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**The contingent effect of product relatedness on B2B firms'  
pricing strategy. Evidence from India.**

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# **The contingent effect of product relatedness on B2B firms' pricing strategy. Evidence from India.**

## **Abstract**

This paper empirically examines the contingent effect of product-related diversification on B2B firms' pricing strategy. Drawing our arguments from the recent advances in corporate strategy (i.e., resource-based view of the firm and product diversification strategy) and industrial marketing literatures, we argue that product-related diversifiers are more capable in adopting a high rather than a low pricing strategy. We also contend that this relationship will be positively moderated by a number of firm-specific factors, namely a firm's ability to establish high barriers to entry in its focal industry, as well as its strategic decision to invest in promotion strategy. We test our hypotheses against primary data collected from India. The data consists of a cross section from 127 domestic firms and subsidiaries of foreign MNEs operating in the chemicals / pharmaceuticals and the electronics industry. The results provide support for all the aforementioned hypotheses.

**Keywords** – pricing strategy; resource-based view; corporate-level strategy; product-related diversification; promotion strategy; India;

## **1. Introduction**

The new era of industrial market globalization and the introduction of new production technologies has resulted in supply often exceeding demand and increased price competition (Hultén, Viström and Mejtoft, 2009). This is forcing B2B marketing to evolve and raises a set of challenges for industrial marketers that need to be addressed since B2B markets are the dominant component of economies (Wiersema, 2013). In particular, emerging markets are rising in importance and require different approaches and marketing needs to become more strategic by aligning itself with the new realities. On top of these challenges and despite its significance, pricing in industrial markets has not received the strategic importance it deserves; there is the general belief that industry managers view pricing as a headache and they give up as they feel that the market dictates prices (Lancioni, 2005). For this reason, it is worthwhile examining the strategies of B2B market players who are able to command higher prices in emerging markets. In this manner and in contrast with the general belief that industrial companies in emerging markets are price takers, we address the issue of setting higher prices in emerging industrial markets where both local firms and MNEs meet. We suggest that product relatedness is a corporate-level strategic choice that enables such a pricing strategy.

Product relatedness (i.e. the extent to which a firm's product lines are related with each other) describes a choice by a firm in terms of its scope which is a key strategic decision. In particular, firms with higher levels of product relatedness, develop "unusually productive core factors" and enjoy profitability premiums (Rumelt, 1982, p. 368). The benefits of product relatedness extend beyond achieving efficiencies; product relatedness leads to extensive quality perceptions which are critical in the success and survival of industrial firms (Mukherjee, Makarius and Stevens, 2018). We therefore posit that the selection of product-related

diversification as a corporate-level strategy will have significant implications in the firm's ability to achieve premium pricing. Overall, the relative importance of product relatedness has also been increasing in emerging markets (Peng, Lee and Wang, 2005). For example, Indian Business Groups have been transitioning into more product-related strategies post the 1991 reforms (Kedia, Mukherjee and Lahiri, 2006). More specifically, India is an enormous emerging market with more than 1 billion consumers where while its B2B markets are seen as very price sensitive, a number of firms are able to charge higher prices (Almén and Staxäng, 2012). Thus, our first research question examines *whether product-related diversification leads to a high pricing strategy*.

Pricing, one of the most important elements of the marketing mix, plays a pivotal role in firms' marketing strategy as it is the only variable that generates revenues (Kotler and Keller, 2012). Although pricing is a strategic capability (Dutta, Zbaracki and Bergen, 2003) most industrial firms find it difficult to set a pricing plan as they cannot overcome organizational and operational hurdles (Lancioni, 2005). While we argue that product-related diversification helps the firm set a premium pricing policy, we also posit that it is equally important to examine various firm-related factors and capabilities which have the capacity to strengthen the productivity of firm resources and thus improve the effectiveness of the aforementioned direct effect. This addresses the call of examining the complementarity of capabilities which may enhance or attenuate the effectiveness of another capability (Morgan, Slotegraaf and Vorhies, 2009).

More specifically, we argue that a significant factor moderating the relationship between product-related diversification and firms' pricing decisions is their ability to set high entry barriers. Entry barriers, a theoretical lens sourced from the industry-based view literature, has

been extensively incorporated in several streams of the wider management literature since industry dynamics can influence the effectiveness of firm-specific resources and capabilities (Porter, 1980). As far as their pricing strategy is concerned, it has been suggested that high entry barriers enable firms to maintain a pricing premium as they are less affected by the competition (Forman and Hunt, 2005). We argue that firms which have the ability of creating their own barriers to entry for the competition, can further enhance the uniqueness of the quality signalled by product-related diversification strategy, and thus lead to a higher ability to extract value from customers. In turn, the coexistence of high entry barriers and of product-related diversification strategy creates the opportunity for the firm to capture the perceived value generated via setting relatively higher prices. The application of this perspective is also applicable to B2B markets which have become extremely competitive given the rise of companies from emerging markets. Therefore, our second research question examines *whether a firm's ability to establish high entry barriers in the focal market can potentially enhance the positive relationship between product-related diversification and high pricing strategy.*

While setting high barriers to entry can be viewed as a primarily defensive strategy against the competition, firms equally need to rely on promotional activities as an investment in a customer facing marketing strategy. Such customer facing marketing activities for B2B firms include the promotion of product values (Michell, King and Reast, 2001; Leek and Christodoulides, 2011). The two most important values for industrial product selection are quality and reliability (Bendixen, Bukasa and Abratt, 2004), which are signalled by product relatedness (Mukherjee, Makarius and Stevens, 2018). Therefore, the coexistence of promotional activities and of product relatedness creates and communicates the value of perception, which in turn increases firm ability to charge higher prices. The third research question of our study thus

*examines to what extent promotional activities can enhance the positive relationship between product-related diversification and high pricing strategy.*

Our theoretical underpinnings stem primarily from the resource-based view (RBV) logic and the industrial marketing literature. Specifically, through the utilization of RBV as the main theoretical instrument we respond to calls for more sophisticated theory-grounded empirical research in pricing strategy (Dutta, Zbaracki and Bergen, 2003). Furthermore, we respond to recent calls for more systematic application of RBV in marketing studies (Kozlenkova, Samaha and Palmatier, 2014; Wernerfelt, 2014). RBV can be seen as a useful theoretical tool in terms of facilitating our understanding on identifying the firm's relative strengths and competitive advantage over its competitors (Wernerfelt, 2014). In doing so, we draw on traditionally important elements of the RBV of the firm and its competitive advantage. We develop our arguments in relation to the application of the RBV perspective in the industrial marketing literature. Specifically, we develop our logic and mechanisms explaining and leading to each hypothesis based on a rationale which is linked to B2B markets and B2B firms' pricing strategy.

