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**Cooperative Marketing Innovation:
A Study Applied to Portuguese Companies**

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Abstract

The main objective of this article is to analyze the influence of the cooperation between the company and market partners in the introduction of marketing innovations in Portuguese companies. Marketing cooperation and innovation are currently two of the main areas of research in social sciences, with a great deal of attention from entrepreneurs, market makers and researchers. This is mainly due to the fact that companies look at the market as an important source of possible resources to incorporate into their productive activities - especially those related to innovation - allowing suppliers, competitors, customers and consumers, among other partners, to participate in the development of innovative activities, namely in marketing area, thus giving rise to a new concept: collaborative marketing innovation. Collaborative marketing innovation is based on the assumption that companies should allow the participation of external partners throughout their research and development processes. Many times, such collaboration is in fact a determinant of the innovation's success. The study focuses on the analysis of the influence of cooperation on marketing innovation in Portuguese industrial and service companies, using secondary data provided by INE and DGEEC/MEC, belonging to CIS 2014, whose information reports back from the year 2012 to 2014, which constitutes the most updated database on the subject under study. Related with the main objective, it is also intended to identify the most important partners in the development of collaborative marketing innovation for Portuguese companies and also, the contribution margin of each of these partners for the success of innovation, in order to propose a set of recommendations to companies, compatible with national economic policy. The results of the study show that cooperation with other group companies, suppliers, customers and consumers and consultants or commercial laboratories positively influences the introduction of marketing innovations by Portuguese companies.

Keywords: Cooperation, Marketing Innovation, Partners, CIS 2014.

Introduction

This research aims to analyze the influence of the cooperation between company and market partners on marketing innovation. The cooperation has received great attention from businessmen, market makers and researchers and is defined as 'a relationship or situation in which two or more different things improve or emphasize each other's qualities (Oxford University Press, 2017). This is due to the fact that the market is currently an important source of collaboration for the development of internal business activities, particularly those related to innovation, allowing a number of entities, such as suppliers, consumers, among others, to participate in the development of innovative activities, mainly related to marketing. Thus, the emergence of a new paradigm: collaborative marketing innovation.

The collaborative marketing innovation postulates that companies should allow the participation of other external entities throughout their R&D processes, which is determinant of the success of the innovation developed, be it in product, price, promotion or distribution. Schumpeter (1996) was one of the first researchers to advocate for collaborative innovation and argue that the development innovation activities together can increase the total effect of the innovation on the performance of the firm more than others.

There has been an amount of research to find effects of cooperation with external partners or firms on marketing innovation (e.g. Cassiman & Veugelers, 2006; Junge et al., 2016; Rebane, 2018) whose results point to a positive relationship between these two factors, that is, cooperation favors marketing innovation in addition to endowing companies of superiority.

The purpose of this study is to analyze the influence and importance of cooperation with external partners in the introduction of innovations in marketing by companies, focusing their analysis on the study of Portuguese industrial and service companies. This way, we try to answer the following research question: How does collaboration with external partners improve performance in the company in the field of marketing innovation? The introduction of innovations in marketing is understood here as innovation occurred at the level of any of Marketing Mix P's - product, price, promotion and distribution. In order to proceed with the objective of the study, secondary data are used, provided by INE - National Institute of Statistics and by DGEEC / MEC - General Directorate of Statistics of Education and Science - Ministry of Education and Science, belonging to the 10th Community Survey to Innovation - CIS 2014.

The study begins with a literature review about marketing innovation and cooperation, followed by the description of the methodology, which contemplates the description of the data, the sample and the logistic regression model. Then the analysis and discussion of the data obtained, in terms of the characterization of the companies of the sample with respect to the cooperation and marketing innovation undertaken, and in terms of the influence of the cooperation in the introduction of innovations in marketing by the Portuguese companies. In the last point, final considerations are presented.

Literature Review

Nowadays, companies are more and more aware of the ability to adopt new ideas and technologies developed by other companies and organizations, benefiting from the returns derived from them, thus enabling an increase in the investment in new knowledge, produced externally through cooperation between different actors (Cohen and Levinthal, 1989; Kaufmann and Tödtling, 2001; Masso and Vahter, 2008). This is mainly due to the fact that products have shorter lifecycles and market demand has new features that companies cannot satisfy with the use of their internal know-how and resources (Tsang, 2000).

As a result, marketing innovation should not be understood as an isolated act or product of a single actor. On the contrary, it results from a network and a dynamic and collective learning process that foresees the interaction between the company and a diverse set of actors, including customers, suppliers, competitors, institutions of higher learning and institutions (Lundvall, 1992; Nelson and Rosenberg, 1993; Padmore et al., 1998; Kaufmann and Tödtling, 2001; Tether, 2002; Masso and Vahter, 2008; Lenz-Cesar and Heshmati, 2012).

