Strategic Capabilities and Performance: An Application of Resource-Based View in Italian Food SMEs

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Abstract

The characteristics of the EU and Italian food market, dominated by evolving regulations, rise of new emerging countries, globalisation, advances in ICT and technology sector, increase of retailers' bargaining power, and changes in consumer patterns, affect especially SMEs, which are forced to develop successful strategies in order to survive on the market. Thus, it is useful to understand the potential sources of competitive advantage for SMEs. Following the theoretical model of Resource-based View, we analysed the effect of SME capabilities on performance, by identifying the significant ones playing a leading role to reach a competitive advantage. In particular, four capabilities have been selected, according to literature: innovation, marketing, network, and acquiring information. The analysis is carried out in 67 food SMEs located in Lombardy, a Northern Italian region, by applying a Structural Equation Model. The results revealed that marketing, network and innovation capabilities positively affect the performance. In particular, process innovation should be exploited in SMEs to act incremental innovations. Moreover, adopting appropriate pricing policies and operating a right consumer targeting help SMEs in perform well, also if they spend time in acquiring information about the market and the other agents of the supply chain. Strong vertical relationships, besides facilitating the information flow, allow SMEs to control each stage of the chain and to monitor the quality level of products.

1   Introduction

The European food industry has been characterised in the last years by several changes. First, the EU food regulation is evolving in order to meet the continuous request for greater food safety, information labelling, and warranty about origin of raw material and processing. Second, the globalization, the rise of new emerging countries, and the development in ICT and biotech are stimulating new production and commercialization methods, as well as they are pushing firms to be more competitive and efficient (Wijnands et al., 2008; Banterle and Carraresi, 2007). Third, the retailers are acquiring greater bargaining power due to the increasing concentration level.

Moreover, on the consumer side, we are observing modifications in consumption patterns, like the increase of out-of-home consumption and preferences always more

focused on healthy, convenience and quality products. These issues lead firms to produce differentiated products (Hughes, 1994; Jongen and Meulenberg, 2005; Wijnands et al., 2008).

All these features are also reflected in the Italian food market and affect especially small and medium sized enterprises (SMEs), which constitute the majority of the sector (Banterle et al., 2011a). Thus, they are forced to develop successful strategies in order to survive on the market beside large competitors which can benefit from economies of scale, and beside retailers aiming at playing a leadership role within the supply chain.

In this context of high market dynamicity and difficulties, it is useful to understand the potential sources of competitive advantage for SMEs (Azevedo and Ferreira, 2007; Teece et al., 1997; Teece, 2007).

The theoretical model of Resource-based View (RBV) is helpful in this sense as it states that a firm that exploits its internal resources and capabilities could achieve a good performance, as the resources are stable and reliable in the process of strategic management, making the firm able to face market dynamics and competition (Barney, 1991; Wilkens et al., 2004; Teece et al., 1997, Teece, 2007).

Therefore, basing the strategy looking at the core of the firm could be successful for SMEs because they could identify their idiosyncratic characteristics in order to differentiate themselves from other competitors and carve out a distinctive niche on the market. Thus, a firm should select its peculiar resources, and find the best way to use and organize them in order to develop specific capabilities and to set up a successful strategy allowing them to operate profitably on the market (Teece et al., 1997; Teece, 2007).

This theme appears deeply discussed, but, even if the economic literature on strategic management models is prosperous of contributes about this topic, the empirical applications are still limited and rare, especially in the food sector. Nevertheless, in this sector, there are some characteristics that allow the application of RBV, as: resource specificities for raw materials and processes; the capacity to innovate; the capability to establish long term vertical relationships. For these reasons it is interesting to utilize this theoretical approach to evaluate the capabilities relevant for food SMEs to perform well.

Therefore, considering capabilities as the firm ability to organise resources to obtain a competitive advantage, the purpose of this paper is to analyse the effect of capabilities on firm performance, by identifying the significant ones playing a leading role to reach good economic results.

The analysis is carried out in the food SMEs located in Lombardy, a Northern Italian region, by applying a Structural Equation Model (SEM). For the study, we identified four categories of capabilities: innovation, marketing, network, and acquiring information.

The paper is organised as follows: the conceptual framework is presented in section 2, the methodology is explained in section 3, the results are reported in section 4, whereas in section 5 the concluding remarks are summarised.

2   Conceptual framework

2.1   The strategic capabilities in the RBV approach

The traditional model of the RBV was theorized in 1991 and is still acknowledged, after 20 years, as one of the most capable model for studying and analysing managerial relationships (Barney et al., 2011; Crook et al., 2008). This model underlines the importance of firm internal resources in order to reach a competitive advantage; indeed "a holder of a resource is able to maintain a relative position vis-à-vis other holders and third persons, as long as these act rationally" (Wernerfelt, 1984). Moreover, Barney (1991) argues that firms in the same sector can be heterogeneous in respect to their own resources and, as resources are not perfectly transferable among firms, the heterogeneity and the consequent competitive advantage achieved could be durable over time. Therefore, in this perspective the resources are fundamental in order to explain the sustained competitive advantage[1] of firms (Barney, 1991; Barney et al., 2011).