While the importance of promotional activities has been established in the marketing literature for enabling premium pricing, we examine how a higher order corporate-level strategy, that of product relatedness, may interact with other strategic variables for commanding a higher pricing strategy. We take the perspective that a corporate-level strategy precedes marketing strategies that come to facilitate and refine the execution of business strategies. More specifically, the manner in which the product portfolio is developed is the area where corporate- and marketing- level strategies interact, and product relatedness is a key variable for describing how the product portfolio is managed.

The paper is structured as follows. Section two reviews the extant literature and provides an analysis of arguments which lead to four hypotheses. Section three provides detailed information with regard to the data sources, variables and chosen methodology. Section four presents the statistical analysis, while section five presents the findings, discusses theory-related, managerial and policy implications and concludes with the presentation of limitations and avenues for future research.

## **2. Theoretical Background and Hypotheses development**

### *2.1. Product-related diversification as a form of competitive advantage*

A traditional and increasingly important relationship in the context of strategic management, and consequently of product development, is the relationship between product diversification (unrelated and related) and firm performance (Rumelt, 1982; Varadarajan, 1986). According to RBV theory, firms possessing valuable, rare, and inimitable resources and capabilities will be in position to generate above normal returns because these capabilities and resources can reduce the cost of production and consequently provide competitive advantage for firm. However, to retain and increase pricing power, firms must attach value-added features to differentiate their products and services (i.e. value-added pricing) which allows them to adopt a high pricing strategy (Kotler and Armstrong, 2008).

The RBV argues that the level of diversification is driven by the excess volume of resources (financial, physical, or intangible) that can be exploited in new markets and product lines without negatively affecting the extant operations of the firm (Teece, 1983). The volume of resources affects the level of diversification. However, the flexibility (i.e. the possible utilization of a particular resource for the development of more than one end product) of such resources can



determine the relatedness (limited flexibility) or un-relatedness (greater flexibility) of the market for these products. From the aforementioned three types of firm resources, both physical and intangible resources are rather inflexible and can only be used to enter closely related markets. Another stream of research has stressed the importance of “product lines” of groups of products that are closely related. This relatedness emerges from the fact that such products are used together in order to produce another end product, possibly (their purpose is) to satisfy similar needs, or are marketed together as a group of products (Monroe & Zoltners, 1979). In general terms, products belonging to the same product line are functionally complementary to each other.

Drawing, once again, on the RBV perspective, Nath, Nachiappan and Ramanathan (2010) found that diversification of B2B firms has a negative impact on firm performance as the extension in new products and markets creates a great deal of inefficiencies. However, in the case of portfolio expansion in related areas, firms achieve economies of scale and better performance. This finding is consistent with the benefits of product relatedness that has been long argued to exist in developed markets where unrelated product diversification has been found to destroy value (Rumelt, 1974). Specifically, as compared to firms operating either in a single or a set of unrelated business areas, firms with a product-related scope can more readily exploit a number of core complementary and synergistic activities which lead to a number of competitive advantages, including: economies of scale and scope, exploitation of a range of technological and managerial attributes, and skills (Rumelt, 1982). In particular, a B2B firm can benefit from sales synergies, transferable skills and know-how from one product (related) line to another (Ansoff, 1965). Take for example a diversified telecommunications provider which offers a variety of services to its business clients, spanning from broadband services and automated telephone systems to cloud storage and information and communication technology

consulting services.

The fact that product-related diversified firms offer value-added features to their customers could also imply that this value-added element would be reflected in the price of the product or service. A characteristic example in the case of product-related diversified firms is that their brand value can be transferred to new product categories (Bergen, Dutta and Shugan, 1996). In particular, firms tend to expand their product portfolios via leveraging transferable intangible assets, such as their most valuable and highly esteemed brands (Park, Mothersbaugh and Feick, 1994). Extant literature shows that when an extension of product portfolio coincides with the existence of a strong brand value, then the customers are more likely to express a positive sentiment and evaluation of this product portfolio extension (Dacin and Smith, 1994; Thamaraiselvan and Raja, 2008). Firms will be more inclined towards leveraging this strategic competitive advantage (i.e., brand value) in order to trigger their customers' level of familiarity and at the same time maintain or even increase financial value without having the need to substantially increase costs of marketing and advertising, since the value of the brand in a product-related portfolio will still be considered familiar territory for customers.

Further, besides gaining efficiencies in product and market knowledge, product relatedness has been proposed to signal higher reliability and product quality (Mukherjee, Makarius and Stevens, 2018). We therefore expect that product related expansions enable firms to command higher prices. However, Peng, Lee and Wang (2005) do suggest that while product relatedness (i.e. higher corporate scope) might have positive results in developed economies, this may not be the case in emerging markets (Khanna and Palepu, 1997) where there are striking differences in the level of institutional development. However, the positive results of unrelated diversification may have "atrophied over time" (Khanna and Palepu, 2000, p. 268). Given that

the data used for some of the cited research took place 20 or even 30 years ago and emerging markets may have also evolved, this raises an interesting issue that remains unexplored by the B2B literature: to what extent does product relatedness enable firms to command higher pricing levels in an emerging market context? Based the aforementioned logic and argumentation we formulate the following hypothesis:

*H1. Product relatedness is positively associated with adopting a high pricing strategy.*

## *2.2. The moderating effect of barriers to entry*

Barriers to entry have been considered an important determinant of firms' pricing strategies (Diamantopoulos, 1991). Extant research has paid attention to industry- and competition-related issues that traditionally affect firms' pricing strategies, such as switching costs (Stango, 2002), new entrant size (McCann and Vroom, 2010), suppliers' pricing strategy (Forman and Hunt, 2005), or even the possibility that a new entrant is coming from a totally different industry (Seamans, 2013).

