How an unequal intra-firm distribution of dynamic marketing capabilities affect market share

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Abstract:

The study addresses how marketing assets and capabilities of the firm perform under different product (brand) innovation conditions using the dynamic marketing capabilities (DMC) research perspective. The study contributes to the DMC research stream using the Resource-based theory (RBT) framework. Academic research to date has paid a little attention to the interrelationship between market share as a performance metric, dynamic capabilities and product (brand) innovation. The current study bridges this knowledge gap by empirically validating the effects of DMC on market share performance output using panel data for 753 retail food brands. The model was initially fitted with the beta regression analysis and cluster analysis in the second step of estimation procedure. The results of simulation by Monte Carlo experimentation are discussed. The findings show that firms leverage their marketing capabilities unequally in the multi-brand portfolios, which leads to an unequal intra-firm distribution of assets and resources. The research contributes to the understanding of the brand competitive dynamics and appropriate deployment of assets and resources for improved firm performance.

Key words: Resource-based theory (RBT); dynamic marketing capabilities (DMC), market share; firm performance; brand differentiation.

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1. Introduction

Managers are under constant pressure to improve firm performance using the firm's limited resources. Managing firm resources requires the use and transformation of available dynamic capabilities that improve the organizational efficiency and assist the firm gain a competitive advantage. Dynamic capabilities are the organizational and strategic routines by which firms achieve new resource configurations as markets constantly change. They represent the firm's processes that use resources, specifically the processes that integrate, reconfigure, gain, and release resources to match and even create market change (Eisenhardt & Martin, 2000). The dynamic capabilities research framework eventually gave rise to the dynamic marketing capabilities (DMC) research stream. The DMC research stream proposes that marketing resources and capabilities together play a unique role in determining the needs of customers, distribution channels and competing products. The market knowledge that these resources generate acts as a driving force that allows firms to achieve a high level of adaptation in evolving markets (Bruni & Verona, 2009). One theoretical underpinning of the dynamic capabilities paradigm is the Resourced Based Theory (RBT) of the firm (Barney, 1991). The RBT posits that firms should manipulate a set of complementary organizational resources and capabilities for economic gain. A common economic gain pursued by firms is market share. Research has shown that market share may enhance a firm's profitability (Ambler, 1997; Park & Srinivasan 1994) and, from a marketing perspective, market share signals higher value for a consumer (O'Regan, 2002), which in turn improves a firm's brand portfolio status.

RBT uses a firm's internal resources to explain inter-firm performance differences. Brands represent such a resource. A competitive brand position assures customers of the quality and innovation of the brand. Firms allocate resources towards building strong competitive brands (Davcik & Sharma, 2015; cf. Priem & Butler, 2001), centered around the core values of the firm (Urde, 2003) and are aligned with organizational processes that help deliver the promises to customers through all the firm's departments, intermediaries, and suppliers (Ghodeswar, 2008). As such, organizational performance and firms' internal distribution of resources are tied to their marketing performance.

Although marketing performance has been the subject of continuing investigation, how marketing capabilities, such as brand equity (BEq), are used to determine market share has received little empirical attention (Priem & Butler, 2001; cf. Srivastava et al., 2001; Davcik & Sharma, 2016). Reasons for this research gap include i) marketing scholars not fully accepting the RBT approach due to the absence of clear theoretical frameworks of resources in general, and marketing assets and capabilities in particular (Day, 2001; Srivastava et al., 2001). However, the empirical research on RBT in marketing has attracted

some attention in the last decade. For instance, Fang et al. (2011) studied the effects of customer and innovation asset configuration strategies on firm performance; Hooley et al. (2005) studied market-focused resources and their effects on firm performance; ii) conceptual reasons, that is, researchers are pre-dominantly interested in specific and behaviouristic relationships. In addition, Davcik & Sharma (2016) assert the importance of appropriate unit of analysis in the application of the RBT in marketing context. A typical RBT application in management is based on a firm level investigation, whereas in marketing is based on a customer or brand level investigation. In line with this research paradigm, the authors argue that the RBT research in marketing should be focused on intra-firm dynamics, rather than the inter-firm dynamics such as those found in management research; or iii) methodological reasons. For instance, most of the existing studies employed self-reporting data that have a limited scientific contribution. The two noteworthy exceptions to these reasons are the work of Ramaswami et al. (2009) who examined market-based capabilities and financial performance; and Hooley et al. (2005) who studied market-based and marketing support resources, using a self-reporting study.

