowledge and the customer understanding, which are both "the main prerequisite for outcomes related to innovation" (Arunachalam et al., 2018, p.749). Thus, we adopt the position that, when complementing innovation capabilities, architectural marketing capabilities will have a stronger impact on performance than in isolation (Ngo & O'Cass, 2012). Innovation capabilities are defined as "the ability to continuously transform knowledge and ideas into new products, processes and systems for the benefit of the firm and its stakeholdes" (Huhtala et al., 2014, p. 237). They are innovation-creating and value-capturing capabilities that provide competitive advantage as they combine the abilities to monitor and acquire required technology resources and develop marketplace new products (Lew & Sinkovicz, 2013). Evidence from previous literature suggests that the level of some specific innovation capabilities, such as R&D capability, increases in the presence of strong marketing capability and this complementary effect will drive growth in markets (Feng et al., 2017). Therefore, we posit that:

H_2: Architectural marketing capabilities will positively influence firm performance through innovative capability.

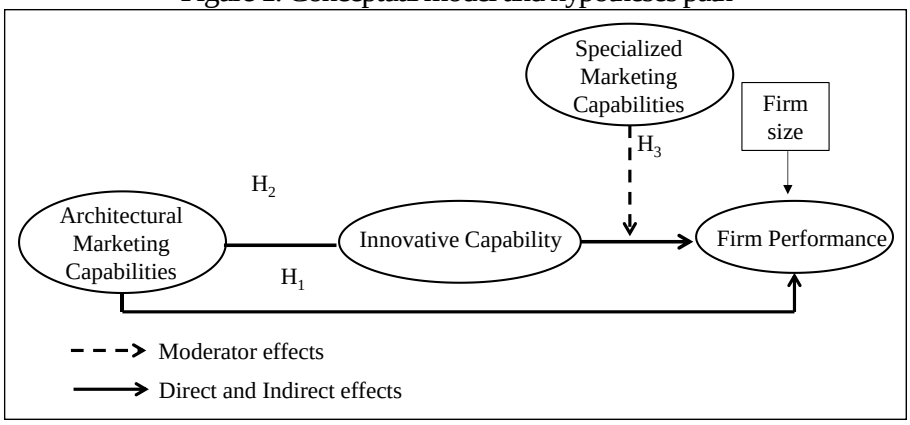
Specialized marketing capabilities can be placed in the third level of the marketing capabilities hierarchy as they are required to enable firms to develop offerings to meet the needs of the segments based on the marketing plan and target marketing communications to the buyers (Vorhies et al., 2009). At this level, "the concern is with highly specific marketing operations, tactics and activities that are deployed to achieve the desired competitive positioning" (Hooley et al., 1999, p. 265). Based on the classical marketing mix activities of product, promotion, pricing and distribution (Morgan, 2012), specialized marketing capabilities affect the ability of marketing to support successful market deployment of innovations (Arunachalam et al., 2018). These capabilities will facilitate product and customer functional-level performance (Sok et al., 2016) which ultimately will result in economic benefits (Arunachalam et al., 2018). Specialized marketing capabilities are

particularly important in firms highlighting differentiation-based product market strategy elements (Vorhies et al, 2009). Previous literature also notes the relevance of specialized marketing capabilities for innovation as these capabilities possess the adaptiveness to handle the typical market uncertainties of innovation launches (Arunachalam et al., 2018; Morgan, 2012). Thus, we hypothesise:

H_3: Specialized marketing capabilities will positively moderate the impact of innovative capability on firm performance.

The hypothesised relationships are showed in Figure 1.

Figure 1. Conceptual model and hypotheses path



3. Method

The sample was obtained from small and medium enterprises (SMEs) of ICT (Information and Communication Technologies) sector in Brazil. SMEs were selected because of their particularities in terms of innovation and marketing strategies. Although being relatively limited in resources, they seek for long-term success with their core assets such as innovative technology (Didonet et al., 2019). Moreover, systematic marketing efforts can be critical for SMEs in emerging markets in order to capture value from their innovative activities (Arunachalam et al., 2018). Marketing managers or owners were selected as the key informant given their involvement with marketing and innovation activities. A marketing research firm administered the survey, using experiencing interviewers as recommended by previous researches (see Arunachalam et al., 2018). A total of 401 questionnaires was administered by phone interviews from a pool of 2500 ICT companies in Brazil. Of the final sample, data from 320 firms were used to the analysis after eliminating large firms and checking for and eliminating missing values. Most of the firms are classified as micro and small firms (274 firms) following the Brazilian criteria of firm size (number of employees). Existing scales were used to measure all variables: Vorhies and Morgan's (2005) scale for architectural and specialized marketing capabilities (4P's); Lew and Sinkovicz's (2013) scale for innovative capabilities; Ngo and O'Cass' (2012) and Grisseman et al.'s (2013) for firm performance that it was measured using subjective data (Sok et al., 2016). All variables were measured using 10-point scales ranging from "complete disagree" to "complete agree". The correlation matrix of variables and descriptive results are

showed in Table 1. The results showed two correlations between .60 and .73, which can be considered reasonable for subsequent analysis (Lin & Chen, 2005). The variance inflation factor (VIF) of variables (ranging from 2.324 to 2.979) and the standardized residuals of the regression corroborate this previous condition.