Drawing on the industry-based view literature, one can clearly identify that industry dynamics can influence the effectiveness of firm-specific resources and capabilities (Porter, 1980). In the same vein, we argue that barriers to entry can be leveraged by incumbent firms in order to further enhance capability deployment since they provide protection from the competition. Similarly, industrial marketing research has shown that high entry barriers enable firms to develop unique capabilities and gain a monopolistic advantage which in turn allow them to charge close to a customer's price ceiling (i.e., the maximum price they are willing and able to pay) (Shipley and Jobber, 2001). In this regard, we suggest that the creation of barriers to entry by incumbent firms is an important strategy that moderates the positive effect of product

relatedness on firms' high pricing strategy; under such a context incumbent firms will be more capable of defending their market position and demonstrate market uniqueness which will strengthen the overall ability to charge a high price.

First, incumbent firms which have developed complementary capabilities by having a product-related portfolio and at the same time by setting up and maintaining high barriers to entry, will be more likely to charge a high price; product relatedness leads to extensive quality and reliability perceptions (Mukherjee, Makarius and Stevens, 2018) which would be further enhanced if perceived as unique due to the presence of barriers of entry. Bettis (1981) argues that high performance in product-related diversifying firms can be reached by entering early in vulnerable to entry barriers industries and subsequently exploiting a set of core capabilities in order to establish considerable barriers. Further, given that product-related diversifiers outperform product-unrelated diversifiers (Rumelt, 1982; Markides and Williamson, 1994), it can be supported that the former could draw on slack resources in order to maintain or even enhance high barriers to entry.

Second, leveraging barriers to entry can be particularly beneficial for incumbent firms, and at the same time a relatively feasible strategy for product-related diversifiers. Firms focusing on product-related diversification are more likely to benefit from operational synergies, such as co-branding, which can further enhance the competitive advantage of firms through the utilization of economies of scale and scope. Setting barriers to entry in terms of product-unrelated diversification requires excess amount of tangible resources (human and physical) and intangible assets (R&D and marketing expenditures) to guarantee product proliferation in a wide range of product lines. Although this strategy seems very demanding for product-unrelated diversifiers, in case of product-related diversifiers such strategy can be more effective, mainly

due to the potential of leveraging transferable intangible assets in a related portfolio of business activities (Bergen, Dutta and Shugan, 1996). In other words, firms with a focused product portfolio will require a reasonable amount of assets in order to complement the overall strategy of the firm, and such strategy will become even more effective for firms which have set up high barriers to entry. Based the above logic and arguments we develop the following hypothesis:

*H2. A firm's ability to establish high barriers to entry will strengthen the positive effect of product relatedness on high pricing strategy.*

### *2.3. The moderating effect of promotion strategy*

Further to the theoretical underpinnings drawn from the industrial marketing literature, the RBV suggests that promotion strategy can also be considered a core market-based asset and capability for B2B firms. Such a capability is likely to add superior value to a product, which in turn can generate greater demand by its customers. It has been argued that when a firm invests in developing reputational capabilities it can achieve a high price positioning (Hooley, Broderick and Möller, 1998). However, a firm will enjoy economies of scope and more effectively deploy its capabilities when it maintains a related product portfolio.

The concept of product relatedness has been found to be distinct from the concept of differentiation relatedness which is characterised by the creation of brands and presence of promotional activities (Stimpert and Duhaime, 1997). In particular, product relatedness has been suggested to signal higher reliability and product quality (Mukherjee, Makarius and Stevens, 2018). This is of substantial importance for our study since quality and reliability are the two most important factors for industrial brand selection (Bendixen et al. (2004)) and loyalty (Michell, King and Reast (2001)). While this implies that product relatedness signals value for

which customers are willing to pay a premium, this value needs to be communicated by customer facing promotional activities.

Although reputation and its associated brand equity has been in general linked with marketing activities, it is promotional activities in particular that are responsible for its creation (Ailawadi, Lehmann and Neslin, 2003). Therefore, the value signalled by product relatedness and its resulting ability to command a price premium, would be further enhanced by the presence of promotional activities. Further, it has been long established that promotional activities facilitate the selling process in a B2B environment as they create awareness, stimulate word of mouth communication (Park, Roth and Jacques, 1988). Therefore, we hypothesise that the choice of a firm to adopt a promotion strategy (i.e. extensively promote the products on offer), will further complement the ability of product relatedness to secure higher prices. Based the aforementioned logic we formulate the following hypothesis:

*H3. Promotion strategy will positively moderate the relationship between product relatedness and high pricing strategy.*

Figure 1 summarizes the hypothesized relationships graphically.

--- Please insert Figure 1 here ---

### **3. Data and methods**

#### *3.1. The Indian context*

We address our research questions in the context of one of the most important emerging markets, this of India. We consider that the Indian context is particularly suitable for testing our

hypotheses for three main reasons. *First*, the rise of emerging markets in general, and the growing middle-class in the Indian region in particular, have created new prospects and growth opportunities for both domestic firms and foreign MNEs (Akbar and Samii, 2005), since these markets are still developing and have not reached a saturation point. *Second*, despite its opening from a previously protected economy, India still remains a highly uncertain institutional environment, and is therefore an ideal setting for a comparative analysis involving both domestic firms and MNE subsidiaries. *Third*, we consider that, due to the growing competition in the Indian economy and its institutional idiosyncrasies compared to more advanced economies, the importance of firm-specific resources and capabilities will be even more pronounced in terms of determining the pricing strategy of firms. *Finally*, we suggest that RBV fits well with an emerging market context, and in particular this of India, mainly due to the fact that its theoretical underpinnings provide opportunities to identify and explain why some firms are more likely to perform better in emerging marketplaces than others (Hunt, 2000).

