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Annette Lynghjem, student, HIALS

Helene Kvalsvik Breivik, student, HIALS

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# **Country of origin and the effect on consumers' purchase intention of Norwegian salted cod – a study of the Spanish market**

Annette Lynghjem, Høgskolen i Ålesund  
Helene Kvalsvik Breivik, Høgskolen i Ålesund

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(Fagfelleurdert av professor Erik Nettet, Høgskolen i Ålesund)



## **Abstract**

The Spanish seafood market is one of the most attractive markets in Europe, having the second highest per capita expenditure on seafood. The Norwegian market share in the Spanish market for salted cod has, however, decreased significantly over the past decades. Norwegian producers have apparently not been able to deliver products that are in line with the consumers' preferences, and the quality of the delivered products are believed to be inferior to that of the competitors. In this study the following research questions have been addressed: 1) *How does country-of-origin affect purchase intention of Norwegian salted cod in Spain?* 2) *Are there different product preferences between different regions in Spain?* and 3) *Can Spanish consumers differentiate between Norwegian and Icelandic salted cod?*

Theory indicates that Country-of-origin (COO) perceptions may be an important quality indicator, and thus have an influence on consumers' purchase intentions. The empirical literature is however non-conclusive, but this can partly be due to different empirical approaches. Previous research has mainly focused on either a qualitative or a quantitative approach. The present study is a combination of a quantitative consumer survey and in-depth interviews with consumers and other agents in the distribution chain.

One important finding is that one must differentiate between COO and Brand awareness. Findings from the survey indicate that COO awareness of Norwegian salted cod is low, and very few consumers in Spain can differentiate between Norwegian and Icelandic salted cod. Brand awareness has an indirect effect on purchase intention via brand image. The most important drivers of purchase intention of Norwegian salted cod are, however, product attributes connected to quality, whereas prices does not seem to be that important. Product preferences seem to differ between the studied regions (Cantabria, Cataluña, Comunidad Valenciana) with regard to product attributes like thickness, freshness, color and texture.



# 1. INTRODUCTION

Spain is one of the most attractive domestic markets in Europe, with more than 46 million potential consumers (Instituto Nacional de Estadística, 2014). Spain is the 5th largest economy in the European Union, and the 13th largest in the world in terms of GDP (Statisticstimes.com). In comparison, Portugal is ranked as the 46th largest economy. Spain is the largest importer of fish and seafood in the EU, and the fourth largest in the world with US\$6.9 billion in 2014. Spaniards consumed over 26 kg of fish and seafood per capita in 2013, a rate that was second only to that of Portugal (27 kg per capita) (THEGOVERNMENTOFCANADA 2011).

In the EU, Spain has the highest expenditure for fishery and aquaculture products, but is nevertheless surpassed by Portugal when it comes to expenditure per capita.

Spain used to be one of the most important salt fish markets for Norway, but this has changed in the recent years. In 1996, the Norwegian market share in Spain was around 34 %, but by 2005 the market share was below 10 % (Lindkvist, 2009).

Norwegian export of salted cod has faced stronger competition, especially from Iceland and the Faroe Islands. Due to the economic crisis, consumers are more price sensitive, and home consumption has become more common than consumption in restaurants. Even though salted cod from Norway has a competitive price, studies and statistics have shown that Iceland is the market leader, mostly due to their new process technologies and adaptability to consumer trends. Icelandic and Faroese producers inject the cod with phosphate, leaving the cod white and appealing, and are overall supplying products of better quality. The consumer preferences in Spain for whiter and thicker salted cod are said to be one reason for the increase in market shares from countries such as Iceland, but the major challenge for the salted cod industry is how to increase market shares and margins as well as finding new markets to expand in (Bionær, 2014-2016).