Different kinds of resources[2] (physical resources, human resources, organisational resources) give various contributions to the achievement of a sustained competitive advantage depending on how they are organized. The concept of capabilities[3], derived from further research in RBV, concerns the firm skills to organise resources. Whereas the resources include the assets, tangible and intangible, possessed by the firm (Amit and Schoemaker, 1993), the capabilities are referred to the firm ability to develop a set of activities through resource deployment in order to reach a desired end (Amit and Schoemaker, 1993; Helfat and Peteraf, 2003). Day (1994) refers to capability as "complex of bundles of skills and accumulated knowledge, exercised through organisational processes that enable firms to coordinate activities and make use of their assets". In other words, the capabilities represent the skills allowing firms to deploy resources to reach a desired objective.

In order to reach a sustained competitive advantage, the capabilities should be valuable, rare, difficult to identify and understand, imperfectly transferable, not easily replicated and substitutable (Barney, 1991).

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[1] The competitive advantage of the firm is achieved when it implements a strategy generating value and not being implemented by any other competitor (Barney, 1991), similarly to what Porter (1980) asserts. However, the concept of sustained competitive advantage contains one more condition to be satisfied: the competitors have not to be able to duplicate the benefits of the strategy from which the advantage is generated (Barney, 1991). The competitive advantage becomes sustained when the duplication efforts made by competitors result to be unprofitable and, therefore, the firm can compete in a specific and unique way (Ghemawat, 1986).

[2] Examples of resources could be: physical assets, know-how, patents, reputation, R&D dedicated department, human resources, advanced ICT system, etc.

[3] Examples of capabilities could be: innovation, market orientation, networking, market analysis, information acquisition, information sharing, etc.

2.2. Strategic capabilities for food SMEs and hypotheses

Applying this approach to food SMEs, we selected the main capabilities which firms can exploit in order to achieve successful performance. They are represented by innovation, marketing, network, and acquiring information capabilities.

Though food sector has generally a low level of investment in R&D (Capitanio et al., 2010; Rama, 1996 and 2008), **innovation capability** could represent for SMEs a driving force to obtain good performance (Grunert et al., 2008; Avermaete et al., 2004; Su et al., 2011; Leitner and Güldenberg, 2010; Wei and Wang, 2011; Capitanio et al., 2010).

Food SMEs could benefit more easily from process rather than product innovation, that is usually characterised by higher costs, profiting by developments in technology support sectors, higher labour productivity, and superior quality of final product (Schiefer and Hartmann, 2008).

SMEs can also work on incremental, instead of radical, product innovations which usually request lower monetary investments (Capitanio et al., 2010). This kind of innovations may help firms to meet consumer preferences through the realization of products with particular "user-oriented" innovative characteristics (quality standard, evolution of traditional products, healthy attributes, environmental sustainability, etc.) (Grunert et al., 2008).

As a firm can innovate in different ways, making innovations unique, and imperfectly transferable (for example new ingredients, new packaging typologies, new methodologies for prolonging the shelf-life, and so on), the innovation constitutes a capability according to the requirements of RBV.

H1: There is a positive relationship between innovation capability and performance

Marketing capability is one of the fundamental elements to reach a good performance, as SMEs, through differentiation, can satisfy consumer preferences (Gellynck et al., 2012). Indeed, marketing capability is related to the ability of SMEs to take appropriate decisions relatively to: the market where placing the products; the most convenient distribution channels; the price positioning in respect to competitors; the advertising channels to reach their consumer target; the branding strategy. How Lee et al. (2011) well explain, "customers respond to a firm's pricing, product, promotion and distribution marketing program […]" and "marketing programs are a mean for a firm to convert its understanding of customers' unmet needs into actions that a customer can observe and experience. Firms that implement marketing programs better than their rivals should benefit from greater success".

Finally, as firms can operate in different ways in respect of other competitors, marketing constitutes a difficulty imitable capacity (Wei and Wang, 2011). Previous studies argue that capabilities in marketing activities are difficulty transferable (Capron and Hulland, 1999), not imitable (Bharadwaj et al., 1993), and non-substitutable (Moorman and Rust, 1999), confirming the definition given by RBV theory and allowing SMEs to achieve sustained competitive advantage.

H2: There is a positive relationship between marketing capability and performance

The **network capability** allows firms to construct strong relationships along the supply chain. Through upstream and downstream connections, SMEs can acquire new resources, reduce transaction costs, have access to information about consumers, be guaranteed about the quality and safety of raw materials, and finally improve the performance (Cao and Zhang, 2011; Schiefer and Hartmann, 2008; Ruben et al., 2006). Indeed, supply chain agents can act together focused on a common objective, that should be more easily achievable than by working alone (Cao and Zhang, 2011; Sheu et al., 2006).

According to Jap (2001) and Barney (1991), the network capability is in line with the requirements of the RBV, as the internal features which characterize vertical relationships are difficult to imitate, and cannot be substituted, and also the benefits of network bring value to the firm.

H3: There is a positive relationship between network capability and performance

In addition, the network capability helps firms to better know its customers and the other agents (Lee et al., 2011; Day, 2000), through the establishment of a good level of communication along the chain that leads to a better information flow, useful to realize marketing activities (Lee et al., 2011). Indeed "collaboration is not merely pure transactions, but leverages information sharing and market knowledge creation for sustainable competitive advantage" (Cao and Zhang, 2011).

H3-1-1: The network capability indirectly affects marketing capability through a direct improvement of acquiring information capability.

