

‘COOKPETITION’: DO RESTAURANTS *COOPETE* TO INNOVATE?

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Abstract

This paper studies the influence of ‘coopetition’, that is, cooperation between competitors, on the innovative behaviour of restaurant firms. The analysis is based on data gathered from a representative survey conducted on Spanish SMEs operating in the restaurant industry. A binary logistic regression specification is used to test the core hypotheses in the paper. The results confirm that coopetition fosters product innovation in restaurant companies. Coopeting restaurants also introduce more process innovations, although this effect is not found to be statistically significant. However, participation in restaurant chains and commercialization networks is found to stimulate process innovation. Likewise, business owners with intrinsic entrepreneurial motivation favour product innovation in their restaurants. Notwithstanding, investments in ICT and in staff training are observed to be the main determinants of product and process innovation in the restaurant industry.

Keywords: coopetition, innovation, hospitality, restaurant, Spain, SME.

Introduction

By means of innovation, tourism firms can improve their efficiency, productivity and competitive advantage (Jacob et al., 2003; Hjalager, 2010; Backman et al., 2017; Montresor 2018). Collaboration with other productive, scientific, and technological stakeholders is crucial in order to obtain access to external knowledge for innovation. Innovation can thus be characterized as a systemic phenomenon based on interaction and mutual learning among the actors that constitute the innovation system (Lundvall, 1992). In certain cases, competitive advantages and innovation may emerge as a result of cooperation between competitors, henceforth called ‘coopetition’ (Khanna et al., 1998; Chien and Peng, 2005; Geraudel and Salvétat, 2014).

Coopetition can act as an effective strategy for competitors to obtain mutual gains, while they still compete within certain market niches (Porto-Gomez et al., 2018). Coopetition has been identified as a mechanism to gain access to technological knowledge and skills (Estrada et al., 2016), to identify new diversification paths (Katsanakis et al., 2011), to create new markets through innovation (Quintana-García and Benavides-Velasco, 2004), and to improve the efficiency of resource use (Ritala, 2012).

The literature on coopetition reveals a focus on manufacturing industries, whereas service industries in general, and tourism activities in particular, have received much less attention (see, for instance, Watkins and Bell, 2002; Peiro-Signes et al., 2015; Czernek and Czakon 2016). However, the high fragmentation of the tourism industry requires a collective approach that maintains the balance between cooperation and competition (Go and Williams, 1994; Wang and Krakover, 2007; Weidenfeld et al., 2011). Tourism destinations cluster small businesses that compete with each other, but these companies also need some kind of cooperation to attract visitors from other destinations. Coopetition can thus play a strategic role in the tourism sector.

This paper studies the impact of coopetition in the restaurant industry, which is a characteristic tourism activity (WTO et al., 2008). The restaurant industry accounts for more than 50% of the total employment in the tourism sector in Spain, according to data from the social security system (Turespaña, 2018).

Innovation has become a key factor for competitiveness in the restaurant industry (Ottenbacher and Gnoth, 2005; Ottenbacher and Harrington, 2009). The introduction of new

menus and dishes, restaurants serving new artisan products (e.g. beer, wine, cheese), innovative forms of pairing drinks and food, novel combinations of music and traditional restaurant services, restaurants advocating mindful eating, or those advocating new forms of communal eating, all provide examples of product innovation in the restaurant business. On the other hand, the incorporation of the science of food materials in cooking, the growing use of engineering approaches that cannot be seen but can be tasted (Aguilera, 2012), the increasing attention to food safety, nutrition and design (D’ippolito, 2015), and the use of neuroscientific methods to capture the reaction of the senses to different textures, colours and flavours (Garcia-Segovia et al., 2012) can all be stated as examples of process innovation in the restaurant industry.

The aim of this article is to ascertain whether cooperation between competitors (i.e. *coopetition*) fosters innovation in the restaurant industry. To date, the literature has simply offered an anecdotal view of coopetition in the tourism sector in terms of marketing alliances and has not addressed this topic in the restaurant business, thereby failing to provide an answer to the aforementioned research question.

The data for this study originates from a representative survey conducted on 384 small and medium-sized firms (SMEs) in the restaurant industry in Spain. From a methodological perspective, a binary logistic regression specification is used to test the hypotheses in the paper. The results confirm that coopetition nurtures product innovation in restaurant companies in Spain. Although coopeting restaurants also introduce more process innovation, this effect is not observed to be statistically significant after controlling for other factors.