Marketing innovation, which is a characteristic of the new economies and therefore little focused on literature (most studies focus on innovation in products and processes, i.e. technological innovations), consists in the execution of a new concept or of a new marketing strategy, contemplating alterations to the most diverse levels in marketing compound, namely (Heunks, 1998; Ilić et al., 2014; Medrano and Olarte-Pascual, 2016; Ungerman, Dedkova and Gurinova, 2018):

- In the product or service, at the level of its design or packaging, making it significantly improved in relation to its technical specifications or functional characteristics (including changes in the format and style of the packaging, appearance, color and materials used);
- In distribution, namely through new methods of distribution or placement of products and services, or new channels of sales more efficient and flexible (examples are the introduction of licensed products, franchising, creation of an own distribution network, online sales, etc.);
- In promotion, using new techniques or media to promote the company's products or services;
- In pricing policy, by introducing new pricing tactics to market.

Harms et al. (2002) consider marketing innovation as an element capable of promoting new and evident advantages for companies that, according to Chou (2009), Cherchem (2012), Hashi and Stojčić (2013), Kamp and Parry (2017) and Ungerman et al. (2018) is the key factor of performance differentiation and superiority because they are able to launch new products and services, develop new productive and organizational methods and processes, accessing new markets, new distribution channels or using a new source of raw materials and increased sales or reduced costs thus enabling sustainable leadership in the market.

According to Medrano and Olarte-Pascual (2016), marketing innovation is non-technological, mainly incremental in nature and, for Schubert (2010) and

Soltani et al. (2015) it is an excellent complement to the other types of innovation, namely organizational, product and process innovation. For Soltani et al. (2015), marketing innovation can occur to a greater or lesser degree depending on a set of four factors: demand and requirements of the company's customers, organizational networks of which the company is an integral part, competitive market strength and characteristics of companies and managers.

However, according to Heunks (1998), O'Connor (2006), Faria et al. (2010) and Faria and Schmidt (2012), the success of the innovative activity depends to a great extent on the cooperation with other external partners, to which Katila and Ahuja (2002) and Lenz-Cesar and Heshmati (2012) add that the use of external knowledge through cooperation is positively related to the success of innovation and consequently to the performance and competitiveness of companies.

The cooperation between the company and the different partners can be understood as an active participation of the company in innovation projects, together with other individuals, companies or institutions, where at least one partner withdraws commercial counterparts (O'Connor, 2006). According to the definition presented, cooperation corresponds to a set of opportunities for access to complementary resources and skills-sharing, which, in turn, contribute to the faster development of innovations, improved market access, economies of scale and sharing of costs and risks (Ahuvia, 2000, Lenz-Cesar and Heshmati, 2012, Faria and Schmidt, 2012). As reported by Padmore et al. (1998), external cooperation helps to overcome the constraints faced by companies in terms of own resources and the capacity to develop new products and potential innovations, thus creating synergies between partners.

Bercovitz and Feldman (2007) point out that when defining their innovation strategies, companies seek essentially two types of partners: those that directly contribute to the growth of internal knowledge within the company and those that provide knowledge to help define new trajectories for the company. However, according to Tether (2002), cooperation is a more recurring practice among companies introducing innovations that are new not only for them, but also for the market, whereby the search for external partners is usually associated with more complex innovation processes.

Among the most common partners are the other companies in the group, suppliers, customers, competitors, consultants or commercial laboratories, universities or other higher education institutions and the state and public or private research institutes (Von Hippel, 1988; Bonaccorsi e Lipparine, 1994; Padmore et al., 1998; Kaufmann e Tödting, 2001; Tether, 2002; Doo e Sohn, 2008; Faria et al., 2010; Doran e O'Leary, 2011). In order to characterize the nature of external relationships established in the context of marketing innovation, each partner is described below, as well as its role in cooperation.

a) Group Companies

The cooperation between firms belonging to the same group is one of the most common and frequent types of marketing innovation relationships. This type of cooperation is mainly technological and it is characterized as being of a more

private character, since the other partners tend to establish relationships with the all market (Doo and Sohn, 2008; Faria et al., 2010; Doran and O'Leary, 2011)

b) Suppliers

The relationships established with the suppliers come from a vertical perspective, since they enable the company to innovate inputs, much related to their experience and upstream perspective (Bonaccorsi and Lipparine, 1994; Sako, 1994), thus exercising a clear influence on marketing innovation developed (Kessler and Chakrabatri, 1996, Doo and Sohn, 2008, Faria et al., 2010). The presence of suppliers in innovation activities can be decisive in identifying crucial areas of marketing innovation, either incremental or radical, with benefits for any of the partners involved (Gupta et al., 2016).