Table 1. Correlation Matrix and Descriptives

Construct	1	2	3	4
1. Architectural Marketing Capability	1			
2. Market Development Capability	.73	1		
3. Specialized Marketing Capability	.64	.72	1	
4. Firm Performance	.52	.62	.57	1
Summary Statistics	**1**	**2**	**3**	**4**
Mean	7.07	7.43	7.1	6.5
SD	1.65	1.56	1.13	1.94
Coefficient Alpha	.97	.93	.92	.90

In addition, the result of Levene's test of equality of error variances (p-value = 0.809) showed that the homoscedasticity condition is satisfied. Size it was included as a control variable to control possible effects on firm performance (Prajogo et al., 2013). The Preacher and Hayes' (2008) procedure was used to test the hypotheses. Two regression models were run in order to test the mediating effect of innovative capability in the relationship between architectural marketing capabilities and firm performance (Model 1) and the moderation of specialized capabilities in the influence of innovative capabilities in firm performance (Model 2). The means of each variable were used to run the model with the exception of specialized marketing capabilities, which were categorized as a dummy variable considering its intensity (high and low level). The recommended 5,000 bootstrap samples for bias corrected bootstrap confidence intervals and a level of confidence of 95 percent was considered to run the model. Confidence intervals (CI) were used to confirm/reject hypotheses, with reference to the relevant p-values. In the case of CI, if an interval for an estimated coefficient does not include zero, a significant effect is assumed.

4. Findings and Discussion

The results of the tested model are presented in Table 2. Considering the hypothesised test model, the direct effect of architectural marketing capabilities on firm performance was not supported ($\beta = .142$; CI of 95% ranging from -.005 to .288) which leads us to reject H_1. Architectural marketing capabilities positively influence firm performance when innovative capability is taken as a mediator in the model. The positive and significant coefficient of .415 (CI of 95% ranging from .291 to .542) leads us to accept H_2. The market knowledge generated by architectural marketing capabilities can helps to reduce the risk of opportunity seeking by directing organisational attention toward market-relevant innovations, which can be considered as resources to be processed by innovative capabilities and be translated in positive results

(Arunachalam et al., 2018).

Table 2. Results of the tested model

Path in the Theoretical Model	Hypotheses	Effect (β)	SE (Boot)	BootLLCI 95%	BootULCI 95%
Arch Mkt Cap -> Firm Perf	H_1 (+) No support	.142^{ns}	.074	-.005	.288
Arch Mkt Cap -> Innov Cap -> Firm Perf	H_2 (+) Support	.415**	.065	.291	.542
Moderation of Specialized Mkt Cap (0=low; 1=high)		**Effect (β)**	**SE (Boot)**	**BootLLCI 95%**	**BootULCI 95%**
Innov Cap -> Firm Perf Low	H_{3a} (+) No support	.596**	.085	.428	.763
High	H_{3b} (+) No support	.595**	.103	.392	.798
Note: r^2 increase due to interaction = .000 (p-value: .995)					
Direct Effects and Interaction Term		**Effect (β)**	**SE (Boot)**	**BootLLCI 95%**	**BootULCI 95%**
Arch Mkt Cap -> Innov Cap		.674***	.037	.602	.746
Size -> Innov Cap		.168^{ns}	.087	-.003	.339
Spec Mkt Cap -> Firm Perf		.707^{ns}	1.027	-1.314	2.729
Innov Cap -> Firm Perf		.596***	.085	.428	.763
Size -> Firm Perf		.417***	.122	.177	.657
Innov Cap x Spec Mkt Cap		-.001^{ns}	.133	-.262	.260

Notes: Boot=bootstrap sample size; CI=confidence interval; SE=standard error; ns=not significant; ***p<.00; **p<.05