Theoretical background and development of the hypotheses

From a neoclassical economic perspective, cooperation and competition constitute two unrelated strategies (Gomes-Casseres, 1996). However, from an evolutionary perspective the opposite positioning is found, providing evidence for these approaches being simultaneously used (Brandenburger and Nalebuff, 1996; Bengtsson and Kock, 1999). Through coopetition, firms follow a win-win strategy to benefit from collaboration and competition (Zineldin, 2004; Padula and Dagnino, 2007). This approach assumes that firms work together in order to create additional value-added products and processes (i.e. innovation) and increase their competitive advantage (Lavie, 2007; Gnyawali and Park, 2009). The extant literature has identified that cooperative relationships can increase firms’ business share (Brandenburger and Nalebuff, 1996; Ritala, 2012), improve the efficiency of the usage of resources (Dussauge et al., 2000;

Ritala, 2012) and reduce firms' costs due to agglomeration effects (Soubeyran and Weber, 2002). Notwithstanding, among the most significant gains from cooperation emerges the fostering of innovation. Cooperation relationships can allow competitors to improve their competitive advantage (Gnyawali and Park, 2009, 2011), create new market opportunities (Quintana-García and Benavides-Velasco, 2004), and/or gain competitiveness in the long-term (Katsanakis et al., 2011) through innovation.

According to the resource-based view of the firm, competitive advantages originate from the bundle of resources (financial, tangible or intangible) and capabilities that organizations gather (Penrose, 1959). In order to maintain these competitive advantages, companies need to develop dynamic capabilities that allow them to constantly adapt their resource base to market conditions (Teece et al., 1997). Cooperative relationships can provide a channel to obtain or develop new resources and capabilities through innovation processes. Key resources in this respect include knowledge bases and absorptive capacities.

Cooperation with competitors can stimulate innovation since it provides the opportunity to access new knowledge (among other resources) and share risks. In this way, it can become the source for knowledge spillovers in the industry and can stimulate organizational learning. Furthermore, the dynamism of today's economy has promoted the creation of alliances between competitors to improve existing technologies or products and to develop new technologies. Cooperation between competitors has been regarded especially useful in the early stages of markets (Fjeldstad et al., 2004) for its benefits from network externalities (Katz and Shapiro, 1985).

As a management strategy, cooperation has been analysed from different perspectives such as: its effects on small (Kock et al., 2010) and large firms (Gnyawali and Park, 2011); its influence on future markets (Zineldin, 2004); as well as for different sectors, for instance, food supply (Walley and Custance, 2010), telecommunications (Yami and Nemeh, 2014), professional services (Boström, 1995), and tourism (Kylänen and Rusko, 2011).

In particular, the tourism industry requires a balance between cooperation and competition to build attractive destinations and gain long-term competitiveness (Palmer and Bejou, 1995; Wang and Krakover, 2008). An increasing number of researchers have found cooperative and competitive activities being maintained between stakeholders in the tourism industry (Watkins and Bell, 2002; Wang and Krakover, 2008). The state-of-the-art underlines cooperative ties between small companies in tourism industries in the provision of a joint plan

for the development of the destination (Weidenfeld et al., 2011), in the promotion of a better marketing strategy (Kylänen and Rusko, 2010; Kylanen and Mariani, 2012), and even in the improvement of the individual performance of the firms participating in the coopetition game (Della Corte and Aria, 2016).

Coopetitive practices in tourism have also been found in terms of planning and marketing (Guo et al., 2014). Similarly, the literature also points to the relevance of informal relationships undertaken by tourism firms to complement their products so as to create a more attractive destination marketplace (Fyall and Garrod, 2004). In this regard, trust among partners constitutes a necessary factor in the mediation of coopetitive relationships (Marcoz et al., 2016). The tourism literature still falls short in its provision of a clear explanation of the balance between competition and cooperation strategies, how these coopetitive relationships are established, and of their effects in terms of innovation (Wang, 2011).