### 3.2. Data

Data for this work comes from a detailed survey instrument entitled ‘Competitive Behaviour of Incumbent firms in India’ which is composed of 32 items and 83 sub-items. This survey instrument was drawn following a review of literature as it was adopted from a previously similar survey conducted in the context of incumbent firms in the UK.<sup>1</sup> The survey instrument had a focus on dimensions of strategic behaviour, namely promotions and advertising; capacity creation; pricing; supply and distribution networks; and entry conditions. Most questions were based on a five-level classification of an attitudinal nature, other questions have cardinal number responses and there

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<sup>1</sup> Detailed description of this can be found in Singh et al. (1998).

are also some open-ended questions. The survey instrument was administered on a cross section of medium- and large-sized firms in India. The government of India defines a medium enterprise as an enterprise where the investment in plant and machinery is more than Rs50 million but does not exceed Rs100m.<sup>2</sup> By default, enterprises with investment in plant and machinery exceeding INR 100m are classified as large firms.

A domestic firm was defined as one that is originated and based in India and an MNE (subsidiary) as one that is operating in India but has its HQ in an overseas country. In the first instance, in the first quarter of 2010, a large dataset of randomly selected 800 companies was prepared based on a diverse set of sources including national and regional chamber of commerce. Given the nature of questions posed and previous experience in collecting data of this nature, a professional firm was then entrusted with the task of collecting data with clear directives on the requirement of data from a randomly selected cross section of firms based in Delhi, Kolkata, Mumbai, Chennai, Bangalore, and Indore<sup>3</sup>. In coordination with the consulting firm we narrowed down the target sample to 350 randomly selected medium- and large-sized firms based in these locations. In the second half of 2010, the hired firm trained a set of operatives and contacted chosen companies for survey in person. All the companies were given in writing the pledge to maintain the anonymity of the names of co-operating companies and the replies they would provide. As a result, 298 firms satisfactorily completed the survey instrument which accounts for a response rate of 85.14%.

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<sup>2</sup> For a more comprehensive view on that definition please follow the link:  
<https://rbi.org.in/scripts/FAQView.aspx?Id=84>

<sup>3</sup> Although the data was collected in 2010, we believe that both the impact and reliability of the information provided is relevant and equally important. First, pricing strategy is a notion that has been considered an important element from both the industry and academia over the past 60 years. As such, our dataset covers a continuously important topic that the academic community has never lost interest for it. Second, the country context under which this study was conducted is reliable since India has been a constant recipient of foreign direct investment and a continuously growing market both before and after the year the data collection took place.



Although the initial sample consists of both B2B and B2C firms, given the focus of our study on the pricing strategies of B2B firms only, we restricted our final sample on firms from the chemicals/pharmaceuticals and electronics industry which were clearly oriented towards supplying and distributing their products to other firms. Overall, responses from 127 firms operating in the chemicals/pharmaceuticals and electronics industry were utilised.

### *3.3. Measures*

The underlying premise of this study is to address the determination of factors that prompt firms to adopt certain pricing strategies, where the relevant agents are domestic (Indian) firms and MNE subsidiaries. The pricing literature illustrates a range of specific pricing strategies, which are adopted in very case-specific situations. In reality, the dichotomization of pricing to low and high was first introduced by Dean (1950), who particularly distinguished among skimming and penetration prices. Similarly, the extant study by Jobber and Shipley (2012) followed a similar conceptualization of pricing strategy, as examined several marketing-oriented determinants that discriminate between the settings of successful high and low prices. In the same vein, our study takes into consideration the aforementioned empirical studies and incorporates such dimensions into the following way. First, we utilize three broader categories of pricing strategies. As such, our first dependent variable comprises three main types of pricing strategy, namely; (1) a standardized strategy based on costs (standard), (2) a low price to retain as much of the market as possible (low) and (3) a high price to maximize short run revenues (high). The standardized, low, and high pricing strategy are assigned the values 1, 2, and 3, respectively, with standardized

being used as the reference category<sup>4</sup>. Second, given the possibility that the middle category (i.e., standardized strategy based on costs) might be considered vague as it can include a range of pricing strategies that sit between low and high pricing, we also develop a binary variable which takes that value ‘1’ for high pricing strategy and the value ‘0’ for both standardized and low pricing strategy. The alternative dependent variables will allow us to test the effect of two different estimation models which will enable us to potentially highlight any significant differences in these pricing strategies.<sup>5</sup>

With regard to the measurement of our key independent variable, product relatedness, we follow past studies which measured product diversity based on a scale measure, either related to the number of different products (e.g. Malmi, 1999), or the number of product variants (e.g. Bjørnenak, 1997). Similarly, in our study *product relatedness* is calculated as the ratio of products related to the current line of operation that a firm launches, on average, each year, to the total number of products a firm launches to the market, on average, each year. The higher this ratio is, the greater the level of product relatedness for a firm’s product portfolio.

We introduce two moderating variables for testing the two aforementioned moderating hypotheses. The measurements for the development of these latent variables are based on a survey instrument being adopted from a previous study (see Singh et al., 1998). The questions being asked in the survey have produced items which are assessed with five-point Likert-type scales (1 = “strongly disagree,” and 5 = “strongly agree”). The questions and the items (measurements) of the constructs, as well as their statistics (factor loadings, Cronbach’s alpha,

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<sup>4</sup> According to Lages and Montgomery (2005) a standardized pricing strategy refers to setting a price which is similar to these reported in the current marketplace. In general terms, a standardized pricing strategy facilitates market penetration.

<sup>5</sup> We would like to thank one of the referees for bringing this to our attention.

Jöreskog's  $\rho$  reliability and average variance explained) are presented in Table 1. These variables are constructed after conducting a factor analysis (i.e., principal component factors) and confirming the discriminant validity through a confirmatory factor analysis. Prior to testing our hypotheses as described by our conceptual model (Figure 1), we validated the scales and conducted the required exploratory and confirmatory factor analysis. Overall, the fit of the confirmatory factor analysis was good ( $\chi^2/df = 73.61/37 = 1.98$ , CFI = 0.96, TLI = 0.95, RMSEA = 0.061, SRMR = 0.046), all item loadings were found to be significant at the 0.01 level, the average variance extracted (AVE) values were higher than 0.5, and composite reliabilities (CR) were higher than 0.7 (Table 1), indicating acceptable reliability and convergent validity (Fornell & Larcker, 1981). Further, discriminant validity was demonstrated since the square roots of AVE were greater than the corresponding row and column values (Table 2).

