Title:

Knowledge transfer in haute cuisine: the relationship between chefs as an enabler factor

Author names and affiliations:

Raúl Escalante [1], Merce Bernardo [2], Anna Arbussa [3]

[1] Business Department, Faculty of Economics and Business, University of Barcelona, Barcelona, Spain. Email: raulescalante@ub.edu

[2] Business Department, Faculty of Economics and Business, University of Barcelona, Barcelona, Spain. Email: merce.bernardo@ub.edu

[3] Department of Business Administration, Management and Product Design, University of Girona, Girona, Spain. Email: anna.arbussa@udg.edu

Corresponding author:

Raúl Escalante

Email: raulescalante@ub.edu

Knowledge transfer in haute cuisine: the relationship between chefs as an enabler factor

Abstract

The aim of this article is to analyze the relationships between haute cuisine chefs and to identify which elements of these relationships enhance the generation of ideas and the exchange of knowledge. A qualitative methodology is applied based on the analysis of in-depth interviews with almost the entire population of Michelin-starred chefs of Catalonia, Spain, an outstanding case in this sector. The findings show the most important elements of the relationships that drive the creation and transfer of knowledge. These elements can be differentiated between professional and personal aspects and classified as face-to-face or non-face-to-face. Admiration, recognition and collaboration are some of the examples of the effects derived from these relationships. The identified elements are important not only as sources of inspiration in creativity and innovation processes but also to create a professional and personal environment to collaborate and achieve common objectives of the sector.

Introduction and literature review

Over the past decades, the restaurant industry has become an important sector for developed economies. As an example, prior to the coronavirus outbreak (COVID-19), more than one million restaurants were operating in the United States (US) providing jobs for 15.6 million people, 10% of the overall US workforce (National Restaurant Association, 2020). In Spain, the restaurant business generated a turnover of 98,060 million euros, which represents 4.7% of its Gross Domestic Product (GDP) and employed 1.3 million people (Hostelería de España, 2020).

These figures are prior to the COVID-19 crisis, which has had a severe impact on the global economy. The measures taken by governments to curb the pandemic and the reduction of travel, tourism and restaurant services worldwide have significantly affected the restaurant sector. As Kartari et al. (2021) points out, the pandemic has altered individual routines and their quality of life. As an example, the lockdown restrictions have significantly increased home cooking and online food delivery (Rodríguez-Pérez et al., 2020; Gavilan et al., 2021), reducing social contact among consumers (Ahmed et al., 2020) and altering restaurants business models (Gavilan et al., 2021).

Fortunately, this situation is being left behind and meeting people around a table to eat is returning to normal. In fact, eating is an experience that transcends food (Gavilan et al., 2021). It is an action that acquires a social dimension since it allows sharing moments and generates feelings and experiences in people (Hurtado Justiniano et al., 2017). In this context, the gastronomic or haute cuisine sector stands out as a sector that offers a

different gastronomy experience in order to attract increasingly discerning customers (Johnson et al., 2005). The so-called fine-dining restaurants stand out for the high quality of their food, decor and customer service, and, as Surlemont and Johnson (2005) pointed out, they play a key role in trend setting, image building and in setting standard for the industry as a whole. In fact, haute cuisine restaurants are considered pioneers in innovation and benchmarks for the rest of the sector (Presenza and Messeni Petruzzelli, 2020).

As haute cuisine is an industry that requires creativity and innovation to achieve sustainable competitive advantage (Feuls, 2018; Stierand et al., 2014; Svejenova et al., 2010), some studies have focused on the creativity and the innovation that take place in these restaurants. For example, Petruzelli and Savino (2014) investigate the impact of recombining old component to develop successful innovations and Albors-Garrigós et al. (2018) analyze the innovation process and patterns to identify the drivers of Haute Cuisine innovation.

Regarding this point, Ottenbacher and Harrington (2007a, 2007b, 2008) compared the innovation process of haute cuisine restaurants with exiting theoretical innovation process models and, as Svejenova et al. (2007) and Stierand et al. (2014) acknowledge, innovation do not occur in isolation, rather it is needed a network or social system that allows the transfer of knowledge and information and enable the transformation of creations into innovations. In fact, according to Albors-Garrigós et al. (2013), some of the most relevant sources for innovation are the restaurant personnel and the cooperation with other chefs. This fact was also pointed out by Bouty and Gomez (2013) which show that creativity in gourmet restaurants is multifaceted and includes a creative teamwork besides chef's idea work and naming.

Transfer of knowledge

Transfer of knowledge is considered fundamental for the development of societies (Di Stefano et al., 2017). Among the positive effects, some studies highlight an increase of turnover, higher profit rates and expansion of the product range (Batterink et al., 2010; De Jong & Vermeulen, 2006; van Gils & Zwart, 2004). However, when knowledge becomes a public good, many agents may reduce their incentives to share their findings with potential competitors (Anton & Yao, 1994). To solve this problem, authorities create legal tools to protect the creation and transfer of knowledge, such as patents or copyrights.

Nevertheless, these mechanisms are not available in all sectors and the haute cuisine field is a clear example. The literature indicates that, in these situations, different strategies can be applied. For example, Presenza et al. (2017) proposes the creation of barriers against imitation by competitors. According to this study, the most important barrier is the capacity of a chef to develop a systematic approach to creativity and to accumulate professional skills. Other authors concluded that the protection of knowledge is resolved through social networks and social norms (Di Stefano et al., 2017; Vargas-Sánchez & López-Guzmán, 2018). A social network is a durable network in which its members have relationships of mutual recognition (Bourdieu, 1986) and adopt informal rules – social norms – to regulate themselves (Feldman, 1984). For example, in haute cuisine it is not

allowed to make exact copies of techniques or creations and if a chef makes a derivative creation, the source is usually publicly acknowledged (Di Stefano et al., 2017).

Social networks tend to occur when there is geographical proximity. Proximity and geographic concentration create a safe environment that enhance frequency of exchange, that is, improve the transfer of information and the development of trust and reciprocity (Uzzi, 1997). Hence, it can be considered that social networks and physical proximity are also mechanisms that promote knowledge transfer (Di Stefano et al., 2017).