In particular, research has barely addressed the topic of coopetition in the restaurant industry. The references in this respect are extremely scarce and basically consider the phenomenon of the co-location of restaurants. In this respect, cooperation between restaurants could be tacit and derived simply from their neighbouring locations. Restaurants located close to each other necessarily compete, but they can also benefit from the clients attracted by a specific restaurant who do not find a free table in their first option. Following the restaurant district approach (Dagnino, 2015), this joint location can also attract more clients to a specific area, since people maximize the probability of being served promptly in at least one restaurant. Furthermore, Osarenkhoe (2010) studied the cooperation between food vendors in a food court in Sweden and found competitiveness improvements due to certain business practices (i.e. use of unique trays, decorations or presentation of the dishes, coordination of menus and dishes) and a common representation through an elected spokesperson.

Inter-firm relationships for the creation of economies of scale in purchasing through central procurement units (Combs and Ketchen, 1999) could constitute another mechanism of coopetition that is particularly relevant in the case of restaurants. In this way, restaurants could establish networks of cooperative partners in order to identify potential suppliers (Martin and Justis, 1993; Shane, 1996).

However, a study into the possible effects of coopetition on product and process innovation remains absent from the literature. In this respect, positive effects of coopetition could come through different channels. It is extraordinarily rare for restaurant companies to

carry out cooperation in R&D or innovation-related projects. On the other hand, knowledge flows between restaurants involved in cooperative relationships can be more frequent. The communication, exchange of ideas, and other forms of collaboration between chefs can stimulate product and process innovation in the restaurant industry. Moreover, staff (e.g. chefs and waiting staff) frequently move between different restaurants (Szivas et al., 2003; Ladkin, 2011), taking ideas, techniques, and expertise from one restaurant to another, hence transferring and diffusing knowledge (Power and Lundmark, 2004). It is also a well-known fact in this sector that many professionals are trained through internships in various restaurants. These often unpaid internships (mostly for cooks and chefs) allow current and potential employees to work hand in hand with other chefs, and are therefore brought into contact with new techniques and cuisines which they ultimately learn (Zopiatis, 2007; Thompson et al., 2017). The system of internships is essential in the organization and functioning of ‘haute cuisine’ restaurants, and is sometimes the result of explicit collaboration agreements (Albors-Garrigós et al., 2013, 2017). Staff rotation, stages and trials in other restaurants thus represent an important channel for innovation diffusion and the cross-fertilization of ideas that could foster innovation.

Based on the aforementioned considerations, the following two hypotheses are proposed in this paper:

Hypothesis 1. The restaurants that maintain cooperative relationships have a higher probability of developing product innovation compared to those that do not cooperate.

Hypothesis 2. The restaurants that maintain cooperative relationships have a higher probability of developing process innovation compared to those that do not cooperate.

Data and methodology

The data for this study originates from a survey conducted in the first quarter of 2016 on 384 Spanish SMEs operating in the restaurant industry. The full questionnaire is available at (LINK to the project’s website after the double-blind review). The literature points to various biases in measuring innovation in tourism industries based on existing databases, particularly at the micro level, with difficulties capturing the internal heterogeneity of tourism firms (Camisón and Monfort-Mir, 2012). As a result, the development of a survey was regarded as the most logical means to answer the research questions proposed.

Small and medium-sized enterprises (SMEs) were defined as companies with at least one paid employee and up to 200 employees. For the design of the survey, the Spanish Central Business Directory (i.e. DIRCE) of the National Statistics Institute was employed to calculate the quotas for the firms classified in terms of their size. This source establishes the reference of 200 employees as an upper threshold for SMEs. The SMEs participating in the survey were randomly selected from the System of Iberian Balance Analyses (SABI) database. The stratified sample is representative of the business population of the restaurant industry in Spain with an error of $\pm 5.0\%$ and a confidence level of 90%. The survey was addressed to the business owners/managers of the restaurants. The surveying technique used was that of computer-assisted telephone interviewing (CATI). A response rate of 20.08% was obtained. No bias was identified between respondents and non-respondents. Table 1 shows the descriptive indicators of the variables used in the analysis.

The dependent variables in this study are related to *product and process innovation*. The two questions included in the survey in order to capture these variables were the following: “During the last three years (2013-2015),

a) has your enterprise introduced innovations such as new products/services or improved them significantly? (Examples of new products include vegan menus or menus for certain kinds of alimentary intolerance, e.g. coeliac, while new services include multimedia menus, wine tastings, oil tastings, etc.).”

b) has your company introduced any new or significantly improved logistic systems, production or distribution methods for its supplies or services? (E.g. introduction of environment-friendly processes, introduction of new tools such as infrared thermometers, vacuum-packing machines, and freeze-drying machines).”