According to Bonaccorsi and Lipparine (1994), Padmore et al. (1998) and Trigo and Vence (2012), cooperation with suppliers may occur in the development of new products to be made available in the market, or in the search for customers for the products manufactured or marketed, considering, among the group of suppliers, suppliers of materials, equipment, components or software. However, Kaufmann and Tödting (2001) point out that equipment suppliers and service providers are very important intermediaries, especially in the context of knowledge and technology transfer. The benefits of supplier cooperation lie in the availability of more resources essential to innovation, lower innovation costs and economies of scale, as well as access to research activities and market research (Gupta et al., 2016).

c) Customers

Customers are, from the set of possible partners in marketing innovation, the ones that require the most attention, since they are one of the first inputs of the innovative process: information about their potential needs and desires; and thus constitute the most important source of innovation for enterprises (Padmore et al., 1998; Von Hippel, 2005; Cherchem, 2012; Lenz-Cesar and Heshmati, 2012; Jungle et al., 2016; Rebane, 2018; Ungerman et al., 2018). As Von Hippel (1988), Lundvall (1992) and Enkel et al. (2009) refer, when the company knows the needs of its customers, it has advantages over its competitors, in that, on the one hand, it can more quickly satisfy them and, on the other hand, it reduces the risk associated with the uncertainty of the introduction of new products on the market. Moreover, in the view of Padmore et al. (1998), customers can also be an important channel of information about competitors' innovations, to which Ungerman et al. (2018) add that cooperation with clients is also a way of knowing and simultaneously predicting their behavior.

Shaw (1994) and Chen (2001), recognize some advantages adjacent to the relationships between companies and clients in scope of marketing innovation through cooperation, namely: (i) acquisition of complementary knowledge, predominantly from a user perspective; (ii) knowledge of consumer behavior, as a predictive factor of the final result of marketing innovation; (iii) adjustment of

marketing innovation introduced to the market profile; (iv) identification of changes of consumer opinion; (v) credibility of the company towards the client, making it more professional, attractive and trustworthy; and (vi) ongoing long-term commitment between the parties. Regarding the objectives of business-to-customer cooperation on marketing innovation, Chesbrough and Schwartz (2007) consider the following: (i) increasing the profitability of the company; (ii) increase in innovative capacity; and (iii) creating greater flexibility in R&D.

d) Competitors

Cooperation with competitors is an important way of obtaining information for innovation, which is clearly opposed to common competitive behavior (Dodgson, 2018). In general, the cooperation thus established means learning through the imitation or improvement of products and practices and also through commercial know-how (Von Hippel, 1988; Masso and Vahter, 2008), in addition to enabling the sharing of technological knowledge and skills (Tether, 2002).

For Tether (2002), this type of relationship allows companies to complement each other's strengths and eliminate weaknesses with respect to internal competences in the development of products and services, thus contributing to a general understanding, visible in marketing innovation activities practiced. Cumulatively, according to Linn (1994), companies that have more knowledge about the technological strategies of their competitors, are better able to differentiate themselves from them.

e) Consultants, higher education institutions, state and public and private research institutions

Institutions, as partners in the development of marketing innovation activities, make a significant contribution to the provision of new scientific and technological knowledge (Lundvall, 1992; Nelson and Rosenberg, 1993; Hemmert, 2004). These, according to the CIS (2014), are divided into: (i) commercial consultants and laboratories; (ii) universities or other higher education institutions; and (iii) state and public or private research institutes.

With respect to the first group of partners, consultants or commercial laboratories are, according to Tether (2002) and Becker and Dietz (2004), an alternative partner in cooperation, providing additional support, namely as sources of information and knowledge for marketing innovation, albeit at increased costs. As Bessant and Rush (1995) point out, these types of partners provide access to a multiplicity of inputs essential to innovative activities, very different from those given by the partners already mentioned, including, for example, sharing of experiences between companies, leading to a whole set of new ideas.

In turn, universities and higher education institutions play a very important role in the field of innovative marketing activities, specifically related to the acquisition and dissemination of new knowledge, as evidenced in studies by Fritsch and Schwirten (1999) and Kaufmann and Tödting (2001). Belderbos et al. (2006) and Faems et al. (2005) also confirm that this type of collaboration is

positively related to marketing innovation developed. For Fritsch and Schwirten (1999) and Audretsch and Lehmann (2005), higher education institutions absorb and accumulate self-created knowledge, generate new knowledge and disseminate it in the economy, at reduced costs. Knowledge, according to the authors, is transmitted to companies, by cooperation, through a set of channels that provide for personal interaction, namely: (i) students; (ii) research activities; (iii) scientific publications; and (iv) joint R&D projects.