Collaborative networks

Literature have related social networks and geographic concentration with the concepts of clusters and "coopetition". As Porter (1998) defines, cluster is a "geographic concentration of interconnected companies, specialized suppliers, services providers, firms in related industries, training institutions and support organizations that compete but also cooperate within a local area or region". Specifically, when collaboration occurs between competitors, it is called "coopetition" and as Romero et al. (2019) pointed out it can stimulate innovation, improve the efficiency of resources use and in the restaurant industry, create a more attractive destination marketplace for clients.

One of the most important aspects of coopetition is the transfer and exchange of knowledge that may occur between companies. Normally, companies do not have all the necessary resources to carry out all their innovation process and therefore it is necessary to create collaboration networks to access the knowledge of other organizations (see for example, Phelps et al. (2012), for a review). Among the factors that boost the exchange of knowledge, some authors have highlighted face-to-face relationships and frequent communications. Following the pioneering work of Marshall (1890), which studied the impact of geographical concentration of companies, it emphasized the importance of "face-to-face relations" between managers embedded in localized systems (Chiffoleau & Touzard, 2014). Years later, Epstein (2000) found that individuals who were friends and maintain face-to-face communications were more likely to share personal and complex knowledge (Roy et al., 2017). Regarding frequent communications, relationships are usually established through repeated contacts, which favors long-term commitment, trust and cooperation between agents (Gulati & Sytch, 2008; Becerra & Gupta, 2003). In the restaurant industry for example, the communication and exchange of ideas between chefs can stimulate the innovation process (Romero et al., 2019; Stierand et al., 2014; Svejenova et al., 2007).

According to that and focusing on the haute cuisine, some authors have analyzed the interaction and collaboration of chefs. Fooladi et al. (2019) studied the interaction and the collaboration between chefs and researchers. Their findings indicate that cooperation is beneficial for both chefs and researchers and exemplify collaboration through workshops, co-authoring, cooking competitions, networking, teaching and knowledge exchange (answering questions), among others. Likewise, Garcia-Segovia et al. (2014) analyzes the collaborative network INDAGA, an initiative with the aim of facing the challenges and needs in gastronomy. The interactions generated as a result of this network have allowed

the international dissemination of knowledge and techniques between companies, cooking schools, chefs and research teams.

Baldwin (2018) shows that chefs use a wide variety of elements to get inspiration and acquire new knowledge. In particular, traveling to other countries and having relationships with other chefs to learn, what can be defined as culinary tourism. Culinary creativity can also be achieved through the imitation of competitors' creations and by analyzing customer reviews and comments (Vargas-Sánchez & López-Guzmán, 2020; Lee et al., 2019).

Regarding social network analysis, Aubke (2014) studies the professional career of 262 German Michelin-starred chefs in order to find their "hot spots of creativity". The results show that the relationships between chefs with a number of similar stars occur less frequently than between chefs with a number of different stars. In this last case is when there is a greater transmission of knowledge. One of the conclusions of that article is that although creativity is understood as an individualized process, the social environment plays a role as an external validator, accepting and adapting the creative output.

At the same time, Aldamiz-Echevarría et al. (2014) use a qualitative methodology to analyze the origins, factors and outcomes of the haute cuisine cluster in the Basque Country, a region in Spain famed for its gastronomy and one of the geographical places of the world with more Michelin stars per square kilometer. Through seven interviews with founder chefs of The Basque Culinary Center, the authors analyze the relationship between these chefs and their environment, identifying a cluster which has generated important benefits to the region, to the sector and to its members.

As mentioned, the creativity and innovation processes that are carried out in haute cuisine restaurants require the participation and collaboration between chefs and other actors, especially with other chefs, in order to promote the generation and transfer of ideas. However, further research is needed to understand these relationships as an enabler for the creation and transfer of knowledge.

Thus, to analyze the relationships, it is necessary to focus on their details and examine their elements and their implications. For this reason, a research question (RQ) is proposed:

RQ: What elements of the relationship between chefs boost knowledge transfer and what effects do they have?

Developing this question will lead to know to what extent these relationships are important, if they are positive or negative and their contribution. This analysis seeks to shed light to the geographical concentration of starred restaurants phenomenon in a determined territory.

Methodology

This study is a part of a larger project with the aim to analyze the main reasons for the geographical concentration of haute cuisine restaurants in Catalonia, the Spanish region with the highest number of Michelin-starred restaurants and one of the most internationally awarded (Bernardo et al., 2019). Specifically, in the current study, the authors focus and deeply analyze the relationships between chefs as an explanatory factor.

The need to adopt an explanatory approach led the authors to opt for qualitative techniques as they would allow greater flexibility and adaptability (Carson et al., 2001) and in addition, facilitate in-depth understanding of the phenomenon (Patton, 2002). This methodology complements previous studies (Aldamiz-Echevarría et al., 2014, Aubke, 2014).

Sample

In order to achieve the study objective, the participant's selection was based on an existing and accepted sample of restaurants, which is the Michelin-starred restaurant list for Spain and Portugal, specifically the list for Catalonia, which, as mentioned, is historically the most awarded region in Spain.

The final sample was built with 60 participants (Table 1). Initially, it was decided to use the Michelin starred restaurants list in 2013 and throughout 2013 and 2014, much of the fieldwork was carried out. Nevertheless, during the project there were some changes to the list of awarded restaurants, and it was decided to add the new awarded restaurants until 2017 and thus considering most of the population of Michelin starred chefs in Catalonia. The final sample was built up with 60 participants. In the sample, it was also considered to have an important role in the sector, one specific institution named Alicia Foundation (Alicia means Alimentation and Science in the Catalan and Spanish version). It was founded in 2003, which is a private, non-profit foundation, created with the aim of generating knowledge in all of the technological aspects of cuisine. It works to promote healthy eating by improving eating habits and tries to find culinary solutions to certain illness. In addition, they also study gastronomy from a historical point of view with the collaboration of the best chefs and leading scientists in order to add value to Catalonia and its cultural heritage.