Establishing network relationships, based upon trust and communication, can also improve innovation capability (Grunert et al., 2008; Wei and Wang, 2011; Imai et al., 1985). Frequently it can happen that innovation is not limited to solitary R&D activities, but also involves cooperation programs, aimed at realizing innovations through collaboration among chain partners, with knowledge and expertise sharing and creation (Ruben et al., 2006).

H3-1-2: The network capability indirectly affects innovation capability through a direct improvement of acquiring information capability.

Acquiring information capability concerns the information collection about the market, useful to take appropriate decisions influencing entrepreneurial choices. Firms should collect information about market and possible changes in demand patterns in order to obtain a better performance. Indeed, the knowledge about market, competitors, consumers and other supply chain agents can be converted in a commercial way leading to economic opportunities which firms can profit by (Braunerhjelm et al., 2010). Moreover, through acquired information, firms are more able to take valuable decisions

related to marketing, and then come up with successful performance. Acquiring information could be considered a capability because market system is so composite and various that firms find difficult to imitate each other (Wei and Wang, 2011).

H3-2: The acquiring information capability indirectly affects performance through a direct improvement of marketing capability.

Furthermore, the acquisition of information makes firms more aware about the situation of the market, helping them to be more open-minded and to develop more innovative products (Wei and Wang, 2011). Especially SMEs need information about the external environment, competitors, supply chain agents, and customers, as their resources are limited, and also it is shown that the use of this information improves innovation, because information reduces the risk of unsuccessful products (Avermaete et al., 2004).

H3-3: The acquiring information capability indirectly affects performance through a direct improvement of innovation capability.

On the basis of this conceptual framework, a hypothetical model has been designed and will be tested through Structural Equation Model (fig. 1). The hypotheses mentioned above are represented by relationships both direct (H1, H2, H3) and indirect (H3-1-1, H3-1-2, H3-2, H3-3).
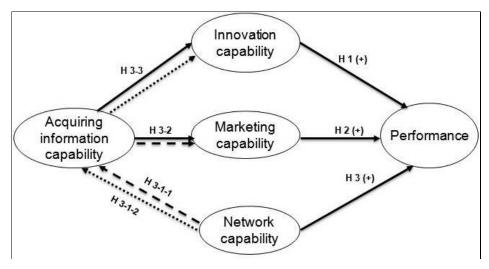

Figure 1. Hypothetical model

3   Methodology

3.1 Variables and indicators

In order to test our hypotheses, and in accord with the preliminary statistical tests, the four capabilities selected (innovation, marketing, network, acquiring information) have been measured using several indicators, reported in table 1.

Table 1.
Description of indicators

Variables and indicators	Items	Measure
Innovation capability		
Development of new processes	from never to always	scale (1-5)
Development of new services	from never to always	scale (1-5)
Kind of resources in R&D	% of the total sale	categorical (c=3)
Investment in new equipment	% of the turnover	continue (%)
Intensity of product innovation *	-	continue (%)
Costs for R&D (% turnover)	% of the turnover	continue (%)
R&D human resources (nr. employees)	nr. full time employees in R&D	continue (nr.)
Marketing capability		
Selling markets	regional, national, international	continue (%
Advertising channels	participation to fairs, internet web site, others	categorical (c=3)
Advertising costs	% on turnover	continue (%)
Industrial brand	% of total production	continue (%)
PDO/PGI/STG labelled products	1=yes; 0=no	dummy (1-0)
Price positioning in respect of competitors	from more to less 20%	categorical (c=5)
Distribution channels (% turnover)	wholesalers, super and hypermarkets, others	continue (%)
Marketing human resources	nr. full time employees	continue (nr.)
Network capability		
<u>Chain relationships</u>		
Vertical relationship with customers	vertical integration, contracts, oral agreements	categorical (c=3)
Vertical relationship with suppliers	vertical integration, contracts, oral agreements	categorical (c=3)
Contract evolution with customers	from high decrease to high increase	scale (1-5)
Contract evolution with suppliers	from high decrease to high increase	scale (1-5)
Collaboration with customers	from not to very important	scale (1-5)
Collaboration with suppliers	from not to very important	scale (1-5)
<u>Relationship characteristics</u>		
Trust	from not to very important	scale (1-5)
Commitment	from not to very important	scale (1-5)
Communication	from not to very important	scale (1-5)
Coordination	from not to very important	scale (1-5)
Joint problem solving	from not to very important	scale (1-5)
Personal relationship	from not to very important	scale (1-5)
Acquiring information capability		
Acquisition of information about market	from not to very important	scale (1-5)
Acquisition of information about competitors	from not to very important	scale (1-5)
Acquisition of information about customers	from not to very important	scale (1-5)
Acquisition of information about suppliers	from not to very important	scale (1-5)
Acquisition of information about final consumers	from not to very important	scale (1-5)
Performance		
Turnover evolution	from much worse to much better	scale (1-5)
Performance evolution	from much worse to much better	scale (1-5)
Net income evolution	from much worse to much better	scale (1-5)
* Intensity of product innovation has been calculated as follows: [(New products + modified products) - Retired products] / Total products		
c = number of categories		

Source: Own elaboration

Innovation capability is measured by the ability of firm to develop new processes and new services for customers and consumers (for example customer care, advanced delivery systems, etc.), the kind of resources used for R&D (whether internal laboratories or external), the intensity of product innovation, the investment in new equipment, the costs and the human resources employed for R&D activities (Avermaete et al., 2004).