Studies on consumers' knowledge about a brand's origin have shown to be limited (Saimee et al., 2005 cited in Martín Martín and Cerviño, 2011). Several studies empirically show that consumers do not know the correct country of origin of products (Balabanis and Diamantopoulos, 2008; Samiee et al., 2005 cited in Diamantopoulos et al., 2011) and according to Samiee et al., (2005) *“consumers either have limited recognition of brand origins or find such information relatively unimportant and thus unworthy of retention in*

*memory*” Diamantopoulos, 2011. Many researchers have previously conducted studies regarding the Spanish market, most of which focuses on importers, suppliers and market opportunities. On this basis, we recognized the need for a different approach and chose to focus on both sellers and end consumers to get a different angle. Our aim is that our contribution can provide a deeper insight into the market based on both qualitative and quantitative analyzes. The research question is: *How does country of origin affect purchase intention of Norwegian salted cod in Spain?*

In addition, the theoretical framework suggests an interesting linkage between the awareness of country of origin and preferences, which we wanted to examine. We therefore developed some additional research questions: *How do product preferences differ between regions in Spain?* and *Can Spanish consumers differentiate between Norwegian and Icelandic salted cod?*

We hope this study will provide a foundation for the understanding of how country of origin and the perceptions of Norwegian salted cod affect Spanish consumers in their purchasing decision.

**The rest of this thesis is organized as follows:**

Chapter 2 gives an overview of the Spanish market for salted cod and the Norwegian position. Chapter 3 introduces the theoretical framework necessary for developing the research question, hypothesis and the conceptual model for the study. Chapter 4 presents the research methodology and the data collection method. The method is discussed, as well as field areas and how the fieldwork was carried out. In addition, arguments for the validity and reliability of the qualitative and quantitative analysis are presented. Chapter 5 presents the data analysis and the results from the quantitative and qualitative analysis. Chapter 6 discusses our findings, limitations and implications for further research.

## **2. THE CONTEXT**

This chapter gives an overview of the Spanish market for salted cod, competition, Norway's position in market and the technologies in the fishing industry for salted cod. Information provided in this chapter is important background information, and it is therefore elaborated. Based on this chapter, we will see differences and trends in the market and explore market opportunities for the Norwegian salted cod industry.

### **2.1 The Spanish market for salted cod**

Spain is known for its long seafood traditions. The country is divided into 17 different regions, all of which have differences in consumer trends. Spain is the largest seafood market in the EU with an expenditure of 11.302 million Euros (EUMOFA, 2014), which gives a market share of 17% (seafood.no, 2015). Spain has a population of 46,464,053, and the estimated number of households is 18.252.887 (Instituto Nacional de Estadística, 2014). In 2013, consumption exceeded 1,600,000 tons, valued at 11 650 million euros, and the total seafood consumption/expenditure per capita was 35 kg valued at 250 euros (Innovasjon Norge, 2015). In 2014, the consumption of cod was 1 kilo per capita, consisting of 0,7 kg fresh cod per capita and 0,4 kg frozen cod per capita (Mercasa.ediciones, 2014). In 2010, imports from Norway accounted for 1,8% of the total imports to Spain which translates to approximately 19 180 tons with a value of 70.4 million Euros (www.camaras.org cited in seafood.no, 2015)<sup>1</sup>.

The Nordic countries benefit from the low quotas and the increase of imports in the Spanish salted cod market. This may be one of the reasons why exports from Norway increased during the 1990s, but new production processes and technologies in development within the salted fish industry lead to a more diversified product assortment (Lindkvist et al., 2008). A survey conducted by seafood.no revealed a potential to increase consumption per capita from fresh filet cod from 0.38 kg in 2011 to 0.5 kg in 2015. This brings new opportunities for Norway in the Spanish seafood market and, according to a market report, it is realistic to say that the Norwegian market share can be increased to 40% in a 3 year period (seafood.no, 2015).

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<sup>1</sup> Restricted information from Norwegian Seafood Council with permission to publish,



There has been a decrease in Norwegian market share in the period from 2000-2008 (appendix 4a and 4b) where Iceland has gained market shares at cost of Norway. Iceland had in this period launched an aggressive marketing campaign which included a high quality control strategy and aiming for high satisfaction (Seguí and Alba, 2011). The decline in the catch of Bacalao Nacional could explain the increase of import.