<div align="center">**INSERT TABLE I ABOUT HERE**</div>

Data collection

Data was collected by in-depth and inductive interviews with the help of a semi-structured questionnaire (Yin, 2009). The main aspects analyzed in this questionnaire were:

-Personal aspects of the relationships

-Professional aspects of the relationships

-Length of the relationships

-Motives to initiate the relationships

In addition, relationships with two and three Michelin-starred chefs were differentiated from relationships with one or without Michelin-starred chefs in order to analyze the role of this group in the sector. In some cases, where possible, it was also asked about the impact that the relationship with the members of this group had had on the interviewee's career.

The same protocol was followed in the interviews whenever possible. A pilot test was conducted in July 2013 to verify the validity of the questions and to determine the approximate duration of the interview with the chef and the most efficient way of collecting the data. After this pilot test, the restaurants were first contacted by mail and a summary of the project and the questionnaire were sent to the interviewees. Then the authors contacted them by telephone to arrange the visit.

Fifty-seven interviews were done face-to-face, two were self-reported due to scheduling problems and one was conducted by Skype. All the face-to-face and the Skype interviews were tape-recorded except one by explicit request of the interviewee The interview began by explaining the purpose of the project and asking for permission to record it. The mean duration of the interview was sixty minutes. In two and three starred restaurants, the team of interviewers was two people, while for most restaurants with one or none Michelin star was one person. The interviews were fully transcribed and their corresponding case was written. In order to verify and validate that the information was correct, a triangulation was carried out, sending the drafted cases to all participating chefs for their review and receiving their feedback (Satolo et al., 2013). Other sources were also used to write the cases, such as restaurant websites and press news.

Data analysis and validity

After the fieldwork, the verbatim transcriptions were examined using a Computer Assisted Qualitative Analysis Software (CAQDAS), the NVivo (version 10). The decision to use the CAQDAS NVivo to aid the analysis of the field material was because it facilitates a range of complex operations which would be very difficult to perform by hand (Bourdon, 2002).

It was decided to carry out a "thematic analysis" in order to identify themes in the data through a process of coding (Cooper et al., 2017). To obtain exploratory results, the analysis was performed incrementally and iteratively (Feuls, 2018). First, in the open coding phase, the data was analyzed line-by-line (Strauss, 1987) in order to identify the emergent themes. In this first analytical step, a large number of open codes were created (158 codes). While doing this, the authors were able to describe the different types of relationships and how they started, and their implications. Then, the authors focused on the relations of the codes and organize them into 12 subcategories (see Figure 1). In the axial coding stage the relationships between the subcategories were explored and developed (Gibbs, 2002) and were grouped into 6 categories. The last stage of the iterative process was the selective coding which consisted on establishing the "core" category that represents the central phenomenon of the study (Corbin & Strauss, 1990). It should be noted that all categories were compared constantly with the interviews and the literature throughout the codification process (Glaser, 2001).

Once the themes were generated, the authors managed to classify them into elements according to the literature: a) face-to-face and b) non-face-to-face.

INSERT FIGURE 1 ABOUT HERE

The iterative approach of comparing the field material and interweaving empirical evidence with theory gave, from the authors' point of view, excellent basis to the quality of the study (Feuls, 2018). Nevertheless, more measures of validity were taken through the research process in order to guarantee the highest levels of rigor (Ryan et al., 2015). An audit trail and a teamwork approach (Morse, 1994) were maintained throughout the research project. Moreover, adequacy (Glaser & Strauss, 1967; Morse, 1994) was achieved by ensuring that sufficient data were collected on a sufficient number of chefs' point of view. Fit (Glaser & Strauss, 1967) was ensured by seeking the chefs' perspective of the phenomenon, through the method of semi-structured interviews, with sufficient detail in order to allow the merging theory to "fit" the phenomenon. Finally, the language used by the respondents was maintained in the construction of the theory in order to ensure a high degree of understandability (Glaser & Strauss, 1967).

Results

The findings of the analysis of the interview transcriptions are presented below. The presentation of the findings is based on the treatment and processing of the data made in the data analysis stage.

The different elements of the relationships that boost knowledge transfer between the chefs of the sample have been classified into professional or personal aspects. In addition, these elements have been grouped into factors that, according to the literature, enhance the exchange of knowledge and the generation of ideas: Face-to-face subdivided into events, collaborations, travels and visits and special complicities; and Non-face-to-face, subdivided into Communications and Additional aspects (see Figure 2). The effects of the relationships are presented at the end of this section.

It should be mentioned that the elements of the relationships are not exclusive and can occur at the same time, even in some cases one type of relationship leads to another. However, the authors have decided to discern them to better identify their characteristics. Furthermore, it is important to note that not all relationships include all the elements shown in Figure 2, nor does a type of relationship necessarily have to occur between the participants, there are cases that the chefs simply know each other but do not maintain a relationship.

INSERT FIGURE 2 ABOUT HERE

Regarding the section "face-to-face", the analysis of the interviews with the chefs of the sample has allowed the elements of relationships to be classified into four subgroups.

The first is *Events* and it includes the elements related to meetings at professional events where chefs share space, time and knowledge with other chefs and with agents of the sector. As some chefs pointed out, this type is the most common way for them to start their relationships and some of them have even organized events together. The main and best known are the conferences and congresses but it also includes fairs, competitions, solidarity events or award ceremonies. In these events chefs share knowledge by participating in workshops, creating menus or attending talks:

> *"At congresses you meet great chefs and maybe their concept fits a lot with yours. They show you things that may not have come to your mind before or you have never considered. They lead the way and you can follow them, taking their ideas and adapting them to your kitchen."*

Collaborations is the next subgroup in this section and it mainly includes collaborations not encompassed in the previous subgroup, as for example the co-authorship of books and the joint creation of recipes. The first is very common among this type of professionals since publishers and entities invite them to collaborate to publish cookbooks for example. However, as far as recipe creation for the restaurant is concerned, it is the only point where all the participants agree on saying that they do not collaborate. The creation of recipes is unique to each restaurant and only takes place at special events but not for their restaurants:

> *"It is very personal. Usually, when cooks create recipes together it is because there is an order, because an association asks for it and we do it gladly but is done for something that we will not do in the restaurant. We are all very suspicious of our own identity and personality, although we have a good relationship."*