These questions were adapted from the Community Innovation Survey (Eurostat, 2012) and were based on the definitions provided in the Oslo Manual (OECD/EC, 2005), although we additionally included some examples specific to restaurants in order to provide them with a clearer idea about what should be considered as innovation in this context. The indicators for innovation in this research are binary variables.

Given the characteristics of innovation in this industry, in which only a very limited number of restaurants develop world-class innovation, ‘new-to-firm’ innovation was considered. It is remarkable that while in manufacturing and industrial sectors radical innovation constitutes the key to gaining competitive advantage, in the case of tourism and

other service sectors incremental innovation is usually employed in differentiating a company from its rivals (Ottenbacher and Gnoth, 2005; Decelle, 2006). This specifically explains the leading role that only a few large firms (i.e. *haute cuisine* restaurants) play in terms of the development of new-to-the-world innovation in the tourism industry, while smaller players tend to adopt a follower role by imitating the strategies adopted by larger incumbents (Ottenbacher and Harrington, 2009).

Cooperation with competitors (*coopetition*) constitutes the main explanatory factor whose effect on innovation is to be assessed. The business owners/managers interviewed were asked to assess the intensity of the cooperation activities carried out with other restaurants in the three years previous to the survey. They could distinguish between no cooperation, and between low, medium and high levels of cooperation, using a 0-3 ordinal scale. Separate questions were asked regarding their cooperation with national and foreign companies. The final coopetition index is calculated as the sum of the two original variables. This index therefore takes values between 0 (indicating no cooperation with competitors) and 6 (indicating a high level of cooperation with both national and foreign restaurants).

To isolate the effect of coopetition on innovation, three groups of control variables are considered. Firstly, a group of variables capturing personal characteristics of business owners/managers are taken into account. In this respect, education has often been determined as an influential factor for innovation in SMEs (Romero and Martínez-Román, 2012). The level of education is captured in this analysis by an ordinal variable (*education*) ranging between 1 and 5 (where 1 indicates without studies, 2 primary or secondary education, 3 technical training, 4 higher diploma or similar, and 5 university degree). Intrinsic entrepreneurial motivation of business owners was also considered (López-Fernández et al., 2011). The extremely high unemployment rates in Spain in the recent period (over 20% in the reference period of this study) stimulated necessity entrepreneurship and restaurants are one of the most affordable businesses for this type of entrepreneur. In this respect, it is interesting to differentiate those necessity entrepreneurs from those for whom running their own restaurant is a channel of self-realization (Plotnikova et al., 2016). Thus, business owners were asked about their level of agreement with the following question regarding their intrinsic entrepreneurial motivation: “Did you become a business owner due to your desire for personal self-fulfilment and professional growth and to put your experience and knowledge into practice?”. The answers (*intrinsic motivation*) were coded using a 7-item Likert (1 meaning total disagreement and 7 meaning total agreement). The last control in this group is the level of growth ambition

(Martínez-Román and Romero, 2017). The business owners interviewed were asked to assess their intentions regarding the future growth of their enterprise. The answers were coded using a 7-item Likert scale, by considering whether they wanted their companies to be as large as possible (7), or self-manageable, or with few employees (1) (*growth ambition*).

Secondly, a set of variables is included in the analysis to control for other business characteristics that are relevant in the innovation process (see Table 1). Using a dummy variable, restaurants in *coastal* and *inland* destinations are differentiated in order to approach different tourism typologies and motivations. Another binary variable enables differentiation between those restaurants that were part of *restaurant chains* (such as McDonalds, Telepizza, KFC). Furthermore, the participation in *commercialization networks* (e.g., Eltenedor, JustEat, Groupon) is also captured by a dummy variable. The size of the company, in terms of *number of employees*, has often been used as a control variable in studies on innovation in SMEs (Sundbo et al., 2007; Tejada and Moreno, 2013). Higher *prices per service and client* (continuous variable) and the attainment of quality certifications (Q for touristic quality, the Michelin guide, the Repsol guide) (*quality standard*) (binary variable) indicates those restaurants with higher quality and dishes of a more sophisticated nature, which might therefore be more active in terms of innovation. Staff training has also been identified as a major factor favouring innovation in SMEs (Martínez-Ros and Orfila-Sintes, 2012; Martínez-Román et al., 2015; Heusdens et al., 2016). Companies were asked whether they had invested in training (internal or external) for their employees (*staff training*) and in ICT (*ICT investment*). The answers were coded using a Likert scale with four levels ranging from “no investment” (0) to “high level of investment” (3).