Lastly, the relationships established in context of cooperation in marketing innovation with the state and public and private research institutes are mainly in terms of technological and scientific aspects. Through those institutions, companies are more likely to gain access to technical, technological and scientific knowledge in order to complement internal R&D activities and to remove the weaknesses associated with the isolated development of such activities, with the added advantage, in some cases, of reducing costs inherent in innovation activities and are therefore considered critical sources of innovation (Padmore et al., 1998). The transfer of knowledge from these institutions to companies can occur in several ways, namely (Padmore et al., 1998): (i) libraries or research laboratories; (ii) public events, such as conferences or meetings, publications, and (iii) policy norms or regulations.

To the foregoing, the integration of the different partners in marketing innovation process of the company, as elements of cooperation, is in line with advocated by the open innovation model, which is the new paradigm of innovation management and which favors the free diffusion of knowledge, the expansion of risk capital and the increase in the availability of technological resources in the market (Chesbrough, 2003; Gassmann, 2006, West et al., 2006, Baldwin and Von Hippel, 2011). Indeed, based on the assumptions of the model, firms can no longer innovate at their own risk, but feel the need to engage in alternative innovation practices, in particular through cooperation in social networks, where they work in a homogeneous and harmonious way, which facilitates from the outset the complementarity of skills, the reduction of development costs and the increased speed of response to the market, especially with regard to the launch of new products (Chesbrough et al., 2006; Enkel et al., 2009; Reed et al., 2012).

In consequence, the result of marketing innovation is a joint action among the various agents, internal and external to the company, and there has been a considerable increase in the number of companies and other agents that cooperate with each other, which makes possible the rapid production of knowledge at lower costs, as well as opening up to new markets that would otherwise be inaccessible (Chesbrough, 2003; Von Hippel, 2005; O'Connor 2006; Lakhani et al., 2012).

The literature review on marketing innovation through cooperation points to the existence of a shared knowledge base among the different actors in the act of innovation. As reported by Feldman and Audretsch (1999) and Belderbos et al. (2006), the complementarity of tasks and economic activities according to the principle of cooperation is the driver of innovation, facilitating not only the exchange of existing ideas but also the acceleration and generation of new ideas and the introduction of improvements in innovation itself.

From the literature review, it is pertinent to analyze the influence of the cooperation between different partners on introduction of innovations in marketing, as well as to determine the degree of importance from each partner in relation to marketing innovation developed. As evidenced by studies by Tether (2002), Dooh and Sohn (2008), Tsai (2009), Faria et al. (2010) and Moreira et al. (2012) among others, there is a positive relationship between innovative marketing capacity in companies and cooperation with external partners.

Methodology

This point aims to describe the methodology inherent to the study, including the definition of research objectives and hypotheses, the characterization of the data used and the operationalization of variables and the empirical model.

Objectives and Hypotheses of Research

The main objective of the research is to analyze the influence of cooperation between different partners on introduction of marketing innovation in Portuguese companies, from which two specific objectives derive:

- a) Identify and characterize the type of cooperation partners with greater influence on the introduction of marketing innovations in companies;
- b) Evaluate the contribution margin of each of the cooperation partners in order to analyze their relevance in marketing innovation process.

Based on the objectives identified and also supported by the literature review, it proposes the following hypotheses:

- Ha: Cooperative relationships established with external partners positively influence the introduction of marketing innovations by companies:
- Ha₁: Cooperative relationships established with other group companies positively influence the introduction of marketing innovations by companies.
- Ha₂: Cooperative relationships established with suppliers positively influence the introduction of marketing innovations by companies.
- Ha₃: Cooperative relationships established with customers or consumers in the private sector positively influence the introduction of marketing innovations by companies.
- Ha₄: Cooperative relationships established with customers and consumers in the public sector positively influence the introduction of marketing innovations by companies.
- Ha₅: Cooperative relationships established with competitors positively influence the introduction of marketing innovations by companies.

- Ha₆: Cooperative relationships established with consultants or commercial laboratories positively influence the introduction of marketing innovations by companies.
- Ha₇: Cooperative relationships established with universities or other institutions of higher education positively influence the introduction of marketing innovations by companies.
- Ha₈: Cooperative relationships established with state and public or private research institutes positively influence the introduction of marketing innovations by companies.