The creation of recipes is what defines them as restaurants, that is why they do it internally, nevertheless, afterwards they do not have problems to share them. This is an example of the importance of knowledge transfer, sharing this knowledge enriches the development and growth of the sector. Transparency is important but also is ethics, aspects that all participants have highlighted:

> *"All chefs use techniques from other chefs, they are international and heritage of the whole sector. However, what you cannot do, if you are a chef with a certain prestige, is to present a technique as if it were yours. I mean, you have to comment that you found out this technique when you went to that restaurant, you analyzed it, it gave you an idea, you worked on it and something else came out ... this process is very beautiful!"*

The following subgroup is *Travels / Visits*. Visits as mutual clients is also a common reason why the relationship between chefs has been encouraged. In these visits they not only eat, but also share opinions and advices:

> *"I always meet them because they are clients. Maybe in my restaurant we make a different cuisine and for them is very interesting to visit."*

> *"I have something special with him, I don't know what exactly it is. His restaurant is a restaurant that I have always revered. He is a highly educated and polite person, whenever we have met, he has come to greet me, we have always respected each other a lot. Whenever I have gone to his restaurant or he has come to mine we have taken good care of each other. It is not a personal relationship but I have a special affection for him."*

The exercise of visiting other restaurants to learn about other chefs' cuisine is considered a common professional practice in haute cuisine. However, when these visits become more regular, trust facilitates a closer and personal relationship:

> *"When they come as customers, we talk about many issues. They ask for techniques, where they can get products, etc. They come as clients and ask me questions. I teach them secrets and they teach me too, we talk about suppliers, etc."*

Special complicity is the last subgroup in this section and it includes elements that go beyond the professional relationship. For example, when the personal relationship is closer, they state that they meet more frequently and have dinner:

> *"We meet often and have dinner together. When they come, we usually share a couple of meals and took advantage of them a lot. We do not only share ideas, but sometimes generational events, what is happening in the hospitality industry…It allows us to stay a bit up-to-date with everything."*

Considering that it is a large group of individuals, there are different examples of relationships. For instance, in some cases, chefs have a special complicity because they initiated the gastronomic restaurant approximately at the same time or studied together:

> *"I think the relationship is to share projects, illusions, to feel accompanied in a project that 20 years ago was not so easy. The most common thing was to open a Catalan typical restaurant and it sure worked. We were brave, we took risks and now it is evident to see it because we have done well."*

> *"We are four or five cooks of the same age that we studied together and we meet each year."*

Chefs with more years of experience have a closer and longer relationship:

> *"In my case, the profession has taken me to meet them. The profession or that curiosity as a gourmet to visit that house and not having established a personal relationship yet."*

As well as chefs who are geographically close:

"We are both from the inland of Catalonia. We work with more or less similar parameters and, although the two restaurants are absolutely different, there is a very good and close relationship."

"There is more contact with the cooks who are from the province of Girona, because for any event or act that is done, you have more contact."

Non-face-to-face

In reference to "non-face-to-face" section, it includes all those elements that do not necessarily involve face-to-face contact between the chefs. These elements can be classified into two groups, *Communications* and *Additional aspects*.

As mentioned, the chefs of the sample comment that they do not create recipes together but if any chef requires their creations, they have no problem sharing them. The fact of sharing recipes or solving doubts of cooks who want to apply techniques of other professionals are frequent exercises that all chefs of the sample do, for instance, by telephone, by mail or visiting other restaurants:

"One of the important things is the transparency of great chefs. Explain all the recipe and answer all doubts. Ferran Adrià is one of the main examples, he explained everything he did."

In many cases, frequent communications by telephone or email are linked with sporadic dinners. The relationship began for professional reasons and over the years the relationship became more personal, even friendship:

"We all know each other; we meet many times for professional issues that then end with leisure time. We do not just do professional work; if there is a time afterwards, we share it. There is a friendship that goes beyond the profession but the profession has led us to it. It seems very positive that within the same profession, we admire, respect and relate to each other."

Finally, the rest of the elements detected in the relationships that could not be classified as *Communications*, have been grouped under *Additional aspects*.

Regarding the professional aspects, it is worth mentioning that the gastronomic sector brings together a lot of agents such as clients, suppliers, promoters and others chefs, thus in some cases a relationship is established in which joint projects are started as partners in a company or other types of collaboration:

"I remember how we met. I was organizing a cooking school in Terrassa with a friend of mine who had studied in Girona and one day we went to visit his former school. We were received by one of his teachers who was also a chef and who had recently opened his restaurant. We went to lunch together and we talked about our future projects.

In addition, they exchange kitchen personnel or *staigers*, since there are cooks who want to go through different haute cuisine kitchens to improve their training and experience:

> *"Every restaurant is different. If we have a person and we want him or her to develop more, we send him or her to another restaurant to see how it works. And the same with us, we also receive people from other restaurants."*

With regard to personal aspects, some chefs mention that they read the books of specific chefs not only because they are good cookbooks but also because they are books of their friends.

Effects of the relationships

The analysis of the interviews also shows that among the participating chefs there is a relationship based on admiration, respect, recognition for the work done, the interest of all for all, the follow-up they make of their careers and the maximum collaboration among them whenever they can:

> *"I am very impressed by his work, I admire how he has done it, as he combines two very different cooks in the same place, he is capable of being very avant-garde and very traditional at the same time."*

> *"It was curious that the year that they were awarded the third star, we were also recognized and that has twinned us a little. That year was very important for us, with many interviews, we coincided in some of them and there is a good relationship."*

Hence it can be considered that the relationship between them is good and what changes is the intensity of the relationship. There are members of the sample who have more contact than others, but, as they say, there is no competence, but a mutual learning:

> *"I do not think they are rivals, on the contrary, most of them serve me as examples."*

Regarding the relationship between generations, the most experienced chefs are the reference of the younger generations, they are the examples to follow. In addition, some of the younger chefs base their relationships, initially, on the relationships of their bosses, and then develop networks through participating in events. This kind of relationship also makes possible to enforce the connection between generations and to guarantee it, since it acts as a bridge between the different professionals. The transfer of knowledge between generations is very important for the sustainability of the sector and is a practice that is maintained and encouraged:

> *"I met him because he was my teacher at the hospitality school when I was 17-18 years old. For me he was very important because he gave me a good base and taught me very well about the basis of traditional cuisine."*

> *"He gave me the focus towards the cuisine I make, the way to see the profession, the restaurant business".*

> *"At that time, I thought it was interesting and different from all the other restaurants. I have always thought that he had a unique way of cooking. I do not know why but*

when he explained the dish to you, when he explained what he was doing, you saw that it was very different."