Marketing capability is represented by the selling markets where firms operate, the advertising channels used and the costs for advertising, the percentage of products sold under private brand, the presence of PDO-PGI labels, the price positioning, the distribution channels chosen for selling the products, and the human resources employed for marketing activities. These variables were measured by continuous, scale, categorical and dummy measures for two main reasons: facilitating the response by the managers since the absolute measures are not always available and obtaining a mix of information characterised by both managers' perception about these activities and their practical realisation.

Concerning network capability, it has been conceptualized as a second order latent variable, depending on two latent constructs: chain relationships and relationship characteristics. Among the indicators of the first one, we find the contract evolution, the kind of vertical relationship and the perception of the quality of collaboration with customers and suppliers. The second one is formed by the evaluation of the importance of several aspects in the vertical relationships, as trust, commitment, communication, coordination, joint problem solving, and personal relationship.

Each of these latent constructs is constituted by six items and both were measured through a 5-point Likert scale, except for the indicator regarding the kind of vertical relationship with customers and suppliers, composed by three categories (vertical integration, written contacts and oral agreements).
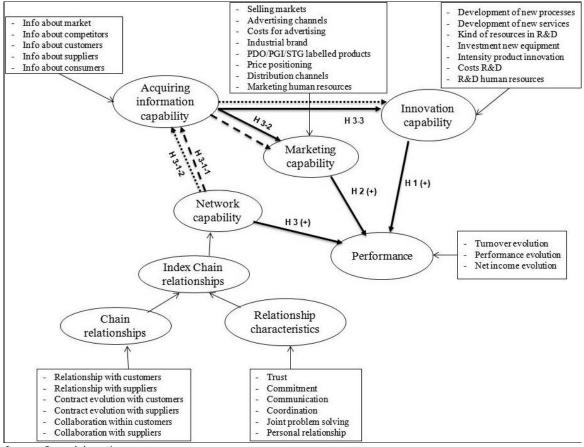
Acquiring information capability is defined by five indicators, like the ability of firms to acquire information about the market, the other competitors, the customers, the suppliers and the final consumers. Each item has been assessed with a 5-point Likert scale.

The performance is also a latent construct and it is characterised by the manager's perception about the evolution of turnover, performance and net income (Su et al., 2011). The scale used was a 5-point Likert scale from worse to better. The final model to be estimated is designed as reported in figure 2.

For analysing data we used a Structural Equation Model (SEM). The structural relationships between relevant capabilities for food SMEs and performance (Mamaqi et al., 2009) have been estimated with the statistical package PLSGRAPH-3[4]. The weights of

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[4] The partial least squares (PLS) method is a technique aimed at the causal-predictive research to relate indicators with latent variables, notable for the absence of assumptions about the distribution of observable indicators (Esposito Vinzi et al., 2010; Chin, 1998 and 2001). In PLS path modeling, it is usually assumed that each block of observed indicators can be summarized in a single latent variable and linear relationships exist among latent variables. For this study, we utilized the PLS approach to structural equation modeling for the following reasons: PLS can model, simultaneously, the relationships among latent variables, and the ones between latent variable and its indicators; PLS is also able to model latent constructs under conditions of small sample size

the indicators are estimated as standardized regression coefficients[5], so the latent variables, representing the capabilities, are estimated in the best way, regardless of the measurement errors of observable indicators (Chin, 1998). The weights indicate the relative importance of indicators in the construction of the latent variables, namely, in the PLS algorithm, each indicator varies in what extent it contributes to compose the score of the latent variable: indicators with weaker relationships with the related latent variable are given lower weightings (Chin, 1998).

Source: Own elaboration

Figure 2. Final PLS structural equation model

3.2   Survey and sampling

Data expressing capabilities and performance of Italian food SMEs have been collected through a questionnaire survey. The questions are based on the literature about RBV applied to food sector and identify the indicators expressing the latent variables used in the model. Before carrying out the survey, the questionnaire has been pre-tested in

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[5] As weights are determined by multiple regressions, the cross correlation among indicators may affect the stability. Thus, we evaluated the bivariate correlation among indicators, that do not exceed 0.7, confirming the absence of multicollinearity The analysis presents a condition index between 13 and 17 (less than 30) and tolerance levels of each indicator above of 0.4 (O'Brien, 2007). This analysis was performed in SPSS 15.

three firms in order to investigate if the questions were sufficiently clear and to reduce the measurement error in survey results (Mathews and Diamantopoulos, 1995).

From the pilot test, it resulted that the questionnaire was well understood and all the questions easily received an answer. Anyway, since this pilot test was carried out through face-to-face interviews, there were some questions which could be improved because they needed additional explanations before the respondent was ready to answer. Therefore, during this pre-testing step, the final measures were once more conceptually reviewed in order to enhance the content validity.

Concerning the sampling, the survey has been addressed to food SMEs[6] located in Lombardy, a Northern Italian region. The activities included in the food sector belong to the category 15 of the ATECO classification, namely "Food and drink industries", which comprises all the food processing activities and excludes the farms.

The firms of our sample count a number of employees from 10 to 250. We excluded micro and large firms because they are too different in terms of capabilities that a comparison would not be fruitful.

The sample comes from a database with data of 412 Lombard food SMEs. This database has been provided by a consultant society called *Centrale dei Bilanci*. These SMEs were asked to fill the questionnaire during a direct interview. Unfortunately, lots of firms refused to answer, thus the final sample is constituted by 67 firms (response rate: 16.3%)[7].

