

# Knowledge Transfer in the Craft Beer Business Networks in Portugal

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**Abstract:** It is intended to understand how knowledge transfer is processed in the craft beer business network in Portugal, to assess the importance of the knowledge thus acquired and how it impacts the processes. Thus, since knowledge is an organizational resource that provides a sustainable competitive advantage in a competitive environment and in a dynamic economy, the transfer of knowledge between organizations is fundamental for their survival and growth. Therefore, and given that, in the craft beer sector, knowledge, experience, and personal skills of the entrepreneur are the main reasons for the existence of networks and collaborations, the transfer of knowledge in the craft beer business has attracted the interest of academics. Thus, the main objective of this study was to understand the importance of knowledge, how its transfer occurs between the various elements of the craft beer business network and its dynamics. It was concluded, through a qualitative case study, that the importance of this knowledge is crucial and the impact very significant in the processes, identifying a model that explains the process. This study also allowed to increase knowledge about the transfer of knowledge among the members of this network, still little studied, and to draw attention to the need to carry out more studies on this topic.

**Keywords:** Knowledge management, Knowledge transfer, Microbreweries, Networks, Craft beer

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## 1. Introduction

Knowledge is a valuable resource for organizations, providing a competitive advantage (Khodakarami & Chan, 2014; Simões et al., 2014). Knowledge transfer between organizations is crucial for survival and growth (Muscio et al., 2013), but it can be laborious and time-consuming (Szulanski, 2000). There are two types of knowledge: explicit (easily transferable) and tacit (personal and subjective) (Polanyi, 1966). Networks enable information and knowledge exchange (Nonaka & Takeuchi, 1995; Powell, 1998). Practice improves task performance, while verbal instructions enhance question-answering ability (Berry & Broadbent, 1984, 1987). In the craft beer sector, networks and collaborations emerge based on knowledge, experience, and personal skills (Cardoni et al., 2018), fostering a sense of belonging (Koch & Sauerbronn, 2018). This study aims to explore knowledge's importance, transfer within the craft beer network, and its impact on processes. Research questions focus on the significance of network-acquired knowledge, transfer mechanisms, and its effect on processes, trying to answer the following research questions: RQ1: How important is the knowledge obtained through the network? RQ2: How is knowledge transfer carried out on the network? RQ3: What impact does the knowledge acquired through the network have on processes?

## 2. Literature Review

### 2.1 The Business Networks

Business networks are formal or informal agreements between people and/or independent companies. They are established to increase the probability of success of the actors, being important to help small companies to survive and prosper, being part of the organization's strategy (Franco, 2011), promoting regional economic development (Besser & Miller, 2011). They provide ways of accessing knowledge, as well as resources, markets, or technologies (Inkpen & Tsang, 2005).

Globalization and the consequent increase in competition with large companies have caused constraints to smaller companies due to lack of resources, making it necessary for them to innovate and adopt new strategies

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that allow them to remain in the market (Graça, Simões & Loureiro, 2019a; Graça, Simões & Loureiro, 2019b; Franco & Hasse, 2020). In this context and, in case they are recent, the lack of experience or liquidity (McGrath & O'Toole, 2013) can be a problem that can be solved through cooperation, allowing to obtain valuable and essential resources to achieve a competitive advantage (Das & Teng, 2000), such as know-how or problem-solving ability.

A recent type of network – the community of practice (CoP) – consists of a group of people informally united by shared experiences, a passion, a common language, tools, or stories (Weller, 2017), which fosters knowledge sharing and learning. In CoP, sharing occurs in a creative and free-flowing way, promoting new approaches to problems (Wenger & Snyder, 2000), whose main roles are: the facilitation of social interaction, the creation and sharing of knowledge and the construction of identity (Pacheco, Fernandes, Ferreira & Simões, 2021).