The third group of control variables gathers information on cooperation activities with other institutions and groups. This is a relevant issue to control for in order to isolate the possible effect of coepetition on innovation. Those companies that are more cooperative than others may carry out cooperation relationships with any number of a wide range of partners, such as competitors, suppliers, clients, administrations, universities, and research centres. Various forms of cooperation have been observed in the literature to foster innovation in tourism companies (Tejada and Moreno, 2013; Martínez-Román et al., 2015). Consequently, cooperation activities of different natures are correlated and therefore a correlation between innovation and coepetition could be in practice due to the effect of any type of cooperation. This is an issue that has seldom been taken into account in previous studies dealing with the potential effect of coepetition. Three different types of cooperation are considered in this paper,

along with coopetition: cooperation with universities and research centres (*university cooperation*), cooperation with suppliers (*supplier cooperation*), and cooperation with clients (*client cooperation*). Business owners/managers were asked to assess the intensity of the cooperation relationships with those actors in the three years previous to the survey. As for the case of coopetition, business owners/managers could distinguish between no cooperation, and a low, medium and high level of cooperation, using a 0-3 ordinal scale. Separate questions were asked regarding cooperation with national and foreign actors. The final indices for these control variables were calculated as the sum of the two original variables and take values that range between 0 and 6.

Insert Table 1 around here

As can be seen in Table 1, the majority of restaurants in the sample introduced product and process innovation in the period 2013-2015. However, only 10 percent of the sampled restaurants had maintained any type of cooperation with other restaurants in the previous three years. The average level of cooperation with competitors, therefore, remains low, but is higher than the intensity of vertical cooperation with clients and suppliers and cooperation with universities and research centres. Figure 1 shows the distribution of the restaurants interviewed in terms of the intensity of their coopetition activity. Only 1 percent of the restaurants interviewed exhibited a high level of cooperation with other restaurants (equivalent to items 5 and 6 in the Likert scale that measures coopetition).

Insert Figure 1 around here

The average restaurant owner in the sample had secondary studies or a higher diploma or similar and showed relatively high levels of intrinsic motivation and growth ambition. The restaurant companies that participated in the survey had, on average, 20 employees, no quality certification, were neither members of restaurant chains nor participating in commercialization networks, and had an average price per service per client of 23 euros, with a low level of investment in ICT and in training for their employees.

Figure 2 shows that cooperation with competitors of a more intense nature is associated with higher levels of both product and process innovation. However, in order to validate these descriptive results, they need to be confirmed by the regression analyses subject to the proposed controls.

Insert Figure 2 around here

As discussed, the dependent variables in this study (product innovation and process innovation) are dichotomous. Hence, a binary logistic regression specification is used to test the core hypothesis in the paper. The logistic regression model can be presented as follows:

$$\ln\left(\frac{p}{1-p}\right) = z = \beta_0 + \beta_c \text{coopetition} + \beta_1 x_1 + \dots + \beta_k x_k \quad (1)$$

where p is the probability for a restaurant company to introduce any product/process innovation, coopetition is the main explanatory variable in the analysis, x_j represents the control variables discussed above and β_j denotes the regression coefficients. Accordingly, the probability of introducing product/process innovation is given by the following expression:

$$p = \frac{\exp(\beta_0 + \beta_c x_c + \sum_j \beta_j x_j)}{1 + \exp(\beta_0 + \beta_c x_c + \sum_j \beta_j x_j)} \quad (2)$$

This logistic regression model is estimated using the maximum likelihood method. Variance Inflation Factor (VIF) values of the variables in the models are less than 4 and the highest value of the condition indices of the variables is 18.61. These results allow any serious multicollinearity problems to be ruled out.