The 75.4% of the sample have between 10 and 49 employees. The main sectors are meat and dairy, which are composed respectively by 18 (26.1%) and 13 firms (18.8%). Bakery and confectionery follow with 5 firms each, and lastly grain mill products and animal feeds with 4 firms each. The others sectors are represented by few firms.

4   Results

4.1   Descriptive analysis

With regard to **innovation capability**, 42% of the firms of the sample develop new processes with high frequency (27.5% often and 14.5% always) (tab. 2). There is also 36.2% of the sample that only sometimes introduces innovations in the production process. So, a fairly good part of the SMEs of the sample is aware about the importance of renovating and upgrading the process in order to benefit from advances in the technology and machinery.

Concerning the development of new services for customers and consumers, a high percentage of firms does not carry out this activity. Indeed, 36.2% of firms only sometimes develop new services, together with 15.9% and 20.3% which, respectively, never and seldom furnish new services to customers. For R&D activities, 53.6% of the

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[6] The classification of SMEs makes reference to that given by the European Commission, as follows:
- Micro firms: less than 10 employees,
- Small firms: from 10 to 49 employees,
- Medium firms: from 50 to 250 employees,
- Large firms: more than 250 employees.

[7] This is a probabilistic sample created following the procedure of random selection (error: 10%; confidence level: 95.5%) from a finite population. The sample constitutes the 1.7% of the SMEs located in the Lombardy region.

sample profits by resources of other firms or external laboratories, whereas 46.4% has its own resources, underlining the interest in innovation.

Table 2.
Innovation capability variable

Variables and Indicators	% firms	Mean	Std. deviation
Innovation capability			
Development of new processes			
- always	14.5		
- often	27.5		
- sometimes	36.2		
- seldom	8.7		
- never	13.0		
Development of new services			
- always	8.7		
- often	18.8		
- sometimes	36.2		
- seldom	15.9		
- never	20.3		
Kind of resources in R&D			
- own firm's resources	46.4		
- others	53.6		
Investment in new equipment			
- < 5% of the total sales	50.4		
Intensity of product innovation *		6.9	15.3
Costs for R&D (% turnover)		4.3	1.3
R&D human resources (nr. employees)		2.5	3.2
* Intensity of product innovation has been calculated as follows: [(New products + modified products) - Retired products] / Total products			

Source: Own elaboration

Nevertheless, the investment in new equipment is rather low, as 50.4% of the firms of the sample invest less than 5% of the total sales. This fact does not exclude that SMEs can carry out some incremental modification on products already existent on the market. The intensity of product innovation is quite good, with a mean value of 6.9, but we have also to notice a high standard deviation, which shows that values are widely distributed, with firms that developed lots of new products in the last five years beside other firms which do not have launched any new product at all.

The costs for R&D are also quite low, as on average the firms of the sample spend 4.3% of their turnover, and the standard deviation is small, demonstrating that the values are concentrated around the average. Finally, relatively to human resources employed in

R&D activities, on average they are 2.5 with high standard deviation; thus, as values are largely distributed, there are firms much oriented to innovation with higher investments and higher number of people dedicated to innovative activities, and other firms less interested in product, process or service innovation, showing a fairly good variability of the sample for what concerns innovation capability.

Regarding **marketing capability**, the more explored market is the national one, as firms on average sell on this market 60% of their total turnover (tab. 3). Regional market is also taken into account, as SMEs on the sample sell 21.5% of their turnover here, whereas on average, almost 17% of the turnover is exported on the international market. Moreover, the mostly used advertising channel is the internet web site (60% of firms), shortly followed by participation to fairs (56.7% of firms). The other channels (radio, TV, newspapers, magazines, etc.) include 31.3% of firms. In this case, the total is higher than 100% as respondents could give multiple answers because firms can utilize more than one advertising channel. The advertising channels chosen by the firms of the sample are also the cheapest one, as confirmed by the advertising costs which count less than 5% of the total sale for 66.7% of the firms of the sample.

Table 3.
Marketing capability variable

Variables and Indicators	% firms	Mean	Std. deviation
Marketing capability			
Selling markets (% turnover)			
- regional market		21.5	24.2
- national market		60.1	37.5
- international market		16.8	14.2
Advertising channels			
- participation to fairs	56.7		
- internet web site	60.0		
- other channels	31.3		
Advertising costs			
- < 5% of total sale	66.7		
Industrial brand (% total production)		64.3	38.1
PDO/PGI/STG labelled products	17.9		
Price positioning in respect of competitors			
- Comparable	65.2		
Distribution channels (% turnover)			
- wholesalers		29.8	35.9
- super- and hypermarkets		32.0	34.0
- other channels		38.0	15.6
Marketing human resources (nr. employees)		2.4	4.7

Source: Own elaboration

Sample firms sell on average 64.3% of their total production under their industrial brand, and almost 18% of the firms of the sample have also the PDO-PGI label. Furthermore, 65.2% of the sample practices a price comparable to that of competitors. Concerning the distribution channels, the production is sold approximately on the same percentage through wholesalers (29.8% of the turnover) and super- and hyper-markets (32%). The other channels receive on average 38% of the turnover of the firms of the sample. Even if marketing activities seem to be well carried out, the human resources employed are not so high, as the mean is around two people, with a high standard deviation though.