## **2.2 The Transfer of Knowledge**

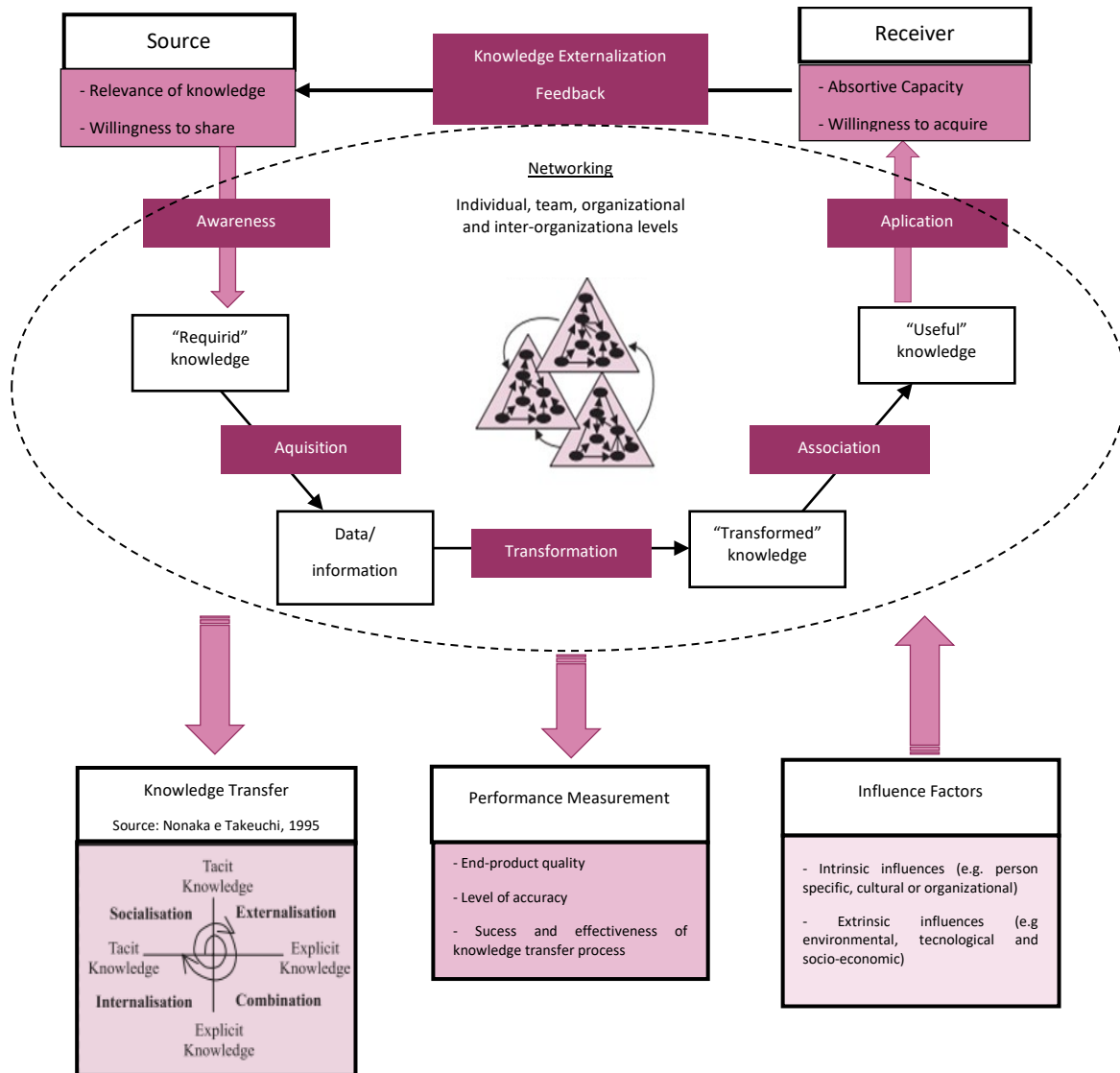
Knowledge plays a crucial role in organizations by creating value and enhancing competitiveness (Khodakarami & Chan, 2014), so understanding how knowledge is created and transferred and how networks facilitate the access of knowledge is essential in this context, because access is insufficient for effective knowledge transfer (Wang & Noe, 2010). CoP foster knowledge transfer through the bonds formed between members (Zhao & Detlor, 2021). Participation in virtual CoP aims to acquire work-related knowledge, and the strength of the bonds positively influences the quantity and perceived usefulness of shared knowledge, so knowledge sharing requires willingness to share. Exploring the factors driving this desire can help to understand and encourage the knowledge transfer process (Chiu et al., 2006). The social capital of a network, encompassing its structural, cognitive, and relational dimensions, plays a vital role in creating and transferring knowledge (Inkpen & Tsang, 2005). The structural dimension relates to the pattern of relationships and social interactions, while the cognitive dimension involves shared meaning, vision, and language. The relational dimension involves the bonds formed within the network and their outcomes, such as trust and reciprocity, critical for effective knowledge transfer (Chui et al., 2006).