Related to proximity, there are chefs who are part of groups and associations of chefs, such as La Cuina de l'Empordanet, La Cuina del Vallès, Euro-Toques and Slow Food Km0, among others. These associations have not only allowed them to know in depth the local products and gastronomy in their area, but also to know and establish relationships with different chefs of the collective:

"In the association we are cooks friends that we have our own restaurant and we like to eat a lot. We have dinner together and we talk for hours, we exchange opinions, ideas, etc., we complement each other."

Hence, the different ways of relating and interacting have an important impact on their career but also have implications for the sector.

One of the keys of the good relationship between them is because everyone knows what their role is and what is their contribution to the good functioning and growth of the sector. Somehow all the chefs contribute to the success of the haute cuisine sector and are important to explain this phenomenon. As some chefs pointed out, they all collaborate and help in favor of the common good:

"Among the cooks, there is a personal relationship based on proximity. At the gastronomic level, particularly in Catalonia and Girona, all have assumed their role very well, everyone has assumed, with respect and consideration, everything that has happened in their environment and has recognized the progress. There is no rivalry. Here there has always been respect for everyone, professional and personal, and it is what makes personal relationships stronger".

"We do not understand the proximity between us as competition, it is enrichment".

An example of the benefits of good relationships is the promotion that some chefs make of other restaurants in front of gastronomic experts or by visiting them in order to make their work known.

"Everyone has helped me in some way. They all come to my restaurant and promote it. They started telling the press that it was a very interesting restaurant. The chefs with three stars also come and if people see that they are here, they give me a good image.

"This is also an important reason to explain why Catalonia has the level it has, because we make others discover places with potential, because we understand that the better we are here, the better for everyone. We do not understand it as competition, but as a way to strengthen the gastronomic fabric that provides an idea of power and increase the magnetism of the high-level public and gastronomic tourism that nourishes all these restaurants. That is why we try to channel it, and when we see that

there are restaurants that have ambition, and work, we try to help as much as we can."

Regarding to what extent are the relationships important in their careers, some of the youngest chefs commented that the influence has been crucial. Even some of them declared that they would have not reached their recognition without their help.

"What has influenced me from them is mainly the care, the affection, how they take care of the product, how they work, how they value the product, how they take care of the details of the table, that is, the esteem and passion for this trade."

The role of great chefs and their contribution to the evolution of the sector are also important elements to understand the phenomenon. Ferran Adrià, Santi Santamaria, Carme Ruscalleda or Joan Roca are some examples of chefs that have contributed positively to the sector during their careers. On the one hand, they had opened the Catalan cuisine to the world using different products and techniques, and on the other hand they had acted as knowledge transfer catalyzers through their openness, transparency and collaboration with all the chefs.

"I consult Joan [Roca]'s books a lot in order to know how he does certain things, what cooking time he uses, etc. In the same way, I have gone to Carme [Ruscalleda]'s restaurant and I have paid attention to the combination of product that she uses to get the taste. You write down these things because you always get ideas from others, always. For example, when I visit El Celler de Can Roca, I always try to enjoy but I also try to see what they are doing and how they are doing it."

As an example, El Bulli has been more than a restaurant, it has acted as a research and development center where many cooks attended workshops:

"It can be said that all the cooks who were able to go, we met at El Bulli on Sunday nights and Mondays, and we shared table and experiences."

Discussion

After identifying and classifying the different elements of the relationships between chefs and their effects, the contributions to the creation and transfer of knowledge are discussed below.

According to the results of this study, chefs are relatively reserved about their recipes, that means, they have no problem sharing their culinary creations and answering questions and doubts to their colleagues but they prefer to carry out the process of creating a recipe internally, for their restaurant. In fact, culinary creations cannot be patented and one way to register them is to present them in front of an audience (Vargas-Sánchez & López-Guzmán, 2018).

Nevertheless, this does not contradict what is stated in the literature, which means that culinary creativity and innovation processes do not take place in isolation (Stierand et al., 2014; Svejenova et al., 2007) and also needs an external validator to accept and adopt the creative outputs (Aubke, 2014). As Ottenbacher and Harrington (2007a, 2007b, 2008) and Feuls (2018) pointed out, the community plays an active role in the development and spread of innovations not only at congresses and at the professional meetings but also in the visits that the chefs make to other restaurants to see what is cooking. The concentration of Michelin-starred restaurants in a territory such as Catalonia provides a safe environment where chefs can interact more and better, establishing networks of trust that facilitate the exchange of information and knowledge (Di Stefano et al., 2017).

As pointed in the literature, Face-to-face relationships (Marshall, 1890; Chiffoleau & Touzard, 2014) and frequent communications and repeated contacts (Gulati & Sytch, 2008; Becerra & Gupta, 2003) enhance long-term commitment, trust and cooperation. It has been proven that also apply in the haute cuisine sector. In the specific case of Catalan cuisine, repeated encounters for many years have led some chefs to establish close relationships, even friendships. The elements detected in the relationships indicate that knowledge fluctuates between members of the sector through meetings, personnel exchanges and consultations, and this in turn allows knowledge to adapt and develop new creations.

As Aldamiz-Echevarría et al. (2014) all the networks have been analyzed but, in this case, it has focused on the chefs' relationships, instead of analyzing all collaborative networks (see Figure 3). The existing relationships between them in a network of collaborations with other agents, favor the development of ideas by itself and also the transfer of knowledge between individuals, which in turn can also enhance the generation of ideas. This fact is part of the sources of inspiration for chefs and restaurants to carry out culinary creativity and innovation processes.

INSERT FIGURE 3 ABOUT HERE

Conclusions

This research aimed to analyze the relationships between chefs as contributors in the creation and transfer of knowledge in the haute cuisine sector. In order to achieve this objective 60 interviews were carried out over three years providing a wealth of detailed information.