First, the construction of the first moderating variable, *Barriers to entry*, is based on a five-item scale ( $\alpha = 0.85$ ;  $\rho = 0.89$ ; AVE = 0.61), which has resulted from a question asking the respondents whether they engage in certain competition-related activities in order to slow down or dissuade entry of new products by competitors into their industry. We incorporate *promotion strategy* in order to stress the importance of promotional activities for determining B2B firms' pricing strategy (Xie and Wei, 2009). Specifically, our second moderating variable, *promotion strategy*, is a three-item scale construct ( $\alpha = 0.81$ ;  $\rho = 0.82$ ; AVE = 0.62) based on a question asking respondents how often they adopt a number of promotion-related policies in order to sell a product successfully.

--- Please insert Table 1 here ---

Finally, we make use of a number of control variables that traditionally affect the pricing strategies firms adopt. First, following other studies (e.g. Chen, Cheng, He, & Kim, 1997; Mezias, 2002) that differentiate MNEs from Domestic companies (DCs), we control for multinationality using a dummy variable taking the value ‘1’ if the firm is a foreign-based subsidiary of a non-Indian MNE; and the value ‘0’ otherwise. This variable is titled *MNE subsidiary*. We also control for the *size* of the firm through calculating the natural logarithm of the annual turnover (corresponding to the latest year) of the firm (Lin, Cheng and Liu, 2009).

#### *3.4. Common method bias testing*

Since our dataset is solely based on primary data, and specifically on data derived from a single questionnaire, we need to control for potential presence of common method variance.

Specifically, we test whether common method variance is likely to have inflated the relationships between the questionnaire variables used in the analysis. Accordingly, a confirmatory factor analysis was performed with all manifested items loading on a single latent factor producing a poor fit (CFI < 0.90, TLI < 0.90, RMSEA > 0.10, SRMR > 0.08). In addition, the correlations between constructs (Table 2) are clearly lower than 0.90 providing additional support that this study does not suffer from common method variance bias problems (Pavlou, Liang and Xue, 2007). Multicollinearity was also examined using the variance inflation factor (VIF). The highest VIF value was 1.83 which is well below commonly acceptable thresholds of 3.3 and provides additional support that this study does not suffer from common method variance (Kock, 2015). Table 2 provides information on the descriptive statistics of the variables, as well as on their pair-wise correlations.

--- Please insert Table 2 here ---

### *3.5. Estimation method*

As mentioned in the previous section, in order to make sure that we eliminate any potential bias related to the responses associated to the pricing strategy each firm follows, we have developed two different dependent variables, a binary variable and a categorical variable. As regards the binary variable, its formation leads us to the assumption that the most optimal estimation method is the adoption of a binomial logistic regression as this provides an efficient way for estimating the probability of the occurrence of a specific event (i.e., pricing strategy). With regard to the alternative version of our dependent variable, which is a categorical formation of pricing, it becomes apparent that a multinomial logit regression model is the most appropriate estimation method in order to estimate the effects of a set of predictor variables on the probability that firms will fall within a certain category as opposed to the reference category (Gravetter and Wallnau, 1992). As clarified earlier, three pricing strategies (standard, low, high) could be adopted, and owing to the choices being multiple, multinomial logit regression was employed. One category of the dependent variable (standard) is chosen as the comparison category.

## **4. Findings**

Table 3 presents the results from the binomial logit estimates predicting high pricing strategy. As regards hypothesis 1, our results (Model 1, Table 3) confirmed the positive effect of product relatedness on firm high pricing strategy. Specifically, these show that product relatedness is associated with a 3.884 ( $p < 0.01$ ) increase in the probability of firms adopting a high pricing strategy. We thus conclude that hypothesis 1 is supported.

--- Please insert Table 3 here ---

Regarding hypothesis 2 and the moderating effect of barriers to entry on high pricing strategy, the results (Model 2, Table 3) provide evidence for a positive moderating effect ( $\beta = 2.241, p < 0.05$ ). This result indicates that when a firm engages in actions related to setting high barriers to entry against its competitors, the effect of product relatedness on firm's (high) pricing strategy becomes stronger. To better capture the moderating effect, we proceed to the graphic illustration of this relationship. Specifically, we graphically depict the predictive margins of the examined relationship as these result from the binomial logit regression analysis. The margins are estimated at low (valued at mean – 1 standard deviation), moderate (valued at mean) and high (valued at mean + 1 standard deviation) levels of the moderator (i.e., barriers to entry). Figure 2 clearly illustrates that the propensity of a firm to adopt a high pricing strategy increases more with the level of product relatedness when barriers to entry are high. On the other hand, for low levels of barriers to entry, the slope almost flattens.

--- Please insert Figure 2 here ---

With regard to the examination of hypothesis 3 and the moderating effect of promotion strategy on the relationship between product relatedness and high pricing strategy, the results (Table 3, Model 3) show a positive and significant coefficient for promotion strategy ( $\beta = 3.284, p < 0.01$ ). Hypothesis 3 is thus supported. We graphically illustrate the predictive margins of the moderating effect of promotion strategy as these result from the regression analysis. Figure 3

shows that the propensity of a firm to adopt a high pricing strategy increases more with the level of product relatedness when promotion strategy is more intensive. On the contrary, for low levels of promotion strategy, the slope moves downwards and to a great extent flattens.

--- Please insert Figure 3 here ---

In order to further confirm the validity of the binomial logit regression estimates, we proceed to the estimation of the aforementioned models using a multinomial logit estimator. In the multinomial logit regression, the results of which are reported under table 4, the key dependent variable (i.e., pricing strategy) instead of taking a binary form, it takes a categorical formation, that is it comprises three categories of pricing strategy (standardized, low and high pricing strategy). The standardized, low, and high pricing strategy are assigned the values 1, 2, and 3, respectively, with the last two categories being benchmarked against the former category. The estimates in table 4, are to a large extent consistent with these of the binomial logit regression estimates. Specifically, the coefficient of product relatedness is positive and significant for high pricing strategy ( $\beta = 3.559$ ,  $p < 0.01$ ), while the effect of the same coefficient on low pricing strategy is non-significant. With regard to hypothesis 2, the coefficient of the interaction effect between product relatedness and barriers to entry is positive and significant for high pricing strategy ( $\beta = 2.077$ ,  $p < 0.10$ ) and non-significant for low pricing strategy. As regards hypothesis 3 and the moderating effect of promotion strategy the coefficient turned to be positive and significant for high pricing strategy ( $\beta = 3.434$ ,  $p < 0.01$ ), and non-significant for low pricing strategy. We therefore conclude that our estimates are to a great extent consistent.