Opportunity has been identified as the most influential factor in knowledge transfer, particularly related to the transfer environment (Kang & Kim, 2017). Knowledge transfer involves the flow of knowledge between individuals or companies, influenced by characteristics of the knowledge provider and receiver, the nature of the knowledge, and the dynamics between the involved parties (Lane et al., 2001). Interaction, trust, and strong ties between individuals are crucial for knowledge transfer (De Luca & Cano Rubio, 2018).

Knowledge transfer is often seen as a learning process that improves performance (Lane et al., 2001). Organizations that effectively transfer knowledge internally tend to be more productive (Almeida & Kogut, 1999). Stimulating knowledge transfer involves reducing barriers and enhancing drivers such as intention to learn, trust, sharing of values, ethical and moral systems, willingness to contribute knowledge, and knowledge reuse (Watson & Hewett, 2006).

Knowledge creation is a significant driver of change and improvement, with tacit knowledge being particularly valuable due to its difficulty to replicate or purchase (Inkpen & Tsang, 2005). Human interactions and active communication play a crucial role in knowledge creation and transfer (Argote & Ingram, 2000). Learning can be explicit or implicit, and motivation, willingness, and ability to share and develop knowledge together are essential for effective knowledge transfer (Galati & Bigliardi, 2019).

Liyanage et al. (2009) proposed a knowledge transfer model that integrates four prerequisites: awareness of the need for knowledge, source's willingness to share, receiver's willingness to acquire, and receiver's ability to absorb the knowledge. This model emphasizes the stages of knowledge transfer, including knowledge association, where knowledge is converted and made useful to the receiver. Successful knowledge transfer adds value to all parties involved, improving collaboration and relationships (Liyanage et al., 2009) (Figure 1).



Source: Adapted from Liyanage et al. (2009)

Figure 1: Knowledge Transfer model

Knowledge transfer occurs in stages: awareness of valuable knowledge, acquisition, conversion for usefulness, utilization by the receiver, and value creation (Loureiro et al., 2021). Collaboration and effective relationships are key for knowledge transfer success (Liyanage et al., 2009). The SECI model integrates tacit and explicit knowledge conversions (Nonaka & Takeuchi, 1995). Success factors include intrinsic (people, culture, organizations) and extrinsic (environment, technology, socio-economic) aspects (Liyanage et al., 2009). Knowledge contributes to organizational value by improving decision-making, problem-solving, and performance (Silva et al., 2014).

### 2.3 Networks in the Craft Beer Business

Craft beer brewing starts as a hobby and a starting point for market entry (Gil, 2021; Cunningham & Barclay, 2020). Microbreweries are characterized by small-scale production, use of traditional ingredients, and openness to innovation (Reid et al., 2014). Networks among craft brewers are formed to obtain knowledge for quality improvement, recipe development, and awareness of global practices (Cardoni et al., 2018). Knowledge acquisition is essential for innovation and continuous improvement (Maurseth & Svensson, 2020). Partnerships and collaborations, such as beer academies and online courses, facilitate knowledge sharing in the industry (Duarte Alonso et al., 2018). Craft brewers have strong connections with customers and local communities, fostering a culture of quality, creativity, and authenticity (Reid & Gatrell, 2017). The craft beer sector fosters a network that promotes knowledge exchange, co-creation, and shared behavior patterns (Stoilova, 2020).