Based on the data obtained from the interviews, the authors manage to characterize the elements and identify the effects of the relationships among the population of haute cuisine chefs in Catalonia. The findings indicate that the elements that favor the creation and exchange of knowledge in this sector can be classified into professional and personal aspects and grouped into: Face-to-face or Non-face-to-face elements. All the identified

elements collaborate to a greater of lesser extent in the generation and exchange of ideas. Hence, it can be stated that the relationships between chefs enable the creation and transfer of knowledge.

This study contributes to the literature about haute cuisine chefs and restaurants, benchmarks for the entire sector. As previously commented, the analysis of clusters, networks and other organized ways of collaborating as enabler for the creation and transfer of knowledge in the haute cuisine sector has not yet been deeply analyzed. Hence, to the best of the author's knowledge, this is one of the few studies that analyses the creation of an environment of professional and personals relationships as an enabler for collaboration and achievement of common objectives in this sector.

In addition, this study has practical implications. These findings would justify the development of policies that promote collaboration within this sector and motivate chefs to continue collaborating and maintaining their relationships. Furthermore, if these collaborations include chefs from other countries, it will allow the establishment of international collaboration networks while globalizing the exchange of knowledge and incorporating techniques from other cultures. In this regard, this paper encourages governments to support the creation and development of cooking schools, staff training, and the organization of professional events to boost the creation and transfer of knowledge.

To summarize, relationships can become a fundamental element to maintain the international recognition of Catalan gastronomy, which besides being beneficial for restaurants and for agents of the sector, is also an element that boost tourism and young talents attraction, both necessary to reverse the situation of COVID-19.

This paper is not without limitations. The study is based on a sample from one geographical location, Catalonia, with its specific characteristics. Also, it focuses in only one segment of the industry, the haute cuisine sector. From all of this, the expansion of the research to other professionals of the sector or other locations is a line of work to explore. In addition, it is necessary to analyze how relationships and networks have been affected by the pandemic. Chefs have had to find other ways to share knowledge and develop their culinary processes because of the difficulty of meeting face-to-face derived from lockdowns and local restrictions.

References

Ahmed, M.Z., Ahmed, O., Aibao, Z., Hanbin, S., Siyu, L., & Ahmad, A. (2020). Epidemic of COVID-19 in China and associated psychological problems. *Asian Journal of Psychiatry*, *51*. Advance online publication. doi: https://doi.org/10.1016/j.ajp.2020.102092

Albors-Garrigos, J., Barreto, V., García-Segovia, P., Martínez-Monzó, J., & Hervás-Oliver, J. L. (2013). Creativity and innovation patterns of haute cuisine chefs. *Journal of Culinary Science & Technology*, *11* (1), 19-35. doi: https://doi.org/10.1080/15428052.2012.728978

Albors-Garrigós, J., Martinez Monzo, J., & Garcia-Segovia, P. (2018). Knowledge dynamics as drivers of innovation in Haute Cuisine and culinary services. *Industry and Innovation*, *25* (1), 84-111. doi: https://doi.org/10.1080/13662716.2016.1268950

Aldamiz Echevarría, C., Aguirre, M.S., & Aparicio, M.G. (2014). Orígenes, elementos determinantes y resultados de un exitoso proceso de colaboración entre competidores y otros agentes: el cluster de la Alta Cocina Vasca. *Cuadernos de Gestion*, *14* (2), 51-72. doi: https://doi.org/10.5295/cdg.120385ca

Anton, J. J., & Yao, D. A. (1994). Expropriation and inventions: appropriable rents in the absence of property rights. *American Economic Review*, *84* (1), 190-209.

Aubke, F. (2014). Creative hot spots: a network analysis of german michelin-starred chefs. *Creativity and Innovation Management*, *23* (1), 3-14. doi: https://doi.org/10.1111/caim.12044

Baldwin, W. (2018). Chef's sabbatical: an analysis of chef's gastronomic research through culinary tourism. *International Journal of Gastronomy and Food Science*, *13*, 65-72. doi: https://doi.org/10.1016/j.ijgfs.2018.05.006

Batterink, M. H., Wubben, E. F. M., Klerkx, L., & Omta, S. W. F. (2010). Orchestrating innovation networks: the case of innovation brokers in the agri-food sector. *Entrepreneurship and Regional Development*, *22* (1), 47-76. doi: https://doi.org/10.1080/08985620903220512

Becerra, M., & Gupta, A. K. (2003). Perceived trustworthiness within the organization: the moderating impact of communication frequency on trustor and trustee effects. *Organization Science*, *14* (1), 2-44. doi: https://doi.org/10.1287/orsc.14.1.32.12815

Bernardo, M., Escalante, R., & Arbussà, A. (2019). *El éxito internacional de la cocina catalana. Más allá de la creatividad y la innovación* [The international success of Catalan cuisine. Beyond creativity and innovation]. Barcelona: Edicions de la Universitat de Barcelona.

Bourdieu, P. (1986). The forms of capital. In J.G. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241-258). New York: Greenwood.

Bourdon, S. (2002). The integration of qualitative data analysis software in research strategies: resistance and possibilities. *Forum Qualitative Sozialforschung*, *3* (2), doi: https://doi.org/10.17169/fqs-3.2.850

Bouty, I., & Gomez, M. L. (2013). Creativity in haute cuisine: strategic knowledge and practice in gourmet kitchens. *Journal of Culinary Science & Technology*, *11* (1), 80-95.

Carson, D., Gilmore, A., Perry, C., & Gronhaug, K. (2001). *Qualitative Marketing Research*. London: SAGE.

Chiffoleau, Y., & Touzard, J. M. (2014). Understanding local agri-food systems through advice network analysis. *Agriculture and Human Values*, *31* (1),19-32. doi: https://doi.org/10.1007/s10460-013-9446-6

Cooper, J., Giousmpasoglou, C., & Marinakou, E. (2017). Occupational identity and culture: the case of Michelin-starred chefs. *International Journal of Contemporary*

Hospitality Management, *29* (5), 1362-1379. doi: https://doi.org/10.1108/IJCHM-02-2016-0071

Corbin, J., & Strauss, A. (1990). Grounded Theory Research: Procedures; Canons and Evaluative Criteria. *Zeitschrift Fr Soziologie*, *19* (6), 418–427.