Each one of the hypotheses has associated explanatory variables, related to the type of cooperation partner under analysis, and a response variable, marketing innovation, as can be seen in the following table (1):

Table 1. Hypotheses and Model Variables

Hypotheses	Independent Variable		Dependent Variable	
	Variable	Code	Variable	Code
Ha1: Cooperative relationships established with other group companies positively influence the introduction of marketing innovations by companies.	Cooperation with other group companies	Coop_GC	Marketing Innovation	Mk_Innov
Ha2: Cooperative relationships established with suppliers positively influence the introduction of marketing innovations by companies.	Cooperation with suppliers	Coop_Sup		
Ha3: Cooperative relationships established with customers or consumers in the private sector positively influence the introduction of marketing innovations by companies.	Cooperation with customers or consumers_private sector	Coop_CCpriv		
Ha4: Cooperative relationships established with customers and consumers in the public sector positively influence the introduction of marketing innovations by companies.	Cooperation with customers and consumers_public sector	Coop_CCpub		
Ha5: Cooperative relationships established with competitors positively influence the introduction of marketing innovations by companies.	Cooperation with competitors	Coop_Comp		
Ha6: Cooperative relationships established with consultants or commercial laboratories positively influence the introduction of marketing innovations by companies.	Cooperation with consultants or commercial laboratories	Coop_CCL		

Ha7: Cooperative relationships established with universities or other institutions of higher education positively influence the introduction of marketing innovations by companies.	Cooperation with universities or other institutions of higher education	Coop_UIHE		
Ha8: Cooperative relationships established with state and public or private research institutes positively influence the introduction of marketing innovations by companies.	Cooperation with state and public or private research institutes	Coop_SRI		

Source: Own elaboration.

Data Characterization

The data used resulted from the application of the Portuguese version of the 10th Community Innovation Survey - CIS 2014, which aims to collect information on innovation activities carried out by companies in Portugal during the years 2012 to 2014, namely on innovation in product, innovation in the process, organizational innovation and marketing innovation, and which to date constitutes the most up-to-date database. Only cooperation data (questions 7.1 and 7.2) and marketing innovation (question 9.1 of the questionnaire) were used for the study. The data was validated by the DGEEC / MEC.

The population covered by the analysis includes all Portuguese industrial and service companies with at least 10 employees, corresponding to the companies in Sections B (Divisions 05 to 09), C (Divisions 10 to 33), D (Divisions 35), E (Divisions 36-39), F (Divisions 42 and 43), G (Division 46 and Group 471), H (Divisions 49-53), J (Divisions 58-63), K (Division 64-66), M (Divisions 69 and 71 to 75), and Q (Division 86) of CAE - Rev.3¹ (DGEEC, 2016).

The sample, composed of 7083 companies, was built by the INE, based on the guidelines and recommendations established by the Eurostat - Statistical Office of the European Communities.

Operationalization of Variables and Empirical Model

In the present work we consider a set of eight independent or explanatory variables, related to the type of cooperation partner, and a dependent variable or response - marketing innovation -, extracted from the survey questions previously indicated. Any of these variables is dichotomous, therefore supported on binary data. The dichotomous variables, commonly used in innovation studies (Kaufmann and Tödtling, 2001; Masso and Vahter, 2008, Frenz and Ietto-Gillies, 2009; Heidenreich, 2009) are of great importance, since they allow immediate knowledge of whether a given condition exists, that is, in the present case, whether or not there is marketing innovation.

¹Portuguese Classification of Economic Activities, Revision 3.

According to the characteristics inherent to this type of variables, and adapting to the purpose of the study, the value "1" is assumed if the company cooperated with the partner under analysis (independent variable) or innovated in marketing (dependent variable) and the value "0" otherwise, that is, not having cooperated or introduced innovations in marketing. Given this fact and according to Hair et al. (2006) and Hill and Hill (2009), it is also considered that the most appropriate model for the analysis of this type of variables is the logistic regression model.

Thus, a model is proposed that tries to test the influence of the established cooperation between the companies and the external partners in the introduction of innovation in marketing by the companies, considering marketing innovation as dependent variable and the type of partners chosen for cooperation like independent variables, as mentioned above. It should be noted that both the dependent variable and the independent variables included in the model were selected according to the literature review, as well as with the empirical results of the different studies consulted. The following is the model:

For the study of the proposed model, it was decided to use multivariate statistical analysis, which allows the study of relations between three or more variables, in order to test the influence between them (Hill and Hill, 2009). As evidenced by the studies of Padmore et al. (1998), Kaufman and Tödting (2001), O'Connor (2006), Masso and Vahter (2008), Faria et al. (2010), Lakhani et al. (2012) and Lenz-Cesar and Heshmati (2012), it is expected that firms that establish cooperative relationships with some kind of external partners are more likely to introduce innovations in marketing.

Results and Discussion

The analysis of the data presented was carried out using statistical software SPSS 23.0¹ comprises: (i) the characterization of the companies of the sample identifying those who developed marketing innovations and those cooperated with other partners, to better understand the sample; and (ii) the study of logistic regression models in order to determine the influence of cooperation in the introduction of marketing innovations by Portuguese companies, and thus respond to objectives previously identified.

Company Characterization

At this point, the aim of this study is to characterize the companies in the sample with the objective of establishing a framework for the study of cooperation in the field of marketing innovation, thus enabling a better understanding of the results of the empirical study.