Brewers and consumers value novelty and innovative beer styles, creating a lifestyle and culture (Miles, 2018). This network functions as a CoP where knowledge transfer occurs, providing opportunities for knowledge acquisition within the network.

### **3. Methods**

Craft beer production often starts at home, sometimes evolving into commercial production as brewers open microbreweries (Drakopoulou Dodd et al., 2018). The European beer sector is responsible for around 2.3 million jobs which correspond to 1% of the number of jobs in Europe.

In 2018, Portugal had one hundred and twenty breweries, of which one hundred and fifteen were micro-enterprises, while in 2011 there was only one, Sovina, acquired, in the meantime, by the Esporão Group (Barra & Chiavegatto, 2019), and it is interesting to note that in Scotland also has around 120 breweries, mostly small businesses with fewer than 10 people (Cunningham et al., 2020). This sector is characterized by its independence from the market of large brewers (Carroll & Swaminathan, 2000) and by the production of small quantities. Statistical data from the Brewers of Portugal “reveal, in 2020, an average drop in beer consumption of 34% in the HORECA channel, compared to the same period in 2019, and in the case of artisanal microbrewers the average drop was more than 60%” (Brewers from Portugal).

The objective of this study is to evaluate the importance of the knowledge obtained through the network of craft brewers, how it is shared and what is the dynamics of this sharing, having resorted to the case study methodology, whose unit of analysis is the transfer of knowledge in the network. The cases were chosen for convenience, as the authors knew a microbrewer who gave them access to a set of other members of the network, allowing them to obtain the information essential for the study.

The use of multiple data sources allowed their triangulation to increase the internal validity of the study, allowing to verify if what is observed and reported remains unchanged in different circumstances (Barañano, 2004). In this case, triangulation was carried out using not only primary data, but also consulting websites and social networks.

Data were collected through semi-structured interviews carried out in April, 2021. In May, a bar was visited to observe *in loco* the dynamics of the relationships between the elements of the network, but this observation was limited due to the reduced number of people who could enter the establishment due to the COVID-19 pandemic.

The interview guide consists of several questions addressed to producers (P1, P2, P3), consumers (C1, C2, C3, C4), sellers (V1, V2) and a promoter (D1). It started by characterizing the interviewees and their companies (when they existed). Afterwards, it was intended to understand why they belong to the network, how it works, what benefits they obtain, what is the importance of knowledge for the production or consumption of beer, and/or for the success of the business, what is their assiduity in the network, if participate in events, such as craft beer fairs, workshops, contests, and the level of formality in the network. The information obtained was complemented with information collected from other sources, such as online newspapers (Larissa, 2017; Gil, 2021), the Cervejeiros de Portugal website and comments on social networks (namely in the Facebook group in the “Cervejas do Mundo” group). The contents of the answers and the documentation were analysed, noting that the model proposed by Liyanage et al. (2009) explains the transfer of knowledge in this network.

## **4. Results**

### **4.1 Characterization of the interviewees**

Respondents have different profiles, they are mostly men, aged between thirty and fifty years. They all have 12th grade or higher education. Only the sellers and the promoter have a formalized company. Producers are still homebrewers, brewing at home. All of them assiduously attend events related to craft beer and specialized bars. Two of the brewers have already participated twice in contests, having won a first prize in the VIII National Craft Beer Contest, in 2020 (Revista Paixão pela Cerveja, 2020), which is why they will formalize, in the short term, the company to start marketing, since as usual, these winning beers will now be passed on to renowned breweries. Thus, and during the next year, consumers will be able to try these beers, which will be prepared by the winners in collaboration with the brands Chica (Belgian IPA), Piratas Cervejeiros/Caráter (Experimental Beer), Trindade/Hoppy House (Lager) and HopSin (Ale) (Revista Paixão pela Cerveja, 2020). But even though they didn't win prizes, they mentioned the importance of feedback from the members of the jury and that it helps them a lot to improve and learn more. P1 mentioned that craft beer brewing can be done by anyone, starting as

a hobby and later becoming a business, if that makes sense (Cunningham & Barclay, 2020), referring to the existence “kits” of initiation to homemade artisanal production, for those who do not yet have enough knowledge. Although there are many artisanal brewers who produce at home, there are already many high-quality brands on the market with relatively significant production, with a presence in several stores, specialized or not, such as supermarkets.