Considering the **network capability**, 85.5% of the firms regulate vertical relationships along the supply chain through written contracts (firms could answer with multiple choice), followed by oral agreements (46.4%) and vertical integration (21.7%) (tab. 4).

Table 4.
Network capability variable

Variables and Indicators	% firms	Mean	Std. deviation
Network capability			
<u>Chain relationships</u>			
Vertical relationships with customers and suppliers			
- vertical integration	21.7		
- written contracts	85.5		
- oral agreements	46.4		
Contract evolution with:			
- customers		2.3	1.7
- suppliers		2.4	1.1
Quality of collaboration with:			
- customers		3.4	1.1
- suppliers		3.3	1.1
<u>Relationship characteristics</u>			
Trust		4.2	1.2
Commitment		3.9	1.3
Communication		3.7	1.3
Coordination		3.6	1.3
Joint problem solving		3.8	1.4
Personal relationship		3.7	1.1

Source: Own elaboration

Nevertheless, written contracts with customers and suppliers are on average in moderate decrease (values of 2.3 and 2.4, respectively, where 5 corresponds to high increase). The quality of collaboration among the agents within the chain is perceived by respondents between good and quite good. The aspects considered important to set up successful relationships are trust, commitment, joint problem solving, personal

relationship, communication, and coordination. All reached high values, close to 4, which means a high degree of concern.

The sample SMEs invest time and show a good capability in **acquiring information** about the economic environment where they are inserted. Indeed, the values are all pretty high, between 3.2 and 4.4, meaning that they consider very significant and beneficial to have information for taking appropriate managerial decisions (tab. 5). In particular, firms pay special attention in acquiring information about the market, their customers and the other competitors. Lower interest in dedicated to suppliers and final consumers.

Finally the **performance** evolution is perceived increasing over the last five years (tab. 6). On average, all the three aspects considered – turnover, net income, performance compared to competitors – achieve quite high values, namely they are perceived to be in positive trend in respect with past five years.

Table 5.
Acquiring information capability variable

Variables and Indicators	Mean	Std. deviation
Acquiring information capability		
- about market	4.4	1.0
- about competitors	4.1	1.0
- about customers	4.3	0.8
- about suppliers	3.6	0.9
- about final consumers	3.2	1.3

Source: Own elaboration

Table 6.
Performance variable

Variables and Indicators	Mean	Std. deviation
Performance		
Turnover evolution in the last 5 years	3.8	0.9
Performance evolution in respect with competitors	3.5	1.0
Net income evolution in the last 5 years	3.1	1.0

Source: Own elaboration

4.2 Structural model estimates

Starting our analysis from exogenous model, namely that concerning the relationships between indicators and latent variables, most of the indicators selected for representing the latent variables show a good significance at 99% and 95% level. Table 7 reports only the significant indicators.

In particular, for **innovation capability**, the activities resulted most significant are the development of new processes and services and the intensity of product innovation. Therefore, the improvement of new processes has a positive relationship with firm performance, representing a driving force to enhance the efficiency, especially through

the implementation of incremental innovations within the productive lines. Nevertheless, the indicator "investment of new equipment" is also significant but at lower level. Anyway, it also reveals the importance of process innovation.

Furthermore, another kind of innovation that can help SMEs in developing a better performance is to furnish new services for customers and/or consumers. For example, firms can develop new systems of customer care, home delivery, shipping tracking on line, etc. in order to differentiate themselves from competitors.

The effort on ideating new products (or, more often, modifying some internal or external attributes in products already existent) constitutes another important element to enhance performance. Indeed, SMEs, which often face financial shortage and cannot invest large amounts on R&D activities (indicators regarding R&D are not significant), can benefit from frequent launches of modified products, even slightly different from those of competitors, in order to erode little market shares.

Table 7.
Significant estimated coefficients of measurement model

Path estimated for outer model	Coefficient β
Innovation capability	
Development of new processes	0.39 ***
Development of new services	0.22 ***
Investment in new equipment	0.19 **
Intensity of product innovation	0.25 ***
Marketing capability	
Regional market	0.33 ***
National market	0.38 ***
Industrial branding	0.26 **
Price positioning in respect of competitors	0.24 ***
Network capability	
<u>Chain relationships</u>	
Contract evolution with customers	0.29 ***
Contract evolution with suppliers	0.27 ***
Vertical integration	0.22 **
<u>Relationship characteristics</u>	
Trust	0.38 ***
Commitment	0.35 ***
Communication	0.33 ***
Joint problem solving	0.29 ***
Acquiring information capability	
Acquisition of information about market	0.21 ***
Acquisition of information about competitors	0.28 ***
Acquisition of information about customers	0.19 **
Performance	
Turnover evolution	0.34 ***
Performance evolution	0.33 ***
Net income evolution	0.47 ***

*** $p < 1\%$, ** $p < 5\%$, * $p < 10\%$

Source: own calculations

Relatively to **marketing capability**, the significant indicators are selling in the regional and national market (but not in the international one), and price positioning in respect

of competitors, whereas the use of the industrial brand is less significant. Thus, these results show that SMEs can develop good marketing activities by selling their products in a restricted market and taking appropriate decisions on price positioning. Due to the little firm dimensions and the limited quantity produced, it is understandable that selling into international market is not significant, as they could have difficulties in satisfying a huge demand. So they could be more efficient in marketing by operating in a smaller market, like the national or regional one. They could succeed in such kind of market, as they can produce goods tailored on better known consumers, with often similar habits of the producers because of the same nationality. Moreover, they can profit by reduced transport and delivery costs, and they can benefit from the reputation created by their brand at local level (industrial brand is also significant) being able to resist on the shelves beside large companies. Price positioning is also significant as it is a typical element of the marketing mix, thus it is fundamental for a firm to take right decisions about price by comparing it with that of competitors and adapt it to the target of consumers which it is focused on (Banterle, et al., 2011b).