The existing knowledge is far scarcer in academic applications and in use of complex models that test the interrelationships among marketing assets and how they affect a firm's resources at the brand performance level. We attempt to bridge this gap by providing empirical evidence of the role that different marketing capabilities, based on firm's innovation activities, have on a firm's market share. Bridging this knowledge gap has both academic and practitioner implications. For the practitioner, differentiation of marketing assets through innovation may require concurrent innovations along the dimensions of customer experience, offerings and presence (Sawhney et al., 2005) all of which have performance implications for the firm. For academics, we expand the extant knowledge by showing how different brand capabilities can be applied theoretically in the context of market share performance. In doing so, we contribute to the DMC research knowledge using the RBT framework.

This paper is structured as follows. Section two provides a discussion on innovation and performance outputs in marketing and resource based literature, a research framework, methodology, and working hypotheses. Section three discusses the data and descriptions of variables used in the study. A two-stage model is presented in section four, with detailed descriptions of (i) brand share estimations fitting a beta regression model and Monte Carlo simulation; and (ii) an analysis based on technology and firm types using a cluster analysis. The final section presents the results of the study and concludes with implications for managers and academics.

2. The resource-based theory and the performance of brand

RBT suggests that the principal determinants of a firm's strategic direction and subsequent performance measurement are the unique bundle of tangible and intangible assets, and dynamic capabilities, which exist within those firms (Priem & Butler, 2001). A central assumption in the RBT is

that any gain from a firm's strategies depends on the attributes of the firm's dynamic capabilities and resources (Barney, 2014; Srivastava et al., 2001;). At its core, RBT is concerned with the internal accumulation and manipulation of assets and knowledge.

2.1. **Dynamic marketing capabilities and the success of innovative brands**

DMC are organizational and strategic routines that managers shape to generate new value creation strategies (Grant, 1996). Eisenhardt & Martin (2000, p. 1107) define dynamic capabilities as: the firm's processes that use resources, specifically the processes to integrate, reconfigure, gain, and release resources. DMC on the other hand are the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve and depreciate. There is a general agreement among marketing scholars (e.g., Keller, 1993) and strategy researchers (e.g., Priem & Butler, 2001; Srivastava et al., 2001) that brands, when developed effectively and managed well, are valuable firm resources. Brands create sustainable competitive advantage (Capron & Hulland, 1999) because they are difficult to imitate (Kor & Mahoney, 2005) and can improve a firm's financial performance (Priem & Butler, 2001; Srivastava et al, 2001) through innovation and differentiation (Berry et al., 2006). Innovation is seen as the way to create brand differentiation, as most markets shift toward commodity status with offerings becoming similar (Aaker, 2007). Within research in innovation, there is little discussion of how innovation should be branded. In the innovation literature, *brand innovation* is defined as constantly developing new ideas to keep the brand fresh, relevant and dynamic (Grant 2011). Firms succeed in the market by offering innovative brands. Conversely, firms can lose their market share if their brand becomes bereft of innovation. Firms use brand innovation to launch a brand, revive it, reposition it, update it, attract a new audience or simply keep it alive and vibrant. Grant (2011) posits that the analysis of competitive advantage as an output of strategy, increasingly focused on the internal aspects of the firm, such as brand innovations. The value of the branding effort will depend on the value of the business it will support, which in turn is based on the current and potential business size, its profitability, the intensity of current and potential competitors, and the potential to maintain the innovation-based differentiation (Aaker, 2007).

Despite the scholarly attention that RBT has received within the strategic management and marketing literature, studies have rarely examined the relationship between brand-based resources, DMC and firm performance (Barney, 2014; cf. Barrales-Molina et al., 2014). We attempt to bridge this knowledge gap by empirically examining how brand equity, marketing investments, and differentiation influence the relative effects of brands on firm performance. Our attempt is in line with recent calls in the RBT literature for further examination in the field of marketing research. (Barney, 2014; Davcik & Sharma, 2016; Day, 2011; Kozlenkova et al., 2014)

2.2. Dynamic marketing capabilities of assets as drivers of brand performance

RBT research examined from a marketing perspective, fails to address how market-based resources and capabilities are developed, maintained and perform in a dynamic marketing setting (Day, 2011; Srivastava et al., 2001). Given the complex nature of brands and their use as strategic assets by firms, market-based assets may boost market performance and lower consumer purchase risk. However, little is known about how capabilities of market-based assets affect current and future market performance (Srivastava et al., 1998). One such market performance measure is market share. Market share represents the effectiveness-oriented concept of a firm's performance, because they are recognized in the literature as the value delivered to the consumer (cf. Sandvik and Sandvik, 2003). As such, a dominant market share may be achieved if a firm's innovation strategy is superior to the competition (Urban et al., 1986). In general terms, a large market share is a reward for providing better value for consumers (O'Regan, 2002; Srivastava et al., 1998), and this relationship has been recognized by both academics and practitioners. Given these findings, some scholars demonstrate that market share causes profitability and brand success, instead of being a result of them (Ambler, 1997). We argue the inverse relationship between these two variables.