## 4.2 The transfer of knowledge on the network

### 4.2.1 The importance of knowledge gained through the network

One of the reasons stated for belonging to the network was to obtain information and knowledge (Zhao & Detlor, 2021), as shown in this Facebook post: *“Urgent! Guys, I'm brewing a pilsner. I have a pH of 5.6. Calcium methosulfate? Thanks!”*. Or, as P3 says *“if you need a specific yeast and don't know where to find it, I'll ask the question and they'll answer right away”*. They find knowledge and information *“that, eventually, we could find elsewhere, but with much more difficulty and greater financial and time costs”* says P2. They share their experiences and thank for help: *“Hello everyone, allow me to introduce my first beer, an Irish Stout. Although he had never tried to make a beer, he was confident. Today I present the result. It won't win contests, but I'm proud. Much. Coopers Irish Stpout; 4.7% ABV, made using brown sugar and placed in the barrel. Thank you all for the tips and patience...”* The knowledge allows for essential learning to improve processes and the final product and adapt recipes to consumer trends. *“The type of beer consumed depends on the season of the year”* says P1. In each season, the tastes and demands of consumers change and the network makes it possible to obtain this information and the technical knowledge necessary for production. *“There is a very intense sharing of information and knowledge and I take great pleasure in helping those who want to enter this world of craft beer and enhance the improvement of brewers who are at the beginning of the process”*, says D1 (Liyanage et al., 2009). The trust they have in each other is also referred to as decisive (Franco, 2011), helping each other, creating conditions for the exchange of knowledge and experiences. They go to each other's facilities to experiment, new recipes, new yeasts, new ingredients. The presence in the network is assiduous and intense, with frequent contacts, being the participation in the various events, almost a necessity, to be able to meet in person. P1 and P2 refer that the creation of the company is due to the existence of this network, a support base without which they would not dare to try to open a business, either due to lack of access to knowledge or lack of knowledge about how to place the product on the market, or the perception of too high a risk. Bar owners helped to build the network, considering it a very important means of obtaining information and knowledge, although with a different nature from what happens with brewers. They need to know customers and suppliers to adapt their operation to the product and consumer preferences. V1 refers to *“the need to educate the customer, to give him knowledge about beer so that he knows how to consume and choose the most appropriate beers”*. Also *“knowledge about the competition is important for the business”* which also belongs to the network as referred to by V2. As for consumers, they belong to the network to increase knowledge and obtain information, such as places to buy and sell, for example. C3 mentions *“when I go on vacation and I feel like drinking a craft beer, through the group I immediately know where I can do it”* and C4 reinforces that *“when I want to know where I can buy brand X, if I ask in the group, they answer me right away”*. This post proves these statements: *“Can you recommend a place to drink craft beer in Tavira?”* Almost immediate response: *“NanoBrew Fuzeta”*. They are also able to *“get more knowledge about beer, and the network makes it possible to find who supplies it”*, says C1. For C2 it is relevant to be able to talk about craft beer, with those who are also interested.