De Jong, P. J., & Vermeulen, P. A. M. (2006). Determinants of product innovation in small firms: a comparison across industries. *International Small Business* Journal, *24* (6), 587-609. doi: https://doi.org/10.1177/0266242606069268

Di Stefano, G., King, A.A., & Verona, G. (2017). Too many cooks spoil the broth? Geographic concentration, social norms, and Knowledge transfer. *Geography, Location, and Strategy*, *36*, 267-308. doi: https://doi.org/10.1108/S0742-332220170000036008

Epstein, L. D. (2000). *Sharing knowledge in organizations: how people use media to communicate* (Unpublished doctoral dissertation). University of California, California.

Feldman, D. (1984). The development and enforcement of group norms. *Academy of Management Review*, *9* (1), 47-53. doi: https://doi.org/10.2307/258231

Feuls, M. (2018). Understanding culinary innovation as relational: insights from Tarde's relational sociology. *Creativity and Innovation Management*, *27* (2), 161–168. doi: https://doi.org/10.1111/caim.12257

Fooladi, E., Hopia, A., Lasa, D., & Arboleya, J.C. (2019). Chefs and researchers: culinary practitioners' views on interaction between gastronomy and sciences. *International Journal of Gastronomy and Food Science*, *15*, 6-14. doi: https://doi.org/10.1016/j.ijgfs.2018.11.003

García-Segovia, P., Garrido, M. D., Vercet, A., Arboleya, J. C., Fiszman, S., Martínez-Monzo, J., Laguarda, S., Palacios, V. & Ruiz, J. (2014). Molecular Gastronomy in Spain. *Journal of Culinary Science & Technology*, *12* (4), 279-293. doi: https://doi.org/10.1080/15428052.2014.914813

Gavilan, D., Balderas-Cejudo, A., Fernández-Lores, S., & Martinez-Navarro, G. (2021). Innovation in online food delivery: learnings from COVID-19. *International Journal of Gastronomy and Food Science*, *24*. Advance online publication. doi: https://doi.org/10.1016/j.ijgfs.2021.100420

Gibbs, G. R. (2002). *Qualitative Data Analysis. Explorations with Nvivo*. Buckingham: Open University Press.

Glaser, B. G. (2001). *The Grounded Theory Perspective: Conceptualization Contrasted with Descriptions*. Mill Valley, CA: Sociology Press.

Glaser, B. G., & Strauss, A.L. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago: Aldine de Gruyter.

Gulati, R., & Sytch, M. (2008). Does familiarity breed trust? Revisiting the antecedents of trust. *Managerial and Decision Economics*, *29*, 165-190. doi: https://doi.org/10.1002/mde.1396

Hostelería de España. (2020, December). Anuario de la Hostelería de España 2020. Hostelería de España. Retrieved from: https://apehl.org/media/editor/2020/12/15/anuario-2020.pdf

Hurtado Justiniano, M.N., Jaría-Chacón, N., & Valls-Pasola, J. (2017). Innovation and experimental services: the role of multidisciplinary arts in creative gastronomy towards a research agenda. *Dirección y Organización*, *61*, 32-47.

Johnson, C., Surlemont, B., Nicod, P., & Revaz, F. (2005). Behind the stars: A concise typology of Michelin restaurants in Europe. *Cornell Hotel and Restaurant Administration Quarterly*, *46* (2), 170-187.doi: https://doi.org/10.1177/0010880405275115

Kartari, A., Ozen, A.E., Correia, A., Wen, J., & Kozak, M. (2021). Impacts of COVID-19 on changing patterns of household food consumption: an intercultural study of three countries. *International Journal of Gastronomy and Food Science*, *26*. Advance online publication. doi: https://doi.org/10.1016/j.ijgfs.2021.100420

Lee, C., Hallak, R., & Sardeshmukh, S. R. (2019). Creativity and innovation in the restaurant sector: supply-side processes and barriers to implementation. *Tourism Management Perspectives, 31*, 54-62. doi: https://doi.org/10.1016/j.tmp.2019.03.011

Marshall, A. (1890). *Principles of economics*. London: McMillan.

Morse, J. M. (1994). Emerging from the data: the cognitive process of analysis in qualitative enquiry. In J. Morse(Ed.), *Critical Issues in Qualitative Research Methods* (pp. 23-43). Thousand Oaks: SAGE.

National Restaurant Association. (2020). 2020 State of the Restaurant Industry Report. Retrieved from: https://restaurant.org/downloads/pdfs/research/soi/2020-state-of-the-industry-factbook.pdf.

Ottenbacher, M., & Harrington, R. J. (2007a). The innovation development process of Michelin-starred chefs. *International Journal of Contemporary Hospitality* Management, *19* (6), 444-460. doi: https://doi.org/10.1108/09596110710775110

Ottenbacher, M., & Harrington, R. J. (2007b). The Culinary Innovation Process", *Journal of Culinary Science & Technology*, *5* (4), 9-35. doi: https://doi.org/10.1300/J385v05n04

Ottenbacher, M., & Harrington, R. J. (2008). U.S. and German culinary innovation processes: differences in involvement and other factors. *Journal of Foodservice Business Research*, *11* (4), 412-438. doi: https://doi.org/10.1080/1537802080251981

Patton, M. Q. (2002). *Qualitative Research & Evaluation Methods*. Thousand Oaks: SAGE.

Petruzzelli, A. M., & Savino, T. (2014). Search, recombination, and innovation: lessons from haute cuisine. *Long Range Planning*, *47* (4), 224-238.

Phelps, C., Heidl, R., & Wadhwa, A. (2012). Knowledge, Networks, and Knowledge Networks: a Review and Research Agenda. *Journal of Management*, *38* (4), 1115-1166. doi: https://doi.org/10.1177/0149206311432640

Porter, M. E. (1998). Ser competitivo [On Competition]. Barcelona: Deusto.