--- Please insert Table 4 here ---

## **5. Discussion and conclusion**

Our study was motivated by the so far limited attempt of extant research to explain the role of product-related diversification on firm's pricing strategy. To address this gap in the literature, we used RBV logic and theoretical underpinnings sourced from corporate strategy, and specifically this of product diversification strategy. Further, we drew on the industrial marketing literature to inform our theoretical positioning and enrich our arguments. In this regard, we paid considerable attention to traditionally important aspects related to a firm's pricing strategy, such as the role of barriers to entry and promotion strategy.

First, in hypothesis 1, we argued that product related-diversification is positively associated with adopting a high pricing strategy. Our results support this conjecture as they show that product-related diversifiers are more likely to adopt a high pricing strategy. Past research has stressed the benefits of product relatedness (Mukherjee, Makarius and Stevens, 2018) and the inefficiencies of product-unrelated diversification which has been found to destroy value (Rumelt, 1974). Our aim to explain the relationship between product relatedness and high pricing strategy was based on RBV logic and the foundations of corporate strategy literature which suggests that firms need to possess valuable, rare, and inimitable resources and capabilities in order to attach value-added features to differentiate their products and services thus allowing them to adopt a high pricing strategy (Kotler and Armstrong, 2008). Our finding advances our knowledge on the crucial determinants of pricing strategy, as well as it extends the scope of product diversification – as a core corporate strategy – in the setting of industrial marketing in general and the marketing of B2B firms in particular.



In hypothesis 2, we argued that the positive effect of product relatedness on high pricing strategy will be positively moderated by firms' ability to establish high barriers to entry. We based our arguments on RBV logic which supports that incumbent firms which have already developed unique capabilities and have gained a monopolistic advantage are more likely to charge close to a customer's price ceiling (Shipley and Jobber, 2001). Our finding supports this conjecture and extends our existing knowledge in the industrial marketing literature. While past research has indicated entry barriers as an important determinant of a firm's pricing strategy (Diamantopoulos, 1991), the moderating role of competitive dynamics as far as pricing strategy is concerned has not been properly addressed and empirically tested. Our finding proves that firms utilize their unique resources and competences, such as leveraging their financial slack and market position, in order to build higher barriers to entry thus enhancing their market position and being more capable of adopting a high pricing strategy.

In hypothesis 3, we stressed the importance of promotional activities in regards to how the latter can facilitate the strengthening of the relationship between product relatedness and high pricing strategy. Specifically, we argued that promotion is an important marketing-related capability that creates awareness and encourages word of mouth communication, which eventually can influence purchasing decisions. In line with extant research which has stressed the importance of marketing-related capabilities (Hooley, Broderick and Möller, 1998), our finding shows that promotional capabilities are crucial for further strengthening the competitive advantage of firms with regard to increasing their ability to market products at a comparatively higher price. Our finding confirms the view that building reputation and investing in capabilities that enable the firm to maintain its customer loyalty is of crucial importance for further strengthening the positive effect of product relatedness on its ability to charge a higher price.

Apart from the aforementioned finding, further interesting insights emerge since the joint presence of promotional capabilities and product-related diversification renders the positive effect of product-related diversification to negatively relate to high pricing. This finding further confirms the view that the promotional capabilities of product-related diversifiers enable them to capture more value as far as the pricing strategy is concerned. To the contrary, the promotional activities of product-unrelated diversifiers reduce a firm's ability to capture value. This is also aligned with the view suggesting that unrelated-product diversification destroys value (Rumelt, 1974), and may attenuate the effectiveness of complementary capabilities.

### *5.1. Theoretical implications*

Owing to severe data limitations on how firms arrive at product pricing decisions, studying the underlying pricing strategies poses a severe challenge for academics. Drawing on RBV-logic and industrial marketing literature, our study claims to have contributed towards filling a long-lasting research gap with regards to the role of product relatedness on the ability of B2B firms to set higher prices. By adopting an RBV lens we respond to calls for the study and application of more sophisticated theories when it comes to examining pricing strategy (Dutta, Zbaracki and Bergen, 2003). We also respond to recent calls for more systematic application of RBV as a principal theoretical logic in marketing studies (Kozlenkova, Samaha and Palmatier, 2014; Wernerfelt, 2014). In this paper we demonstrate that RBV can be seen as an interdisciplinary and powerful theoretical tool that can enhance our understanding on identifying the firm's relative strengths and competitive advantage over its competitors (Wernerfelt, 2014). Our findings showed that traditionally important elements of RBV, such as intangible capabilities are indeed crucial for explaining the pricing strategy of firms.

Our findings also contribute to the industrial marketing pricing literature that has been primarily focused on brand building activities and less on the implications of corporate-level strategies. In particular, while we find promotional activities, the cornerstone of brand building, to be important in setting a high pricing strategy, this takes place primarily when combined with a product related strategy. Further, pricing strategy that is typically considered a marketing variable, is dependent on critical strategic variables such as entry barriers. This indicates that industrial marketing literature needs to more closely consider its interaction with corporate-level decision making, i.e., marketing needs to become more strategic in scope. This is consistent with recent findings, where European B2B companies that view pricing as a systematic strategic process have been found to be able to exercise value appropriation and significantly improve firm performance (Burkert *et al.*, 2017).

### *5.2. Managerial implications*

Our analysis of pricing strategies suggests several implications for managing domestic firms or MNE subsidiaries in emerging market contexts. First, our RBV perspective draws attention on the importance of corporate-level strategies in the adoption of a high pricing strategy. Managers could assess the product relatedness of their expansions, in order to successfully adopt the most optimal pricing strategy, which can be critical for the firm's prosperity and survival in the marketplace.