### 4.2.2 Knowledge transfer

Information and knowledge are obtained through face-to-face conversations, in bars or at events and through groups on social networks (Zhao & Detlor, 2021), through direct questions, such as *“I have a problem. What is the best solution?”*, or trying to find out where to find this or that beer, a certain raw material, a specific equipment, or a bar in a certain region or that sells a certain brand. Consumer comments are a way of conveying their opinion to producers and sellers and are important knowledge: *“I was expecting better... I missed more bitterness and more intensity... I like the IPA better. I thought I would like the Double IPA better, but...”*. Knowledge is also obtained through shared experiences at the brewers' facilities where they often meet and produce together, making different experiences, as P1 says when he says, *“tomorrow I have brewers here at home, let's try recipe X”*, from available links and the exchange procedure manuals, books, etc. Contests are another source of knowledge, as *“the jury provides competitors with a report with a series of comments and indications for improvement aimed specifically at the beer that competed, which allows us to learn a lot”* says P2.

#### 4.2.3 Impact of acquired knowledge

Brewers depend on this network to obtain the knowledge they need to be able to produce, improve, obtain recipes, understand the customer, and market trends, know what is done abroad, in the dissemination of products, as shown in the post posted on the network. by P1: “FDS à Lagareiro – Sweet, quite malty, reminds me of caramel with a little crispy finish. It is a very good California lager, with a typical aroma, fantastic colour, perfect carbonation. In short: Very good! Be aware that soon it will be everywhere!”, for purchases or maintenance. The impact of knowledge for brewers is huge and makes a difference allowing many to venture into business creation. As for vendors, knowledge is introduced in customer service and advice processes, in supporting beer suppliers, or in improving their offer. The knowledge acquired by consumers impacts the way they consume craft beer, where they can make it, where they can buy it, which will have an impact on bars and producers. The promoter broadens his experience and knowledge by sharing what is done and what is known, using it in his processes, as a competition jury or as a promoter and organizer of events.

### 5. Discussion

The studied network meets all the prerequisites for knowledge transfer (Liyanage et al., 2009). Recipients absorb and combine knowledge, creating new knowledge and using it to improve processes and promote regional economic development (Franco, 2011). Learning is emphasized, leading to new production processes, recipes, consumption, and marketing approaches for brewers (Nonaka & Konno, 1998). Evaluation of knowledge transfer's impact on product quality is essential (Liyanage et al., 2009). Trust-based friendships facilitate knowledge sharing and mitigate opportunistic behavior (Lane et al., 2001).

### 6. Conclusion

Successful knowledge transfer requires the ability to acquire, absorb, assimilate, and apply knowledge effectively (Cranefield & Yoong, 2005). In the brewer's network, knowledge transfer follows the Liyanage et al. (2009) model, which integrates the SECI model by Nonaka and Konno (1998). Brewers identify and seek knowledge within the network (Grant, 1996). Through socialization and on-the-job training, experienced brewers transfer tacit knowledge to others (Argote & Miron-Spektor, 2011). Brewers acquire, transform, associate, and apply knowledge to create new recipes, ingredients, and manufacturing strategies, emphasizing the value of knowledge utilization (Alavi & Leidner, 2001). The network's importance lies in enhancing knowledge transfer among its elements, supported by strong relationships (De Luca & Cano Rubio, 2018).

### 7. Implications, Limitations and Research Agenda

The main objective of the study was to contribute to the literature, in theoretical and practical terms, regarding the importance and dynamics of knowledge transfer that occurs between the various elements of the brewer's network, which occurs between individuals and not only between organizations. Thus, we confirmed that the Liyanage et al. (2009) model describes the process, and attention is drawn to the small number of studies that exist in Portugal.

Internationally, the phenomenon of craft beer is increasingly relevant, being used as a cultural dynamic in several regions (Stoilova, 2020). There is a small number of studies on knowledge transfer in non-organizational networks, and this study contributes to this knowledge, showing the importance of people, their relationships, and their interest in this knowledge.

This study suffers from some limitations, namely the reduced number of interviews, given the high number of elements of this network, which was due to the Covid-19 pandemic, which limited contacts and availability for interviews and face-to-face visits that would allow observe *in loco* the process of socialization and transfer of knowledge in the network in its various aspects.

In the future, it's necessary to continue studying the influence of managers on the ability to transfer knowledge and learning within a craft beer company, as well as the impact of the size of the company on the ability to create and transfer knowledge in craft breweries and bars.

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