Moving to **network capability**, the link between chain relationships and performance is significant for the evolution of written contracts with customers and suppliers and the establishment of vertical integration along the chain. The relationship characteristics which resulted significant are trust, commitment, communication and joint problem solving, which represent the glue linking together the actors of the supply chain (Cao and Zhang, 2011). The noteworthy result is that SME network capacity is based on strong and durable relationships (written contracts), which allow firms to maintain stable the quality level of their products by selecting their suppliers and customers. A little bit less significant is vertical integration that of course could be of extremely success, but also requires higher investment in order to manage and carry out more than one step within the supply chain.
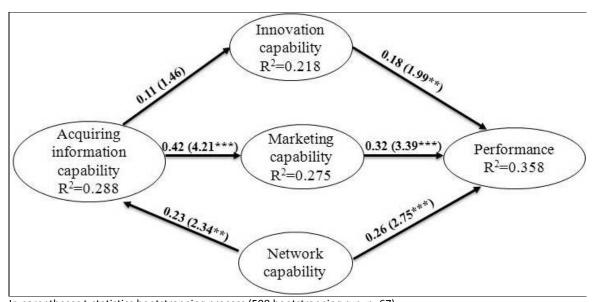
Regarding the **acquiring information capability**, the model shows that the most significant indicators are the acquisition of information about market and competitors, followed by information on customers. It is revealed that SMEs have to utilize information concerning the general trend of the market where they operate, and to obtain information about the competitor strategies in order to be able to apply differentiation through the development of peculiar practices. Indeed, the link between acquiring information capability and performance allows SMEs to be more market oriented, as they can be prepared to face consumer preferences and the rising competition (Banterle et al., 2011a; Hughes, 2009; Traill and Grunert, 1997). The acquisition of information about customers (significant at 95%) is also important for SMEs as retailers are assuming a greater bargaining power, so small firms should be aware about the chance to be present on the shelf beside large companies, which usually are facilitated in dealing with retailers (Banterle et al., 2011b).

Finally, the indicators expressing the **performance** are all highly significant, demonstrating that the independent latent variable is well explained.

Moving to the inner model, the coefficients estimated for direct and indirect relationships among latent variables are presented in figure 3 and table 8. The direct relationships respectively between innovation, marketing, network capabilities and

performance show significant coefficients with expected positive sign. In particular, hypotheses H_2 and H_3 are highly confirmed (p<1%), whereas hypothesis H_1 is confirmed (p<5%) (tab. 9).

Thus, marketing capability is revealed important for SMEs to reach a good performance, demonstrating that operating in a targeted market, caring on sale issues, and adopting appropriate pricing policy lead to profitable results and to growing performance. Indeed, the entity of its estimated coefficient ($\beta_{\text{marketing-performance}}$=0.32) means that it exerts a greater impact on the performance variability than network and innovation.

Network capability is also significant to achieve positive performance, evidencing the relevance that vertical relationships have for SME success. Through contracts with customers and suppliers, and in some cases through vertical integration, SMEs can have better awareness and major control on supply chain stages.

In parentheses t-statistics bootstrapping process (500 bootstrapping run, n=67)
*** p< 1%, ** p< 5%, * p< 10%   *Source: own calculations*

Figure 3. Estimated coefficients of PLS inner model.
Table 8.
Inner model estimated coefficients[8] and different effects among latent variables

Structural relationships	Standardized coefficients effects			Bootstrapping direct relationships		
	Direct	Indirect	Total	Mean of subsample	Standard deviation	t-value
Acquir. info --> Innovation --> Performance	0.18	0.02	0.20	0.19	0.10	1.99 **
Acquir. info --> Marketing --> Performance	0.32	0.13	0.45	0.14	0.12	3.39 ***
Network --> Performance	0.26	-	0.26	0.26	-	2.75 ***
Network --> Acquir. info --> Marketing	0.23	0.10	0.33	0.20	0.03	2.34 **
Network --> Acquir. info --> Innovation	0.23	0.03	0.26	0.20	0.03	1.43

Source: Own elaboration

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[8] To define the direct effect, the path coefficient value of the relationship between predictive latent variables and the criterion latent variable has been taken into account. The total effects are the sum of the direct and indirect effects, whereas indirect effects are calculated by multiplying path coefficients.

Even with a slightly lower level of significance, the innovation capability contributes to obtain a relevant performance as well. As highlighted by the significant indicators discussed above, especially process innovation can help SMEs to achieve good performance, improving production efficiency.