In the current study, applied brand innovation will be used as a proxy for perceived quality, because the consumer's assessment of perceived value cannot be observed and measured directly (cf. Ambler, 1997; Davcik & Sharma, 2015).

2.3. The importance of brand equity and investments in obtaining market share

Against the backdrop of an established framework for RBT, and using DMC as a prevailing paradigm, the current study attempts to identify and empirically validate drivers such as the BEq and marketing investments relationship in delivering firm performance. BEq's empirical validation as a driver of competitive advantage and firm performance has been examined from a financial perspective, e.g., marketing investments (Simon & Sullivan, 1993) and a customer based perspective (Keller, 1993). Further, BEq has empirically proven to assist in delivering firm performance (Lassar, Mittal & Sharma, 1995).

Drawing on the findings of previous empirical studies, market share can be increased either by enhancing the perceived value of brands or by reducing price (cf. Aaker, 1991; O'Regan, 2002; Urban et al., 1986). Enhancements to the perceived value can be achieved via higher BEq and marketing investments in brand's related processes and activities (cf. Aaker, 1991; O'Regan, 2002; Urban et al., 1986). Park and Srinivasan (1994) explicitly address the importance of the impact and influence of BEq on market share .

Numerous sources, measures, and theoretical approaches exist in the field of BEq, but there is no mutual agreement on how to develop a unique measure of brand equity or what the drivers of the BEq performance are (cf. Davcik et al., 2015). Academic debate is very intense regarding the conceptualization of the appropriate theoretical and measurement approach in this field (Erdem et al., 1999). The driving force behind this debate are the various research approaches that define different, and in many instances, conflicting measurement approaches and research assumptions such as customer-based, market-based, and finance-based (cf. Keller, 1993; Davcik et al., 2015). Since there is little consensus in the literature on the best approach to measurement, in this study, we adopt the financial-based approach in conceptualizing the BEq. This stream of the BEq research asserts the importance of financially based measurement and valuation of brand value (e.g., Kamakura & Russell, 1993; Simon & Sullivan, 1993;). Thus, we propose:

H1: Higher levels of market share are driven by higher values of brand equity and distinctive marketing investments in the brand.

Marketing investments in a brand's related processes and activities represents service expenses that are intended to increase the quality and reputation of the brand. These investments consist of lagged expenditures in brand and promotional activities (Ambler, 1997; Keller & Lehmann, 2009; Simon & Sullivan, 1993). Further, these expenditures are important because of their influence on brand performance (Rust et al., 2004). For a firm, a lucrative position in the market can yield premium prices and market share. This market mechanism can also provide an entry barrier for companies who have to overcome the incumbent competitors (Chu & Keh, 2006). This inter-correlation is a result of higher brand differentiation due to lagged marketing investments in brands and brand proliferation, which consequently, creates an entry barrier against competition (cf. Chu & Keh, 2006).

Marketing investments in brands will protect a firm's brand against losses of brand share (cf. Keller & Lehmann, 2009). Therefore, the interaction between BEq and marketing investment should yield higher levels of market share. However, this marketing mechanism should be approached with caution. A firm may invest heavily in marketing activities and processes, but still not to gain higher level of market share. Therefore, marketing investments in brands that are associated with high brand value may gain higher levels of market share. Thus, we propose:

H2: There is a positive interaction between brand equity and marketing investments due to the tendency that higher-quality brands generate a higher market share than lower-quality brands with the same level of marketing investments.

2.4. The importance of differentiation in market share research

RBT posits that superior firm performance is contingent on how well the firm develops and deploys its resources and capabilities (Barney, 2014). A common means by which firms achieve superior performance is through the development and marketing of differentiated brands.(Zott & Amit, 2008). Differentiation (as marketing domain) and innovation (as technology domain) are key elements of branding, because they shape and drive a brand's performance (Aaker, 1996). Differentiation involves creating a brand that is perceived to be unique and distinctive in comparison to others on offer (Porter, 1998a).

Successful brands in the market are characterized by higher brand value differentiation in comparison to less distinctive brands (Knox, 2000). Through differentiated brands, firms create an appropriate level of market based value that aids in the development of brand equity. The current study uses firm type as a control variable of brand performance outputs . Similarly, the difference between private-label brands, national and international food producers will be controlled (cf. Choi & Coughlan, 2006).

The market (brand) share premium shows how much of a brand's current market share is related to the value of the brand, when price is *caeteris paribus* (Park & Srinivasan, 1994). Firms that successfully manage brand values will gain market benefits such as capacity utilization (Sandvik & Sandvik, 2003), bigger market share and a premium price. Successfully applied brand innovativeness by the firm will hold the existing price level and/or a monopoly for longer periods of time (Hanna & Dodge, 1995). Brand differentiation can be achieved by the application of different innovation types, such as technology and production standards applied in the creation of a brand. To explain this, Bezawada & Pauwels (2013) discuss the problem of different food categories and its implication on marketing assets such as price or sales, but do not explain what the drivers of these phenomena are. Stringent organic food standards that are based on different level of innovativeness make clear technological, production and marketing differentiation in comparison to the conventional and functional food brands. Successful innovation will give added value to consumers. However, added value cannot be created without distinctive technological and marketing innovation (Doyle, 2000). In light of this, we propose:

H3: The likelihood of gaining a market share increases as the degree of brand innovativeness increases.