Second, marketing-related capabilities, such as promotions, are primarily effective under the prism of product relatedness. This demonstrates that the great focus and reputation product-related companies are able to achieve, significantly increase their promotional effectiveness. In particular, an industrial firm with a related product line allows its salesforce to develop more in-

depth knowledge about the products on offer who more effectively promote and convincingly negotiate higher prices; B2B salesforce knowledge is an important factor for increasing sales confidence and leads to better firm performance (Liozu, 2015). In contrast, a salesperson with an unrelated product portfolio will inevitably lack the specialised knowledge required to convince sophisticated and well-informed industrial buyers.

Third, managers of MNE subsidiaries operating in India could also benefit from our findings. Specifically, MNE subsidiaries leveraging their parent's resources and capabilities may draw on their monopolistic advantages and thus can add to the woes of domestic firms. However, our findings do not indicate that these firms enjoy a greater ability in directly commanding higher prices. In other words, we do not find that there is an advantage of foreignness or increased perceived value that they are able to monetise as might be the case in consumer markets.

### *5.3. Conclusion*

Managers in industrial sectors tend to avoid discussing how they price as they feel it may reveal sensitive information that may come to the attention of competitors and customers; more fundamentally they may not know how to price often resorting to cost plus pricing without considering the value offered to the customer (Morris & Fuller, 1989). As a result, a central problem which researchers encounter in pricing research is the availability of reliable data on the mechanics of pricing which, as mentioned previously, is held as proprietary information by firms and not divulged to outsiders. As a result, researchers often conduct surveys with the purpose to elicit the best set of information which have inherent limitations. Most certainly longitudinal studies that are able to examine the dynamics of pricing over a period of time in conjunction with

changes in product relatedness would provide additional insight.

Future research could apply the same theoretical perspective in a different regional context, for example focusing on other emerging markets, or even test the validity of the arguments and findings in the context of more developed markets. Further, this study can lead the way in examining the interaction between corporate level strategies such as product relatedness with important strategic marketing variables such as brand equity in explaining the ability of industrial firms to command a price premium. In particular, the industrial brand equity pyramid includes elements such as salesforce relationships, partnership solutions and salience of the manufacturer's brand (Leek and Christodoulides, 2011) which could be examined in more detail along product relatedness. In such a manner, their interaction effects and relative explanatory power could be determined. Further, while the operationalization of variables can always be improved, we share the view for the need of a more detailed and objective operationalization of pricing strategy. Future research focusing on the same research area could develop objective measures in order to further improve the validity and explanatory power of any related findings.

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## TABLES

**Table 1. Measurement of latent variables using factor analysis (Principal components factors)**

Construct and item wording (question)	Item	Factor Loading	Cronbach's Alpha	Jöreskog's rho reliability	AVE
<b>Barriers to entry (adapted from Singh et al., 1998)</b>					
<i>In an attempt to slow down or dissuade entry of new products into your industry what priority does this site place on:</i>					
Research and development	BTE1	0.70			
Capacity creation	BTE2	0.84			
Pricing policy	BTE3	0.70	0.87	0.89	0.61
Assured supply of raw materials and intermediate products	BTE4	0.85			
Selling network for your products	BTE5	0.80			
<b>Promotion strategy (adapted from Singh et al., 1998)</b>					
<i>In order to sell a product successfully, how often do you adopt the following policies?</i>					
Promotional campaign is extensive at the time of launch, but when the product becomes well known, the campaign recedes in line with other established products	PR1	0.82			
Promotional campaign is extensive at the time of launch, but when the product becomes well known, the campaign is intensified whenever a similar product by competitors appears on the market	PR2	0.71	0.78	0.82	0.62
The rate of change in technology is so great that no special efforts are made to undertake extensive promotional campaigns	PR3	0.79			

**Table 2. Correlation table and descriptive statistics**

	1	2	3	4	5	6
1 High pricing strategy	-					
2 MNE subsidiary	0.18	-				
3 (ln)Employees	0.25	0.40	-			
4 Product relatedness	0.40	0.07	0.30	-		
5 Barriers to entry	0.19	0.04	0.34	0.32	<i>0.78</i>	
6 Promotion strategy	0.29	0.08	0.31	0.18	0.64	<i>0.79</i>
Mean	0.42	0.20	6.63	0.57	0.00	0.00
Std. Dev.	0.50	0.40	1.66	0.25	1.00	1.00
Min	0.00	0.00	3.91	0.05	-3.85	-3.07
Max	1.00	1.00	11.62	0.99	0.95	1.04

Note: Pairwise correlations above |0.18| are significant at the 5% level; two-tailed tests; Square Root of Average Variance Extracted on diagonal in italics

**Table 3. Binomial logit regression estimates predicting high pricing strategy**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>
MNE subsidiary	0.768 (0.579)	0.922 (0.598)	0.982* (0.592)
(ln)Employees	0.0799 (0.156)	0.0467 (0.163)	0.0479 (0.162)
Product relatedness	3.884*** (1.014)	4.061*** (1.097)	4.222*** (1.135)
Barriers to entry	-0.424 (0.317)	-1.708** (0.664)	-0.447 (0.314)
Promotion strategy	0.851*** (0.324)	0.817** (0.327)	-1.055* (0.604)
Product relatedness x Barriers to entry		2.241** (1.079)	
Product relatedness x Promotion strategy			3.284*** (1.041)
Constant	-3.348*** (1.098)	-3.425*** (1.161)	-3.442*** (1.171)
Log-likelihood	-68.997	-66.547	-63.443
LR chi2	34.58***	39.48***	45.68***
Pseudo R2	0.200	0.228	0.264
Number of iterations	4	4	4
Number of observations	127	127	127

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.10; two-tailed tests.