Results

Table 2 shows the results of the binary logistic regression for product innovation. Model I considers the main explanatory variable and the personal characteristics of the restaurant owners as the only controls. In turn, Model II adds the controls for the characteristics of the restaurants, while Model III presents all the variables, including the controls for other forms of cooperation.

Regarding entrepreneurs' personal characteristics, intrinsic motivation shows a statistically significant effect in the three models, whereas growth ambition is only significant in Model I. The level of education of the restaurant owner is not significant in any model. According to these results, those business owners of restaurants that start up with intrinsic motivation (and with greater growth ambition) enjoy a greater probability of introducing product innovation in their activity.

With regards to the characteristics of these restaurant companies, only the investment in ICT and in training activities for the staff incur a significant effect on product innovation in Models II and III. Those restaurant companies that invest in training programs for their employees show a higher tendency to innovate in their products. Moreover, this variable is the one that has the strongest effect on the probability to innovate, as reflected by the values of the odds ratio (Exp β). Likewise, restaurants investing more in ICT enjoy a greater probability of introducing product innovation.

The first hypothesis in this paper postulates the positive effect that cooperation between competing restaurants has on product innovation. The results for the cooperation variable support this hypothesis. The effect of cooperation on product innovation is positive and statistically significant in Model I, and remains the same after controlling for the business characteristics (Model II), and for other forms of cooperation (Model III). Moreover, the odds ratio for this variable is the second highest in the regression, after only the variable for investment in staff training.

Insert Table 2 around here

The results in Model III also show a negative effect of cooperation with suppliers on product innovation. However, this effect is only marginally significant, and when this variable was included in models excluding other types of cooperation, then the sign of the coefficient turned positive.

Table 3 presents the results regarding process innovation. The analysis is analogous to that for product innovation, namely, Model I considers the main explanatory variable and the personal characteristics of the restaurant owners, Model II additionally includes the controls for

the characteristics of the restaurants, and Model III adds other forms of cooperation. Regarding the personal characteristics of business owners, intrinsic innovation is the only significant factor in Model I. Moreover, this personal characteristic shows only a marginally significant effect in this initial model, but not in Models II and III. This result points towards the intrinsic motivation of entrepreneurs in the restaurant industry being more oriented towards product innovation than to process innovation.

Those restaurants that are part of restaurant chains and those that participate in commercialization networks are observed as introducing more process innovation, as the significant coefficients for these variables in Models II and III show. This can be explained by knowledge flows and learning processes originating from within the chain and the network. Both investments in ICT and in staff training are highly significant factors in Model II. However, in this case, ICT seems to be more influential on process innovation than staff training according to the odds ratios of the variables.

The coefficient for the cooperation variable is observed to be positive and significant in Models I and II (marginally), but the effect becomes non-significant in Model III. In the case of Model III, the coefficient is even negative, albeit non-significant. Overall, these results do not allow the confirmation of Hypothesis 2, which postulated a positive effect of cooperation on process innovation in restaurants. The remaining cooperation variables are not significant in any of the three models.

Insert table 3 around here

Discussion

The results reported in this paper show that cooperation holds significant explanatory power for the development of product innovation in restaurant firms, while its effect on process innovation cannot be fully supported according to the evidence gathered herein. These different results provide clues about the mechanisms through which cooperative relationships operate in order to foster innovation.

On the one hand, innovation in the restaurant industry is not often derived from investments in R&D or formal processes of innovation, but is the result of creativity, learning-

by-doing processes, organizational upgrading, or technological absorption. These mechanisms can be reinforced by the flows of knowledge coming from other restaurants. New ideas for dishes and menus and knowledge about new techniques can be originated by collaboration between chefs and can be favoured by the high personnel rotation in this sector, among other channels. These flows can easily operate in the context of mere informal relationships, which allows cooperative relationships to be their source. It is worth noting that it is rare that collaboration between restaurants takes the form of explicit and formal agreements.

However, competition among restaurants in process innovation becomes burdensome since it often implies modifying clearly demarcated organizational routines. In this context, collaboration with other actors turns out to be more relevant. Our results indicate that the membership into restaurant chains and the participation in commercialization networks represent more effective channels for the process upgrading of the SMEs in the restaurant industry.

Those types of collaboration are formalized in contractual terms, thereby determining a more stable and sound relationship, which can have the capacity to modify the internal routines of the restaurants involved. They can originate flows of knowledge and support that are especially significant in the case of restaurants integrated into chains.