3. Dataset

Several data sources have been used in this study. First, we used scanner data from ACNielsen research into the food buying patterns of Italian households. Different variables that describe consumption and market behaviour, such as price, market share, brand volume and qualitative behaviour of brands were extracted from the data. A summary of these variables and their descriptions appears in Tables 1 and

2. To obtain data from ACNielsen, the Consumer Panel Solutions (CPS) and Homescan® panel tool were used. The CPS consumer-centric marketing solutions were used to make in-depth analyses of purchase behavior, demographic profiles, quantities sold, prices paid, at points of purchase. Second, data obtained from the Amadeus financial statements database on Italian companies were used. Data were assessed through the January and December 2010. The research framework has been expanded to include quality independent variables, extracted from these data sources, according to observed quality characteristics of brands and technology applied in their creation.

{TAKE IN TABLES 1 & 2}

Table 1 depicts the variables used in this study. The dependent variable is brand share. Brand share represents the market share of a unique brand in the market. Price represents the amount of money that consumers paid for a product in a store, aggregated at the brand level. Brand equity represents an asset that is calculated by a firm's patents and licenses. This value is used from intangible assets in the companies' balance sheets. This measurement approach is in line with Urban et al. (1986) and Park & Srinivasan (1994, p. 272) as it allows for estimation and "managing an individual brand in a multi-brand firm operating in multiple product categories."

Marketing investments represent lagged investments in the reputation of a brand. The literature suggest that marketing resources (i.e. advertising expenses) are related to the performance of a brand as the ratio of marketing-related expenses to total sales (e.g., Tseng et al., 2007; Fernandez-Olmos & Diez-Vial, 2012). For instance, Simon and Sullivan (1993) criticize the use of overall expenses ratio to sales approach and recommend using advertising expenses on brand level as a better research approach. As such, the overall marketing effects are captured, yet the performance and influence of the individual brand are neglected, and this measure is not precise and appropriate in many practical situations. In contrast to this approach, our indicator is a better performance measure because it captures the individual effect in brands.

Price is a control variable in our model. Setting an appropriate price is vital for the maintenance of market share. Price reductions might be only a short-term measure that will increase market share, because it is very likely to be followed by similar actions from competitors (O'Regan, 2002; Urban et al., 1986).

The firm and innovation type have been used as quality independent variables. The firm type represents quality differences among private-label brands (=1), brands that are managed by the Italian SME producers (=2) and brands that are managed by multinational companies (=3). The innovation type represents different level of innovativeness. These variables are differentiated according to the applied technology, such as conventional brands with added value (=1), organic brands (=2) and functional food brands (=3). Dummy variables were assigned to study the behaviour of applied technology. This is

possible with the behaviour estimations of the organic and functional brands in comparison to conventional brands.

The health-enhancing food brands are focal point of the current study because they are mainstream products in the packaged food industry, characterized by high levels of applied technology, marketing know-how and ethical consciousness. Differentiation between the enriched-food brands and conventional brands lies in the added value of production, marketing and technology. Health-enhancing food has been defined as food that provides health benefits beyond its primary nutritional functions (Bogue and Sorenson, 2001), and includes a broad category of healthy products such as organic, functional and added value foods. The innovation domain in the dataset is represented by conventional juices, milk, and yogurts with added value, such as added vitamins, as well as functional and organic food brands.

Our research framework uses quality independent variables that have been defined and created as a combination of existing empirical data (cf. Einav et al., 2010) and observed brand quality characteristics, according to firm and innovation type. This study used 753 brand samples (juices, milk, and yoghurt).

Descriptive statistics for the variables used are presented in Table 2.

4. Model Development and Results

4.1. Model

A popular technique for estimating market share related phenomena is regression analysis (e.g. Einav et al., 2010; Misra & Trivedi, 1997). The beta regression model was fitted, because a standard *ordinary least square* (OLS) estimation would produce biased results. The *R*-squared and adjusted *R*-squared values have been reported to provide goodness-of-fit indicators of regression. The logarithmic transformation of brand equity and marketing investment was conducted. We undertook this transformation to reduce a large range of values in the dataset that may cause econometrical discrepancies in the estimation process.