¹Statistical Package for the Social Sciences 23.

Analyzing first the distribution of the companies with regard to marketing innovation undertaken and the cooperation with partners external to the company (Table 2), we have that of a total of 2,259 Portuguese companies that developed marketing innovations in the period from 2012 to 2014, 2,233 companies (98.85%) did it simultaneously with the cooperation of some kind of external partners, which already shows the importance of cooperation for marketing innovation in companies. However, it is high the number of companies that did not develop innovations in marketing in the period under analysis (4,824 companies). At this stage, in the established cooperation are considered national partners, partners from other European countries, partners from the United States of America, partners from China/India and partners from other countries.

Table 2. *Distribution of Companies by Introduction of Innovation in Marketing and Cooperation*

Marketing Innovation and Cooperation	Companies	
	N ^o	%
Companies that introduced innovations in marketing	2259	31.9
Companies that didn't introduced innovations in marketing	4824	68.1
<i>Total</i>	7083	100.0
Companies that introduced innovations in marketing		
Cooperated	2233	98.85
Didn't cooperated	26	1.15
<i>Total</i>	2259	100.0

Source: Own elaboration.

Considering the number of participations/interventions that each of the cooperation partners has in the development of innovative activities in marketing (Table 3), it can be seen that, of all possible partners, suppliers and universities or other institutions of higher education, are those who most cooperate with companies in developing marketing innovations: of the companies that introduced marketing innovations in the period under review, 2,075 had as their cooperation partners suppliers and 2,011 privileged cooperation with universities and other institutions of higher education. Conversely, customers and consumers in the public sector are the partners whom companies least resort to when introducing marketing innovations.

Table 3. *Participation of Cooperation Partners in the Introduction of Innovations in Marketing*

Type of Cooperation Partners	Companies with Innovation in Marketing
Group companies	1,944
Suppliers	2,075
Customers and consumers of private sector	1,955
Customers and consumers of public sector	1,799
Competitors	1,839
Commercial consultants or laboratories	1,913
Universities or other institutions of higher education	2,011
State or public or private research institutes	1,886

Source: Own elaboration.

Model of Innovation in Marketing

After the characterization of the companies in the sample, the model proposed above is analyzed. Considering the literature review, it is assumed that companies, in the context of their marketing innovation activities, cooperate with a wide range of partners and they exert a positive influence on the innovative marketing practices undertaken.

Firstly, a model (in appendix) was carried out to test the influence of cooperation between the different types of partners considered so far, not only from the national market but also from other geographic markets (Europe, the United States, China and India and other countries) and it was found that it was not suitable for analysis because the final independent variables show a negative influence on the introduction of marketing innovation by Portuguese companies, besides the quality of the model also justifying its non-adequacy (for example, the logarithm of the likelihood is too high which means poor quality of adjustment of the model). Given this fact and because everything contrary to what was evidenced in the literature review, it was decided to consider only national partners and thus test the influence of cooperation with national partners in the development of marketing innovation by companies, which results in a sample of 891 companies. The following table (4) shows the results of the model.

Table 4. *Logistic Regression of the Influence Model of Cooperation in Marketing Innovation*

	Model A			Model B		
	Estimation of Coefficients	Proof Value	Exp. B	Estimation of Coefficients	Proof Value	Exp. B
Coop_GC	.496	.003	1.642	.495	.003	1.641
Coop_Sup	.467	.002	1.595	.464	.002	1.591
Coop_CCpriv	.327	.056	1.387	.321	.044	1.379
Coop_CCpub	.116	.681	1.123			
Coop_Comp	-.166	.433	.847			
Coop_CCL	.594	.001	1.811	.558	.002	1.748
Coop_UIHE	.102	.497	1.107			
Coop_SRI	-.231	.185	.795			
Constant	-.177	.181	.837	-.190	.080	.827
Model Summary:						
Correctly predicted (%)	62.1			62.3		
	54.94	.000		52.256	.000	
Cui-square	1147.999			1150.683		
Log likelihood	891			891		
N° of cases						

Source: Own elaboration.

According to the results presented in the previous table and through the analysis of Model A, it can be seen that with the use of the Wald test statistic there are four variables that are not statistically significant at 5%, namely: (i) cooperation with clients and consumers in the public sector; (ii) cooperation with competitors; (iii) cooperation with universities or other higher education institutions; and (iv) cooperation with state and private or public research institutes. This implies the implementation of a new model in which the variables in question are excluded.

Taking into account Model B, it can be seen that the independent variables are statistically significant at the 5% level and the quality of adjustment did not show significant changes compared to the previous model, which is confirmed by the parameters presented, namely the predictive capacity (62.3%), which corresponds to the result of the comparison between the values of the response variable predicted by the model and the observed values, the chi-square test statistic (52.256), with an associated test value of 0.000 and log-likelihood value (1,150.683), which proves the adequacy of the model, that is, attests to its overall significance. From the above, we can analyze the estimates of the final model, since the condition expressed by the general hypothesis (H_a) is verified, i.e. in fact cooperative relationships influence the introduction of innovations in marketing by the companies.