In the case of commercialization networks, which are an emerging and dynamic actor in today's restaurant industry, beginning a collaboration with the network can infer major changes in the internal routines of the restaurants. Those changes mainly affect the way in which the restaurants interact with their clients, and involve changes in the reservation policies and practices and a more immediate and continuous dialogue through social networks (comments, critiques, and positive remarks of clients). This transformation in the relationships with clients demands new forms of customer support and can stimulate process upgrading in response to the needs and suggestions received from the clients.

The results also provide evidence that, in those cases in which entrepreneurs decide to initiate a venture in the restaurant industry through intrinsic motivation instead of through necessity, innovation is central to their further development and consolidation. In this respect, a truly entrepreneurial attitude seems to matter more for product innovation than the general education background of the entrepreneur. In any case, this factor is not relevant for process innovation. This could be explained by the different nature of these types of innovations, since product innovation is more closely associated with creativity in the case of restaurant

businesses. This creativity could be a characteristic that is more frequent in entrepreneurs who become involved in opening a restaurant as a form of self-realization.

Finally, according to the previous results, the investments in ICT and in training activities for the staff are major conditioning factors of product and process innovation. However, although both staff training and investments in ICT exert a positive influence on both types of innovation, the impact of staff training seems to be greater regarding product innovation ($\beta=0.720$ in Model III, see Table 2), while ICT is more influential for process innovation ($\beta =0.727$ in Model III, see Table 3). This can also be explained by means of the different nature of product and process innovations.

Conclusions

Innovation is often characterized as a systemic phenomenon that requires cooperation among the different stakeholders embedded in an innovation system. This implies that innovation is more frequently developed when different sets of organizations (e.g. universities, higher education institutions, research and technology centres, customers, suppliers) join together in their efforts to achieve a common purpose that benefits all actors engaged in that cooperative relationship. In particular, when firms cooperate with their competing peers, the interaction is referred to in the literature as ‘coopetition’.

To date, most coopetitive examples have been reported in manufacturing industries, and to a much lesser extent in service industries, while the analysis of coopetitive relationships remain in its embryonic stage in the case of tourism. This paper has focused on restaurants as a central actor in the tourism industry, since no previous study has dealt with coopetition as a determinant of the innovative orientation in this industry.

The research question that leads the paper is the following: Do restaurants coopete to innovate? In order to answer this question, data pertaining to 384 SMEs operating in the restaurant industry in Spain has been gathered through a survey conducted in 2016. Firms were asked about the product and process innovation they had introduced in the three years immediately prior to conducting the survey. Coopetition with other restaurants was proposed as an explanatory factor for the introduction of innovation. In order to control for other factors influencing product and process innovation, three groups of control variables were also considered: variables capturing the personal characteristics of the business owners/managers,

variables controlling for other business characteristics that are relevant in the innovation process, and variables assessing the cooperation activities with other organizations beyond competing firms.

The results confirm that cooperation between competitors favours product innovation in restaurant companies. Furthermore, restaurants that cooperate introduce more process innovation, but this impact is not found to be statistically significant when the necessary control variables are included. Given the absence of studies in this field in the literature, this paper provides a first step toward assessing the relevance that competition may hold in fostering innovation patterns in the restaurant industry.

The analysis also reveals that those business owners with intrinsic entrepreneurial motivation favour product innovation in their restaurants. Likewise, participation in restaurant chains and commercialization networks stimulates process innovation. However, overall, the investments in ICT and in staff training are observed to constitute the main determinants of product and process innovation in the restaurant industry.

The positive effects of competition in the restaurant industry imply that managers and policy makers should promote the development of cooperative relationships instead of laying emphasis on stand-alone approaches oriented towards the development of in-house innovation.

The results reported herein open several avenues that could be clarified, nuanced, or reinforced in further research. This research is based on a survey of the business owners/managers of the restaurants, who are not necessarily the head chefs. In the majority of restaurants, which are micro or small companies, those roles tend to concur in the same person. However, different people could assume those functions and both types of actors could play a particular role in innovation initiatives. Furthermore, more research is needed in order to delve into the specific mechanisms through which cooperation between restaurants stimulates innovation. This would imply a more in-depth analysis of the nature of knowledge flows and other possible channels for these effects.

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