A continuous dependent variable was used and we apply a parameterization of the beta law which is applicable for the continuous dependent variable (y) and limited to the interval, $y \in (0,1)$. The beta distribution of dependent variable is appropriate for the continuous measurement on the standard unit interval, $0<y<1$, and beta density. Following Ferrari and Cribari-Neto (2004), let $\varphi=n/(n+s)$ and $\omega=n+s$, where $n>0$, $s>0$ and $\Gamma(\cdot)$is the gamma function. The beta density of y can be written as the function:

(1) $f(y;\ \varphi,\omega) = \frac{\Gamma(\omega)}{\Gamma(\varphi\omega)\Gamma((1-\varphi)\omega)} y^{\varphi\omega-1}(1-y)^{(1-\varphi)\omega-1}$, $0<y<1$

where $0<\varphi<1$and $\omega>0$; and variance can be written as $var(y) = \frac{V(\varphi)}{1+\omega}$, where $V(\varphi)= \varphi+(1-\varphi)$. Ferrari and Cribari-Neto (2004) pointed out that the beta densities can be symmetric for $\varphi=½$ and asymmetric for

$\varphi \neq ½$. Market share was regressed on brand equity, marketing investments and controlled for price, firm and innovation type in line with hypotheses H1 and H2.

The basic brand performance model is represented by:

(2) $Y\text{marketshare}_b = \beta_1 \ln(\text{brand equity})_b + \beta_2 \ln(\text{marketing investments})_b + \delta_1 \textit{dummy company's type}(\text{private label})_b + \delta_2 \textit{dummy company's type}(\text{Italian})_b + \delta_3 \textit{dummy company's type}(\text{foreign})_b + \delta_4 \textit{dummy innovation type}(\text{conventional})_b + \delta_5 \textit{dummy innovation type}(\text{organic})_b + \delta_6 \textit{dummy innovation type}(\text{functional})_b + \delta_7 price_b + u_b$

Where b=1,…,B (brands). β and δ are the parameters that will be estimated under the assumption that the variance of the error term u_b is constant and conditional on regressors. The marginal effects of the independent variables on brand price are measured by the β coefficients. In line with these effects, parameters δ measure the marginal effects of the quality independent variables on brand price. We applied several econometric techniques in order to control for the robustness of our modeling. We controlled for possible multi-collinearity problems, reverse causality, statistical power and fit of competing models. We used the Stata regression collinearity diagnostic to test the variance inflation factors (VIFs) for all independent variables. We discuss these control instruments in the Results section.

4.2. Results

To assess the results of brand performance outputs in the FMCG sector, market share was regressed on brand equity, marketing investment, price, firm and innovation. The basic model has been described in a formal econometric manner with equation 2, in section 4.1. Models M1, M2 and M3 represent the extension of the basic model and are reported in Table 3.

The core research problem in this study is *which variables*, if any, explain the brand performance outputs, and *how* they do so. Model 1 represents the control variables of the model and we use it to establish its basic performance. Model M2 includes the independent variables and the model shows the acceptable fit between variables. The results indicate that brand equity, marketing investment in a brand, price, and innovation type have a high statistical effect on market share ($p<.01$). The Italian brands have no statistical significance on market share. The goodness-of-fit tests show that M2 has a good predictive potential, because the *R*-squared value is 0.2589 and the adjusted *R*-squared value is 0.2517. Surprisingly in M3, marketing investments and firm type have no statistical significance and influence on market share. This perspective conforms to Demma's (2004) assertion that marketing investments often bear no measurable relationship to market impact. However, the lack of statistical significance for marketing investments is surprising given Sheth and Sisoda's (2002) assertion that marketing investments are important to the development of BEq. An explanation for these contradictory findings is offered by

Barney (1991). He noted that all firms are different because they do not have the same history, the same experiences, the same organizational culture, or the same assets and abilities. Thus, marketing investments and their market based performance outcomes will differ from one firm to another. The model shows better fit in comparison to M2, where the *R*-squared value is 0.2757 and the adjusted *R*-squared value is 0.2677.

{TAKE IN TABLE 3}

Simulation by Monte Carlo experimentation is a powerful methodological tool for exposition and illustration of complex econometric models (Cameron & Trivedi, 2009). Monte Carlo simulation can be applied in various statistical environments and for different methodological approaches. We are interested in investigating the robustness and consistency of an estimated model. We apply a class of Monte Carlo simulation method in which the performance of $\hat{y}$ on several random draws was simulated. We follow procedures of Cameron & Trivedi (2009) and we use *estsimp* algorithm that is a part of Clarify by King et al. (2000), a suite of Stata programs for interpreting statistical results. We used a class of Monte Carlo simulation algorithm to test the parameters of the model for their consistency and robustness. There are many simulation technics and algorithms in the literature, but we apply *estimp* simulation algorithm by King et al. (2000) that simulate the performance of $\hat{y}$ based on random draws from multivariate distribution of the model under the study. Mean values of the simulated estimates of regression coefficients show the effect of outcome on experimentations. The results of experimentation reveal that the standard deviation increases to 1000 simulated observations.