Through the literature review, it was found that the companies that cooperate with external partners are more likely to introduce innovations in marketing, so it is assumed that there is a positive influence of the cooperative relationships on the innovative activity developed by the companies (Tsai, 2009; Faria et al., 2010).

According to the results of the model, the positive effects of cooperation with group companies, suppliers, customers or consumers in the private sector and consultants or commercial laboratories on marketing innovation can be confirmed. Any one of these variables is not only associated to the type of innovation analyzed here, but also reveals a positive relation with it, thus confirming the hypotheses H_{a1} , H_{a2} , H_{a3} and H_{a6} .

It is noted that cooperation with group companies is positively related to the company's ability to innovate in marketing, as evidenced by the value of the parameter estimate associated with the variable (0.495). In addition, companies that practice this type of cooperation have an advantage in developing innovation activities in marketing, 1,641 times higher than companies that do not develop relationships with these partners. These results confirm the hypothesis H_{a1} - *Cooperative relationships established with other companies in the group positively influence the introduction of innovations in marketing by companies*, and also corroborate the conclusions of Doo and Sohn (2008), Faria et al. (2010) and Doran and O'Leary (2011), which characterize the relationships between group companies (mainly of a technological nature) and confirm their influence.

In turn, the companies that cooperate with suppliers are also positively qualified to innovate in marketing, although with a slightly lower advantage than previously mentioned in the development of innovative marketing activities, since the value of the marginal effects associated with the variable is 1,591. These conclusions go against the studies of Kessler and Chakrabatri (1996), Doo and Sohn (2008) and Faria et al. (2010), which in addition to demonstrating the

positive effects of this type of cooperation on marketing innovation, understand that relationships with suppliers are especially important for the development of new products and production processes, as they can also contribute with innovative and fundamental inputs. Based on these results, the H_{a2} hypothesis is confirmed, which states that *"cooperative relationships established with suppliers positively influence the introduction of marketing innovations by companies"*.

Considering the relationships with customers and consumers in the private sector, it can be seen that, like the other two hypothesis already described, there is a positive cause and effect relationship between the cooperation with these partners and marketing innovation undertaken by the companies, which is confirmed by the parameter estimate (0.321), thus confirming the hypothesis H_{a3} - *The established cooperation relationships with customers or consumers of the private sector positively influence the introduction of innovations in marketing by companies*.

Thus, it can be affirmed that companies that establish cooperative relationships with customers and consumers of the private sector, when introducing innovations in marketing, show an advantage in innovating 1.379 times superior to companies that do not establish this type of relationship. However, among the set of cooperation partners, private sector customers and consumers are those that, according to the results of the model, have lower advantages for companies that want to innovate in marketing. Throughout the literature review, it was verified that the cooperative and partnership relationships with this type of partner have been widely studied, derived from its importance (Shaw, 1994; Sako, 1994; Padmore et al., 1998; Kaufman and Tödting, 2001).

Finally, the hypothesis H_{a6} proposes that *"the cooperative relationships established with consultants or commercial laboratories positively influence the introduction of innovations in marketing by companies"*. From the analysis of the cooperation established between companies and commercial consultants or laboratories, this relationship, in addition to producing positive effects on innovation in marketing, gives companies an innovation superiority of 1,748 to companies that do not choose these partners, which also shows that this type of partner is one of the most important elements of cooperation. These organizations, as referred by Kaufmann and Tödting (2001), Tether (2002) and Becker and Dietz (2004), are an alternative partner in cooperation, as a source of information and knowledge for innovation, although with increased costs and whose results mainly focus on the production of scientific and technological knowledge in an economical trend.

In summary, it is confirmed that cooperation with external partners is decisive for marketing innovation, namely with regard to cooperation with group companies, suppliers, customers and consumers in the private sector and consultants or commercial laboratories. Consultants or commercial laboratories are the most preponderant and advantageous partners in this type of innovation.

As described, in this work, it was not possible to prove the effects of the cooperation on marketing innovation introduced by companies of a set of four initially defined partners (customers and consumers of the public sector, competitors, universities or other institutions of higher education and state and

public or private research institutes), because the results of the regression analysis were not statistically significant. A summary of the results of the tested hypotheses is presented in table 5 below:

Table 5. *Synthesis of Hypothesis Results*

Independent Variable	Dependent Variable	Hypothesis	Result
Group companies_GC	Marketing Innovation	Ha1	Confirmed
Suppliers_Sup		Ha2	Confirmed
Customers and consumers of private sector_CCpriv		Ha3	Confirmed
Customers and consumers of public sector_CCpub		Ha4	Unconfirmed
Competitors_Comp		Ha5	Unconfirmed
Commercial consultants or laboratories_CCL		Ha6	Confirmed
Universities or other institutions of higher education_UIHE		Ha7	Unconfirmed
State or public or private research institutes_SRI		Ha8	Unconfirmed

Source: Own elaboration.