**Table 4. Multinomial logit regression estimates predicting pricing strategy**

	Low price	High price	Low price	High price	Low price	High price
	Model 4		Model 5		Model 6	
MNE subsidiary	-0.253 (0.779)	0.687 (0.632)	-0.241 (0.779)	0.846 (0.649)	-0.238 (0.777)	0.903 (0.643)
(ln)Employees	-0.0170 (0.198)	0.0751 (0.168)	-0.0225 (0.201)	0.0403 (0.174)	-0.00553 (0.202)	0.0462 (0.175)
Product relatedness	-0.971 (1.158)	3.559*** (1.076)	-1.055 (1.181)	3.710*** (1.156)	-0.527 (1.229)	4.066*** (1.214)
Barriers to entry	-0.284 (0.342)	-0.506 (0.332)	-0.0319 (0.672)	-1.704** (0.694)	-0.317 (0.346)	-0.542 (0.334)
Promotion strategy	0.561 (0.345)	1.007*** (0.340)	0.570 (0.348)	0.974*** (0.342)	0.212 (0.648)	-0.970 (0.642)
Product relatedness x Barriers to entry			-0.526 (1.053)	2.077* (1.118)		
Product relatedness x Promotion strategy					0.649 (1.153)	3.434*** (1.112)
Constant	-0.0196 (1.362)	-2.696** (1.179)	0.0669 (1.392)	-2.745** (1.237)	-0.309 (1.404)	-2.897** (1.262)
Log-likelihood	-114.248		-111.700		-108.742	
LR chi2	38.73***		43.83***		49.75***	
Pseudo R2	0.144		0.164		0.186	
Number of observations	127		127		127	

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.10; two-tailed tests; Reference category for pricing strategy is 'standardized' pricing.



## FIGURES

Figure 1. Conceptual model

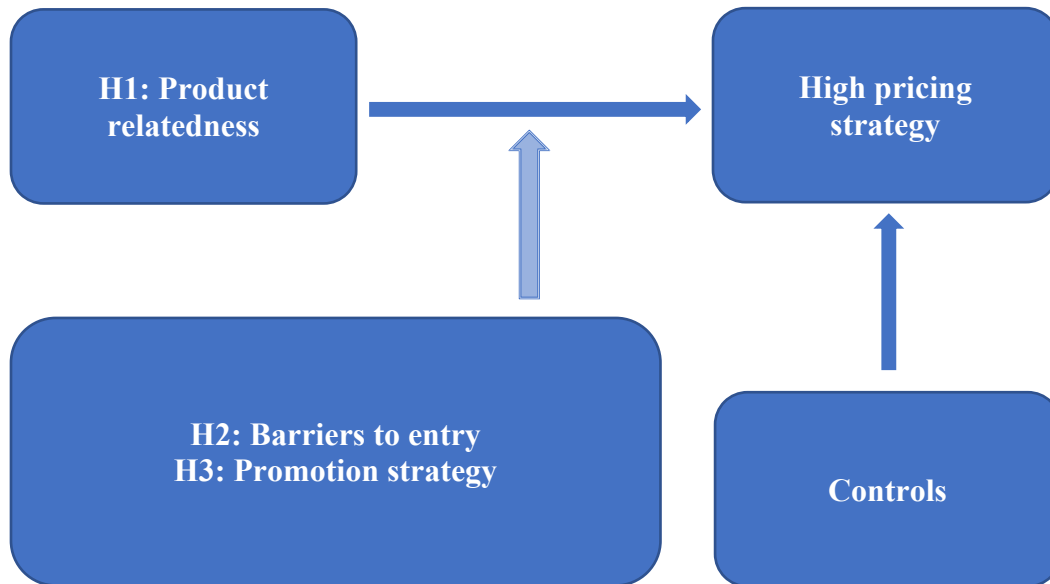
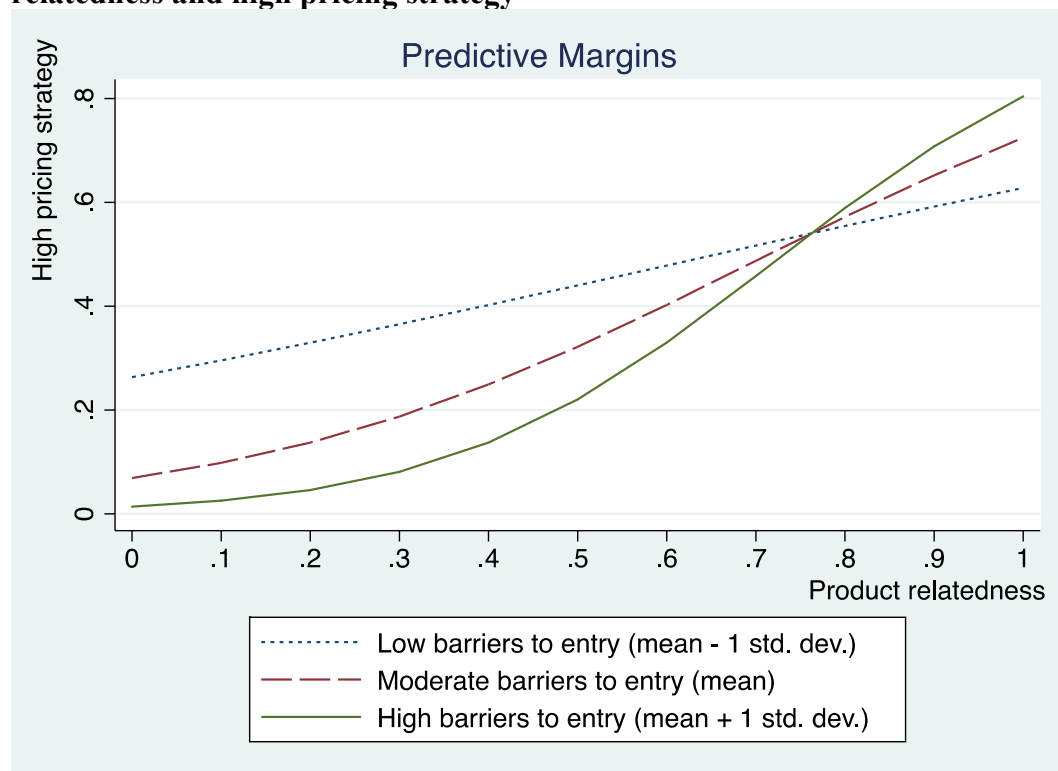


Figure 2. The moderating effect of barriers to entry on the relationship between product relatedness and high pricing strategy



**Figure 3. The moderating effect of promotion strategy on the relationship between product relatedness and high pricing strategy**