{TAKE IN TABLE 4}
{TAKE IN FIGURE 1}

Akaike's information criterion (AIC) and the Bayesian information criterion (BIC) were used to compare the fit and complexity of competing models (Akaike, 1974; Schwartz, 1978). The underlying assumption in information criterion theory is that competing models use the same data and likelihood of the null model. The model with the smallest value of the AIC and BIC will be considered a better fit. Results reveal that AIC (960.0182) and BIC (918.6194) are the smallest for the model M3. These results indicate that M3 outperform alternative models in model fit. The conventional information criteria analysis assumes positive signs for AIC and BIC as well as negative signs for LL and LR analysis. However, that is a common misconception because there is no theoretical or practical reason to validate information criteria by the direction of the sign.

Sawyer and Ball (2012) defended the use of statistical power analysis in marketing research as a complement to the conventional use of statistical significance tests. The statistical power of competing

models has been analyzed by Cohen's power test (Cohen, 1992; 1998). The results show that statistical power of M1 is 0.6127, M2 is 0.7608 and M3 is 0.8121. This implies that only M3 has an appropriate model power, because the threshold value is 0.8.

The possibility of reverse causality is a relevant concern in marketing modeling, and a well-known problem in econometrics. We address this issue and potential model misspecification with careful model formulation (cf. Barth et al., 1998; Hanssens et al., 2009; Schmalensee, 1989). Further, we avoid potential endogeneity concerns with respect to the effects of independent variables, brand equity and marketing investments on price by using the Hausman specification test; in line with Hausman (1978) and Wooldridge (2001). We have found that among estimators ($\chi^2_{df=7}$ 19.88; $p > .95$) have no statistical difference. This result implies that the hypothesized regression approach can be applied and the endogeneity issues will not cause the model misspecification.

To explain brand differentiation, in line with hypothesis H3, innovation effects are introduced and studied, along with the influence of firm type on brand price, using cluster analysis. The concept of clustering is widely discussed in management literature (Aaker et al., 2004; Porter, 1998a; Porter, 1998b)). Clusters are usually discussed as geographical traits, because it is common practice in the management literature to treat and to name this topic only in terms of geographical clusters (e.g., Porter, 1998a). The two-step clustering component method was applied, which is a scalable analysis method designed to handle large datasets and to produce results on data grouping. Our clustering technique is based on a deductive reasoning approach because the number and suitability of cluster variables are predefined and linked to theory (cf. Ketchen & Shook, 1996) and to the use of a two-step, non-hierarchical algorithm. The extant literature on data modeling (e.g., Ketchen & Shook, 1996) suggests that a two-step clustering procedure is the most suitable. During the first step, the variables and cluster centroids are defined. The results then form the basis for non-hierarchical clustering in the second step. This procedure does not have the evident pitfalls associated with other procedures and increases the validity of estimations.

A cluster analysis has been conducted to explain the relationship between quality independent variables and dependent variables. The brand share cluster profiles for the innovation type indicates that four clusters exist in the enriched-food market, as presented in Table 5. The brand share sample has 753 brands; 218 brands in cluster 1, 26 in cluster 2, 293 in cluster 3 and 216 in cluster 4. These results suggest that cluster 3 has the highest brand share, even though it was not possible to assess information on profitability of these brands due to the proprietary nature of the data.

{TAKE IN TABLE 5}

The brand share frequencies are reported in Table 6 according to innovation type. The biggest cluster group represents functional brands, with 38.9% of brands in the enriched-food sector. Organic brands

have a share of 29% and conventional brands have a brand share of 28.7%. These results indicate that functional brands represent the biggest brand share group in the Italian market.

{TAKE IN TABLE 6}

The brand share cluster profiles by firm type, presented in Table 7, indicate that four clusters exist in the enriched-food market, as presented in Table 4. The brand share sample has 753 brands; in cluster 1 there are 134 brands, in cluster 2 there are 32, and in clusters 3 and 4 there are 116 and 471 brands, respectively.

{TAKE IN TABLE 7}

The brand share frequencies are presented in Table 7, according to firm type. The Italian SMEs represent the biggest cluster group with 62.5 percent of brands in the enriched-food sector. Similarly, private-label and MNC brands have small brand shares of 15.4 percent and 17.8 percent respectively. From the above-presented tables we conclude that Italian SMEs represent the biggest brand share group in the Italian market.