Conclusions

The purpose of this study was to analyze the influence and importance of cooperative relationships on marketing innovations in Portuguese companies, using the data resulting from the 10th Community Innovation Survey - CIS 2014, with reference to the period from 2012 to 2014.

According to the literature review, there is a whole set of cooperation partners external to the company that appear as facilitators of marketing innovation. These include other group companies, suppliers, customers and consumers, competitors, consultants or commercial laboratories, universities or other higher education institutions and the state, public or private research institutes. It is therefore assumed that companies, when establishing some type of external relationship in the scope of cooperation with some of these individuals or organizations, increase their chances of innovating in marketing, that is, to introduce changes in product, price, promotion or distribution, which result in something new for the market. However, not all possible cooperation partners reveal equal weight or importance on marketing innovation, although most studies highlight the role of suppliers, customers and consumers and universities and institutes of higher education.

The results of this study indicate that cooperation with other group companies, suppliers, customers or consumers in the private sector and consultants or commercial laboratories are determinants of marketing innovation. So, companies that cooperate with these types of partners show a greater propensity to innovate in marketing, since the cooperation with these partners reveals a positive and significant effect on marketing innovation. Such advantage is nevertheless

superior when the partners are specifically consultants or commercial laboratories and suppliers. However, alongside the suppliers, and although their influence has not been confirmed in this study, companies emphasize the important role and preference of universities or other higher education institutions, as being the most frequent partners when developing innovation.

These results have clear implications in terms of innovation practices, because these can be interpreted as guidelines in the type of relationships or cooperation partners to select when companies introduce marketing innovations. In addition to reinforcing the idea that marketing innovation must result from a joint act of the company and the market. It is therefore considered that cooperative relationships should be enhanced, since they provide the companies with greater competences, in addition to the impact they have on the exponentiation of the national economy, as a consequence of the superiority and competitiveness of companies. In this regard, there are already some European funding institutions that establish cooperation as an essential condition for companies to receive financial support in the field of innovation and R&D.

As a result of the above, the main contribution of this work lies in studying marketing innovation on cooperation perspective, seeking in this way to increase understanding of the subject.

However, in carrying out this study, some limitations were detected, resulting, for example, from the use of a secondary database, which restricts the measurement of the study variables (cooperation and innovation in marketing). It should also be noted that there has not been a sectorial analysis of the companies and also by size, in order to identify the sectors and companies (small or large companies) more likely to develop cooperative marketing innovation. Another limitation is the lack of analysis of the impact of cooperation on each of the components of marketing innovation: product, price, promotion and distribution.

Finally, with regard to the suggestions for future research and also taking into account the limitations highlighted, it is suggested to carry out a study on the achievements of cooperation with different types of partners in marketing innovation, considering also the size of the company, since according to some of the studies analyzed (Tether, 2002; Hashi and Stojčić, 2013), large firms show greater ability to cooperate in innovation activities than small firms, largely due to the greater availability of resources; at the same time, it is recommended the analysis of the effects of the type of cooperation established in the type of marketing innovation carried out, since, according to Tsai (2009), there are relationships with greater impact, for example in innovation in the process, while others are extremely important for the product innovation and marketing; lastly it would also be interesting to carry out the empirical study with data from other European countries where the Community Innovation Survey was conducted, in order to obtain a comparative basis.

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APPENDIX: Table A. *Logistic Regression of the Initial Model of the Influence of Cooperation in Marketing Innovation*

	Model A			Model B		
	Estimation of Coefficients	Proof Value	Exp. B	Estimation of Coefficients	Proof Value	Exp. B
Coop_GC	-,193	,167	,824			
Coop_Sup	,668	,000	1,950	,732	,000	2,080
Coop_CCpriv	,130	,414	1,139			
Coop_CCpub	-1,009	,000	,364	-,932	,000	,398
Coop_Comp	-,603	,001	,547	-,540	,002	,583
Coop_CCL	,279	,110	1,322			
Coop_UIHE	,090	,554	1,094			
Coop_SRI	-,377	,025	,686	-,306	,050	,737
Constant	,095	,499	1,100	,116	,295	1,123
Model Summary:						
Correctly predicted (%)	70,1			70,1		
Cui-square	310,096	0,000		304,347	0,000	
Log likelihood	8558,703			8564,		
N° of cases	7083			7083		

Source: Own elaboration.