Presenza, A., Abbate, T., Casali, G. L., & Perano, M. (2017). An innovative approach to the intellectual property in haute cuisine. *International Journal of Hospitality Management*, *65*, 81-88. doi: https://doi.org/10.1016/j.ijhm.2017.06.009

Presenza, A., & Messeni Petruzzelli, A. (2020). Haute cuisine and country of origin. *British Food Journal*, *122* (1), 136-150. doi: https://doi.org/10.1108/BFJ-06-2019-0427

Rodríguez-Pérez, C., Molina-Montes, E., Verardo, V., Artacho, R., García-Villanova, B., Guerra-Hernández, E. J., & Ruíz-López, M. D. (2020). Changes in Dietary Behaviours during the COVID-19 Outbreak Confinement in the Spanish COVIDiet Study. *Nutrients*, *12*. Advance online publication. doi: https://doi.org/10.3390/nu12061730.

Romero, I., Gómez, I. P., & Zabala-Iturriagagoitia, J. M. (2019).'Cookpetition': do restaurants coopete to innovate?. *Tourism Economics*, *25* (6), 904-922. doi: https://doi.org/10.1177/1354816618811551

Roy, H., Hall, C. M., W., & Ballantine, P. (2017). Trust in local food networks: the role of trust among tourism stakeholders and their impacts in purchasing decisions. *Journal of Destination Marketing and Management*, *6* (4), 309-317. doi: https://doi.org/10.1016/j.jdmm.2017.07.002

Ryan, G., del Mar Pàmies, M., & Valverde, M. (2015). WWW = wait, wait, wait: Emotional reactions to waiting on the internet. *Journal of Electronic Commerce Research*, *16* (4), pp. 261–275.

Satolo, E. G., Calarge, F. A., & Augusto Cauchick Miguel, P. (2013). Experience with an integrated management system in a sugar and ethanol manufacturing unit: possibilities and Limitations. *Management of Environmental Quality: An International Journal*, *24* (6), 710-725. doi: https://doi.org/10.1108/MEQ-10-2012-0068

Stierand, M., Dörfler, V., & Macbryde, J. (2014). Creativity and innovation in haute cuisine: Towards a systemic model. *Creativity and Innovation Management*, *23* (1), 15-28. doi: https://doi.org/10.1111/caim.12050

Strauss, A.L. (1987). *Qualitative Analysis for Social Scientists*. New York: Cambridge University Press.

Surlemont, B., & Johnson, C. (2005). The role of guides in artistic industries: the special case of the "star system" in the haute-cuisine sector. *Managing Service Quality*, *15* (6), 577-590. doi: https://doi.org/10.1108/09604520510634032

Svejenova, S., Mazza, C., & Planellas, M. (2007). Cooking up change in haute cuisine: Ferran Adria as an institutional entrepreneur. *Journal of Organizational Behavior*, *28* (5), 539-561. doi: https://doi.org/10.1002/job.461

Svejenova, S., Planellas, M., & Vives, L. (2010). An individual business model in the making: a chef's quest for creative freedom. *Long Range Planning*, *43*, 408-430. doi: https://doi.org/10.1016/j.lrp.2010.02.002

Uzzi, B. (1997). Social structure and competition in interfirm networks: the paradox of embeddedness. *Administrative Science Quarterly*, 42 (1), 35-67. doi: https://doi.org/10.2307/2393808

van Gils, A., & Zwart, P. (2004). Knowledge acquisition and learning in Dutch and Belgian SMEs: the role of strategic alliances. *European Management Journal*, *22* (6), 685-692. doi: https://doi.org/10.1016/j.emj.2004.09.031

Vargas-Sánchez, A. & López-Guzmán, T. (2018). Protection of culinary knowledge generation in Michelin-Starred Restaurants. The Spanish case. *International Journal of Gastronomy and Food Science*, *14*, 27-34. doi: https://doi.org/10.1016/j.ijgfs.2018.09.001

Vargas-Sánchez, A., & López-Guzmán, T. (2020). Creative Process and Culinary Experiences in Michelin-starred Restaurants. *Journal of Culinary Science & Technology*. Advance online publication. doi: https://doi.org/10.1080/15428052.2020.1808137
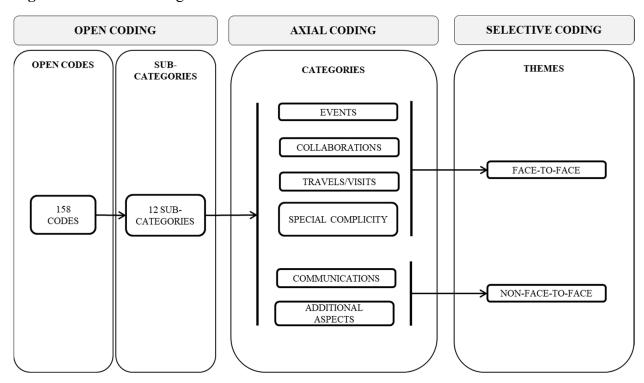
Yin, R.K. (2009). *Case Study Research. Design and Methods*. Thousand Oaks: SAGE.

Table 1: Sample

Periods of time	1. First period: July 2013 - December 2014		
	2. Second period: February - April 2017		
Interviewees	5 chefs of restaurants with 2 and 3 Michelin stars		
	51 chefs of restaurants with 1 Michelin star		
	3 chefs with no star in 2013 but whose restaurants had		
	Director of the Alícia Foundation		
Interviewees information	Type	Number	%
Gender	Male	57	95%
	Female	3	5%
Age	20-30 years	3	5%
	31-40 years	24	40%
	41-50 years	18	30%
	>51 years	15	25%
Experience in the restaurant industry	10-20 years	21	35%
	21-30 years	24	40%
	31-40 years	9	15%
	>40 years	6	10%
Nationality	Spanish (Catalan)	51	85%
	Spanish (No Catalan)	4	7%
	French	2	3%
	Italian	1	2%
	Argentinian	1	2%
	Japanese	1	2%

Source: Own elaboration

Figure 1: Codes and categories

Source: Own elaboration

Figure 2: Elements of the relationships that boost knowledge transfer

Source: Own elaboration

Figure 3: The role of collaborative relationships between chefs

Source: Own elaboration