5. Conclusions and future research

This study has investigated how DMC affect market share. In line with Kozlenkova et al.'s (2014) suggestions, we have taken several steps toward a formal evaluation of the brand capability and firm performance relationship. First, we demonstrated through cluster analysis that different levels of innovativeness in the inter-firm competition, among different competitors, show unexpected patterns of performance in the RBT context. In doing so, we advance the literature on the relative effects of market based resources (e.g., brands) on firm performance. We did so by empirically examining the effect of a firm's assets and branding from a RBT perspective, on their market share performance. We reinforce the prevailing RBT paradigm that a firm's market share performance is contingent on the correct deployment of their strategic resources and assets. We are not aware of the existence of any other studies that have undertaken this approach.

Second, we contribute to the understanding of the brand competitive dynamics. The lack of empirical research in this stream of the RBT was addressed by Barney (2014), who laments the recent paucity of brand based explanations for superior firm performance in management and marketing literature. To address the gap in the literature, future research might examine brand based explanations of superior performance from several viewpoints. For example, future research could address superior firm performance by examining how DMC drive innovation, which in turn drives new product development.

To further exemplify this point, as Prahalad and Hamel (1990) assert, firms do not compete on new products, but rather on factors that expand the capacity to develop new products.

Third, the results of M3 strongly suggest that a firm can leverage marketing investments only if such investments are associated with a strong brand, that is, a brand with the high brand equity. This finding is somewhat counter intuitive because prevailing marketing logic would suggest positive and significant interrelationships. The reason might be in unequal intra-firm distribution of assets and resources. In the multi-brand firm (as it is the case in current study), a management focus their investments and value development efforts on leading and / or the most prominent brands. This represents a possible new avenue for the theoretical enhancement of RBT and marketing research. This finding is in line with Davcik & Sharma (2016) assertation that the RBT is focused on the *inter-firm competition* and future research should expand RBT research toward *intra-firm dynamics and competition.* An important tool is the brand differentiation approach that distinguishes intra-firm allocation of assets and resources on a firm's brand portfolio.

Future research in this stream could address the Barney's (2014) call for more conceptual and empirical studies addressing the resource-based theory–product market dyad. In doing so, scholars in this field can contribute to the discourse on firm performance by demonstrating the relationship that the resource-based theory – new product development plays in enhancing market driven firm performance.

Similarly, future work could address the RBT - DMC dyad from the development of a firm's intangible offerings. In a broad context, products are either tangible (i.e. goods) or intangible (i.e. services) (Kotler & Keller, 2012). DMC build, integrate, or reconfigure operational capabilities. From a service innovation viewpoint, an important challenge facing firms is how to configure their service offerings and integrate their development into other organizational capabilities to deliver superior brand performance output, given the variable (that is, hard to standardize) nature of services. From a branding point of view, further investigation of brand performance between FMCG and durable goods is must. DMC and market conditions are very different for these two types of brands. Future research could address the intra-firm resource and brand portfolio challenges and / or opportunities for the further development of a firm in the FMCG or durable goods sector. This approach will be in line with the recent call from Davcik et al. (2015) in branding literature on more research of intra-firm resources and brand equity competition.

Another related area for further research results is the time it takes for firms to develop market based resources or capabilities, from the limited availability of knowledge and innovation activities they possess. Given the likelihood that these marketing resources will create a source of competitive advantage for the firm and will decay over time, the time it takes to create and deploy them is an important managerial consideration that requires additional research attention (cf. Kozlenkova et al., 2014).

We present an empirical model showing the relationship that brand, innovation and price have on firm market share performance. Future studies can synthesize additional marketing related capabilities and

value creation assets (e.g., marketing communications, logistics factors) and non-marketing related capabilities (e.g., supply chain management, managerial decision-making approaches) to develop a more robust model for examining firm performance.

Finally, given that DMC are inherently resource-based, future research could address consumer involvement in the development and/or innovation of new brands. This notion treats consumers as a resource to the firm rather than a target for the brand. The idea of brand co-development between a firm and its consumers is not new (e.g., Iglesias et al., 2013). However, how the stakeholder perspective of brand co-development enhances firm competitiveness and performance within an RBT - DMC framework has not been empirically addressed.

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TABLES

Table 1: Variables of the brand performance models

Variable	Name	Description	Value	Source
price	PR	represents the amount of money that consumers have to pay to obtain the brand.	n/l	Nielsen
market share	MS	represents allocated brand share in company brand portfolio; i.e. brand sales share in relation to the total company sales	n/l	Nielsen
brand volume	BV	represents consumer purchase in volume (kg)	n/l	Nielsen
brand equity	t	represents asset that is constituted by advertising efforts, licenses, etc., allocated to the single brand in a company brand portfolio (position B. I – intangible assets in the company balance sheets).	n/l	Amadeus
marketing investment in a brand	m	represents lagged service expenses that are intended to increase the reputation of the brand.	n/l	Amadeus
company type	co	represents difference among private labeled brands (=1), brands owned by the Italian SME producers (=2) and brands owned by MNC producers that have branches in Italy (=3)	1, 2, 3	QIV
innovation type	inn	represents type of a brand according to the applied technology: conventional food (=1), organic food (=2) and functional food (=3)	1, 2, 3	QIV