Thus, innovative capabilities act as an important deployment mechanism of architectural marketing capabilities to improve firm performance (Ngo & O'Cass, 2012), i.e., they contribute to "a firm's creation of market opportunities and its commercialization of new products" (Lew & Sinkovicz, 2013, p. 18). Specilized marketing capabilities, in turn, do not function as catalytic to extract value from innovative capabilities and transform it in positive outcomes (Arunachalam et al., 2018), independently on its intensity (high or low levels). These findings are on the contrary to the expected and lead us to reject H_3. Although the values of estimates for low and high levels of specialized marketing capabilities are in line with H_3 (low level: β = .596; CI of 95% ranging from .428 to .763; high level: β = .595; CI of 95% ranging from .392 to .798), the r^2 increase is null and not significant (r^2 increase due to interaction=.000; p-value=.995). This result is reinforced by the null effect of the interaction between innovative capabilities and specialized marketing capabilities (β = -.001; CI of 95% ranging from -.262 to .260) and by the null effect of the specialized marketing capabilities on firm performance (β=.707; CI of 95% ranging from -1.314 to 2.729). This implies that marketing mix processes are not important to to support the success of innovation, which is represented by firm performance in our model. Two understandings can be highlighted in this regard. First, although marketing capabilities are assumed to interact with other capabilities within the firm and be often intertwined (Feng et al., 2017), it seems that it depend on how they are combined with others to deploy the available resources. Furthermore, the typical resource scarcity of SMEs (O'Cass & Sok, 2014) can implies that these firms will opt on "optimal resource allocation in the development and utilization of the different marketing capabilities" depending on firm and market condition (Guo et al., 2018, p. 80). Thus, specialized marketing

capabilities can not be the best option to be combined with innovative capabilities in the presence of another marketing capability, i.e., architectural. Second, as specialized marketing capabilities are assumed to operationalise innovations because these capabilities are likely to be better at communicating its unique and differentiated benefits, they are probably more effective at the end of the innovation pathway (Arunachalam et al., 2018) instead of reinforcing innovative capabilities. Innovative capabilities are placed before innovation outcomes and represent the continuous transformation of knowledge and ideas into new products (Huhtala et al., 2014), i.e., they are a "stepping-stone towards expediting the market growth of a firm" (Lew & Sinkovicz, 2013, p. 18). This market growth can be represented by the successful innovation outcomes at the end of the innovation pathway.

5. Conclusions, Implications and Future Research

As observed in previous literature, resources and capabilities are more effective to improve performance if they are deployed in a complementary way (Helfat & Raubitschek, 2000; Feng et al., 2017; Arunachalam et al., 2018). Our research findings reinforce this statement and show that architectural marketing capabilities positively influence firm performance through innovative capabilities, i.e., these two capabilities complement each other to benefit firm results. Otherwise, this benefit does not occur when specialized marketing capabilities are complementary to the innovative capability. Two interesting perspectives arise from these results and emphasise the contributions of this study to the literature. First, architectural and specialized marketing capabilities may not have the same importance to firm performance when complementing innovative capability, i.e., depending on the type of marketing capability, the capabilities complementarity is not effective to enhance performance. This shed light on what types of marketing capabilities are more effective to complement innovative capability and to drive firm performance and posit that, even though capabilities complementarities are assumed be beneficial to drive firm performance (O'Cass & Sok, 2014; Ngo & O'Cass, 2012), this complementarity may not be assumed as useful in all situations. This suggests that other variables and/or combinations may be needed to explain the complementarity which can be a further research direction. Second, when exploring marketing capabilities hierarchically and, from that point, establishing the sequence in which they complement innovative capability to drive firm performance, the study results emphasise on which hierarchical level marketing capabilities complement innovative capabilities. Although recognizing the importance of specialized marketing capabilities in operationalise innovations (Arunachalam et al., 2018), it seems that the operational level of marketing capabilities is not the best sequence to improve the effect of innovative capabilities in firm performance, i.e., higher order marketing capabilities (architectural capabilities) seem to be more important than operational ones in complementing such capabilities (Hooley et al., 1999). This suggests that the hierarchical level of marketing capabilities is an important issue to the understanding of the capabilities

complementarity which can be more relevant in the presence of resource capability scarcity that is a common characteristic of SMEs (O'Cass & Sok, 2014). This, in turn, may imply that resource scarcity is also an important variable to be explored when studying capabilities complementarities in different settings and different firm size.

The study provides some guidelines for SME owner/managers. Overall, it is suggested that the resource deployment through marketing and innovative capabilities is effective when complementing both capabilities in a strategic level. Thus, when emphasizing marketing capabilities to develop innovation, one important issue is to identify on which one a firm should focus to drive performance. Furthermore, the effect of the firm size in firm performance, as it was attested when testing the control variable in the model, calls attention to the fact that this complement may vary depending on the firm size, i.e., micro, small or medium size. Previous literature highlights differences between small and medium firms in terms of the adquisition of critical resources and the building of distinctive capabilities (Prajogo, McDermott, and McDermott, 2013). Moreover, their particularities are also observed in terms of their innovation efforts as they can be more flexible and be better able to adapt quickly in contrast with their restrictions of internal and external factors (lack of marketing skills, access to external funding, and so forth) (Prajogo et al, 2013). Thus, constranting previous studies that commonly segregate small firms from medium sized firms, we observe that differences can also exist between micro firms and small and medium ones which, in turn, it is an important future research avenue to be explored.

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