Table 9.
State of confirmation of the hypotheses

Hypotheses	Confirmation
Direct relationships	
H_1: There is a positive relationship between Innovation capability and Performance	+
H_2: There is a positive relationship between Marketing capability and Performance	++
H_3: There is a positive relationship between Network capability and Performance	++
Indirect relationships	
H_{3-1-1}: The Network capability indirectly affects Marketing capability through a direct improvement of Acquiring information capability	+
H_{3-1-2}: The Network capability indirectly affects Innovation capability through a direct improvement of Acquiring information capability	-
H_{3-2}: The Acquiring information capability indirectly affects Performance through a direct improvement of Marketing capability	++
H_{3-3}: The Acquiring information capability indirectly affects Performance through a direct improvement of Innovation capability	-
(-): not confirmed, (+): confirmed (p<5%), (++): highly confirmed (p<1%)	

Source: Own elaboration

Concerning indirect relationships, two out of the four relationships are significant, and considerably stronger than others, namely "network capability → acquiring information capability → marketing capability", and "acquiring information capability → marketing capability → performance", confirming hypotheses H_{3-1-1} and H_{3-2}. Therefore, the ability to establish durable network relationships is also important to acquire information about agents of the supply chain, through a better knowledge of suppliers and customers (Cao and Zhang, 2011), in order to be able to resist in the market and to satisfy consumers' preferences. Consequently, the information taken by the SMEs can improve and strengthen the marketing capability, because it can be utilized to design better differentiated products to be placed in a more appropriated niche of the market.

The other two indirect relationships are not revealed significant. Thus, acquiring information capability does not seem to affect innovation capability.

In addition, a measure of the predictive power of the PLS structural model is the value of R^2 for the dependent latent variables. This index has to be interpreted in the same way as that obtained in a regression analysis. Therefore, this measure indicates to what extent the variance of the construct is explained by the model. Falk and Miller (1992) argue that the explained variance of endogenous variables should be $R^2 \geq 0.1$. On the contrary, $R^2 < 0.1$, even though statistically significant, provides little information, so

the hypotheses concerning the latent variable have a low predictive level. In our case, the value of R^2 is much higher than that indicated in the literature. Indeed, for direct relationships, R^2 indicates that the variables bring over 35.8% of the variability of performance. In addition, for indirect relationships, the variance of acquiring information capability, marketing capability, and innovation capability is explained, respectively, for 28.8%, 27.5%, and 21.8%.

5   Concluding remarks

Following the theoretical approach of RBV, our study investigated the importance of selected capabilities in order for SMEs to achieve a good performance. The estimation of a Structural Equation Model allowed us to understand not only the general causal relationships between capabilities and performance, but also the significant aspects which cooperate to create the global firm capacities leading to sustained competitive advantage.

The most significant capabilities for SMEs are marketing and network. In particular, concerning marketing, it has been revealed that SMEs benefit from selling their products at national level, and often limiting the area to the region. In this way, SMEs have the chance to practice a deep consumer research, with lower costs due to the restricted area, as well as profit by reduced transport costs. Operating in a small area allows firms to reach greater market shares, due to the limited number of competitors, and profit by a better reputation of their brand that could result well known to local consumer. By selling in a small market, SMEs should also be facilitated in the activity of price positioning, also revealed important, as they have larger knowledge about competitors and consumers.

Regarding network capability, it has a twofold effect. Indeed, it has a direct positive influence on the performance, and, at the same time, it shows an indirect effect, contributing to the firm capacity to acquire information about the market and/or other agents of the supply chain. The SMEs revealed specific skills to set durable relationships through written contracts, based on trust and commitment, allowing firms to have an effective communication flow and to jointly solve problems. This result demonstrates that SMEs can obtain a sustained competitive advantage by building stable chain relationships which make the firms able to monitor and control the upstream and downstream stages of the overall supply chain. Furthermore, through contracts with suppliers and customers, especially retailers, SMEs have the chance to be informed about market trends and consumer preferences, helpful to tailor the products exploiting the characteristics well accepted by consumers.

The acquired information about the market and the consumers plays an important role to support marketing activities and, thus, to improve the final performance. Indeed, information can be utilised for product design, for consumer targeting, and for differentiation strategy. It is revealed that SMEs should invest time in taking information, especially by making the most of vertical relationships and generated information flows, in order to reduce the risk of product failure, to be prepared about

retailer requirements of particular product standards, and in general to be market oriented.

The innovation capability is a little bit less significant (p<5%) than the other capabilities to obtain a good performance. Indeed, SMEs often face up with financial shortage and have difficulties in sustaining high investment in R&D. They can achieve a competitive advantage through process innovations and incremental product innovation that can improve the intrinsic and/or extrinsic attributes of products already on the market. In this way, with limited investments and being supported by advances in technology sector, SMEs have the possibility to place on the shelf products with a peculiar identity, which differ from those of competitors. For example, they can act on the packaging or simply on the brand image, or they can modify the recipe by adding beneficial ingredients or reducing unhealthy components, or by developing new versions of the same products (new flavours), etc. Moreover, SMEs can apply particular quality certifications (ethic, environmental, etc.) and develop new parallel lines of products dedicated to special target of consumers (coeliacs, diabetics, etc.).

Concluding, the results showed that SMEs have lots of possibilities to achieve a good performance on the market beside large companies, and can profit by these opportunities through the recognition and exploitation of specific capabilities. If they will be able to develop such capabilities, they will have the chance to survive on the market, to identify a market niche, and to reach a specific target of consumers.

Further research will be focused on enlarging the sample size and the geographical reference area, as well as investigating other kinds of capabilities.

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