Legend: **Amadeus** – Company financial statements (balance sheet data), **Nielsen** – data from the ACNielsen research, **QIV** – Quality independent variable; **n/l** – Not limited

Table 2: Descriptive statistics

Variables	Descriptive statistics			
	mean	**standard deviation**	**min values**	**max values**
market share	.0874	.1456	.0015	1
brand equity (log)	6.3971	8.2672	0	8.4281
marketing investment (log)	6.4281	6.8319	3.411	7.9325
dummy innovation type – functional	.3918	.4885	0	1
dummy innovation type – organic	.2975	.4575	0	1
dummy innovation type – conventional	.3108	.4631	0	1
dummy company type – private labeled	.1581	.3651	0	1
dummy company type – SME	.6601	.4741	0	1
dummy company type – MNC	.1820	.3861	0	1
Price	3.9630	1.9841	.2016	11.9117

Table 3: Estimations of the variables in the brand performance models

Variables	**Model 1**	**Model 2**	**Model 3**
brand (market) share	*Dependent*	*Dependent*	*Dependent*
brand equity (log)		-0.1627*** (3.62)	-1.0876*** (4.74)
marketing investment (log)		0.4982*** (10.35)	-0.0326 (0.24)
brand equity * marketing investment			1.350*** (4.11)
dummy company type – Italian	0.0405 (0.89)	0.0038 (0.09)	0.0392 (0.90)
dummy company type – foreign	0.0574 (1.17)	-0.1126** (2.34)	-0.0760 (1.57)
dummy innovation type – organic	0.0912*** (2.25)	0.1244*** (3.25)	0.1541*** (4.00)
dummy innovation type – functional	0.232*** (5.64)	0.1419*** (3.47)	0.1571*** (3.87)
price	-0.2366 (6.23)	-0.1805*** (4.95)	-0.1675*** (4.62)
R^2	0.1287	0.2589	0.2757
adjusted R^2	0.1229	0.2517	0.2677
Prob> F	0.000	0.0000	0.0000
df	5	7	8
AIC	-866.2632	-945.1433	-960.0182
BIC	-838.4633	-908.3443	-918.6194
LL	386.7697	370.485	370.4858
LR	439.1316	480.5716	489.0091
Cohen's power	0.6127	0.7608	0.8121

Notes: Beta coefficients, *** significant at 1% ($p < .01$); ** significant at 5% ($p < .05$); * significant at 10% ($p < .1$)
t-statistics appear in parenthesis

Table 5: Brand share cluster profiles for the innovation and company type

Cluster distribution – brand share

	innovation			company		
Cluster	No. of brands	%	Std. deviation	No. of brands	%	Std. deviation
1	218	29.0	0.080	134	17.8	0.0530
2	26	3.5	0.2098	32	4.2	0.2328
3	293	38.9	0.0577	116	15.4	0.0830
4	216	28.7	0.0797	471	62.5	0.0702
Total	753	100	0.1459	753	100	0.1456

Table 6: Brand share frequencies for the innovation type

Innovation type

	functional		organic		conventional		Total	
Cluster	Frequency	%	Frequency	%	Frequency	%	Frequency	%
1	0	0,0	218	97,3	0	0,0	218	29,00
2	2	0,7	6	2,7	18	7,7	26	3,5
3	293	99,3	0	0,0	0	0,0	293	38.9
4	0	0,0	0	0,0	216	92,3	216	28,7
Total	295	39.17	224	29.74	234	31.08	753	100

Table 7: Brand share frequencies for the company type

Company type

	private label		SME		MNC		Total	
Cluster	Frequency	%	Frequency	%	Frequency	%	Frequency	%
1	0	0.0	0	0.0	134	97,8	134	17.8
2	3	2.5	26	5.2	3	2,2	32	4.2
3	116	97.5	0	0.0	0	0.0	116	15.4
4	0	0.0	471	94.80	0	000	471	62.5
Total	119	15.8	497	66.0	137	18.19	753	100

Table4: Monte Carlo simulations – mean and standard deviation values

Number of simulated observations	**Brand equity**		**Marketing investment**		**Interaction effect**	
	mean	standard deviation	mean	standard deviation	mean	standard deviation
100	0.61439	0.1213	0.01553	0.0932	0.03660	0.00828
500	0.62443	0.1293	0.02442	0.0992	0.03746	0.00886
1000	0.62287	0.1348	0.02523	0.1051	0.03738	0.00934
5000	0.61919	0.1319	0.0234	0.1021	0.03718	0.00912
10000	0.62158	0.1306	0.02405	0.1018	0.03732	0.00903

Figure 1: Monte Carlo simulations