## **2.2 Norwegian white fish export to Spain**

Spain has historically been the main market for Norwegian salted cod. However, the market competition is keener and supply is available from a larger number of countries as more species and products are substituted. In 2013, Norwegian export of salted cod and salted and dried cod reached a value of 3.8 billion NOK. This contains almost 50 % of the total cod exports with salted and dried cod representing 3.1 billion NOK. About 90 % was shipped from the North-West region of Norway which implies a possible presence of an industry cluster (Bjorndal, 2014)

According Spanish import statistics, Spain imported 1.580.000 tons in 2010, with a value of approximately 4.25 billion Euros. In 2010, the import from Norway accounted for 1,8% of the total import in Spain, approximately 19 180 tons with a value of 70.4 million Euros (www.camaras.org cited in seafood.no, 2015). The imported volume of salted fish from Norway to Spain nearly doubled in the years between 1991 and 2005, but overall the export volume from Norway to Spain decreased from about 4,900 tons in 1995 to 1,150 tons in 2012, which corresponds to the reduction of market share from 20% to 6%. The market share has been taken over by other countries, mainly Iceland (27%), Faroe Islands (18%) and Sweden (17%), as well as low cost salted cod processed in China (Bjorndal, 2014).

Norwegian and Icelandic salted cod have had the largest market shares in Spain and affected the Spanish salted fish market by their competition. In 1991, Iceland had a market share of 46.9%, compared to a Norwegian market share of 12.1%. In the period 1996-1998, the Norwegian salted and dried cod producers held more than one third of the market share in Spain. Norwegian exports to Spain started to decrease in 1999 (see figure 2.1), and the Icelandic export held 49% of the markets shares in Spain in 2005 (Lindkvist et al., 2008). The decline in market share may have several explanations including the recession and a change in consumer preferences towards easy-to-use products such as frozen filets, fresh and light-

salted fish products. The consumer preferences in Spain for whiter and thicker salted cod are said to be one of the reasons for the increase in market share for countries such as Iceland. The major challenges for the Norwegian salted cod industry are to increase market share and margins as well as finding new markets in which to expand (Bionær, 2014-2016).

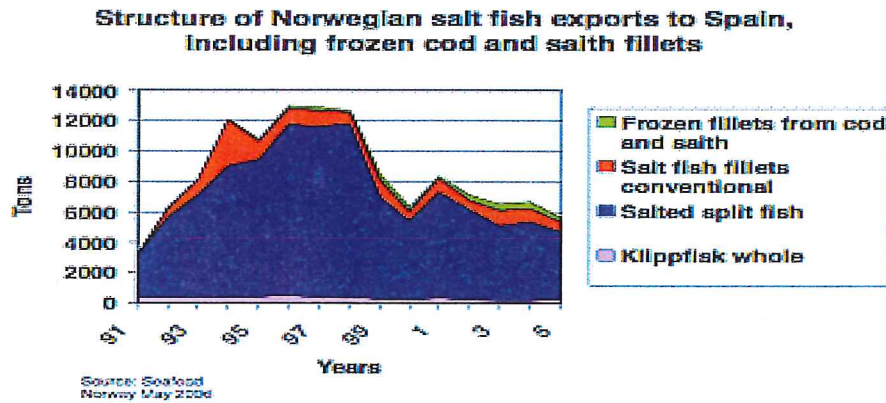


FIGURE 2.1: NORWEGIAN EXPORT TO SPAIN FROM 1991 TO 2005

(LINDKVIST ET AL., 2008)

From figure 2.2, we can see the export distribution of the different products exported from Norway to Spain (seafood.no, 2015). The total export from Norway in 2013 increased somewhat from 2012, but conventional whole salted cod had a decline from previous years. Salted cod fillets, is not shown in the chart for 2013, indicating that export of this product was small. We see a significant increase in exports of fresh fish, and frozen whole cod has roughly doubled from 2013. The exports of salted and dried cod (clipfish) and frozen cod fillets have been fairly stable during this period.

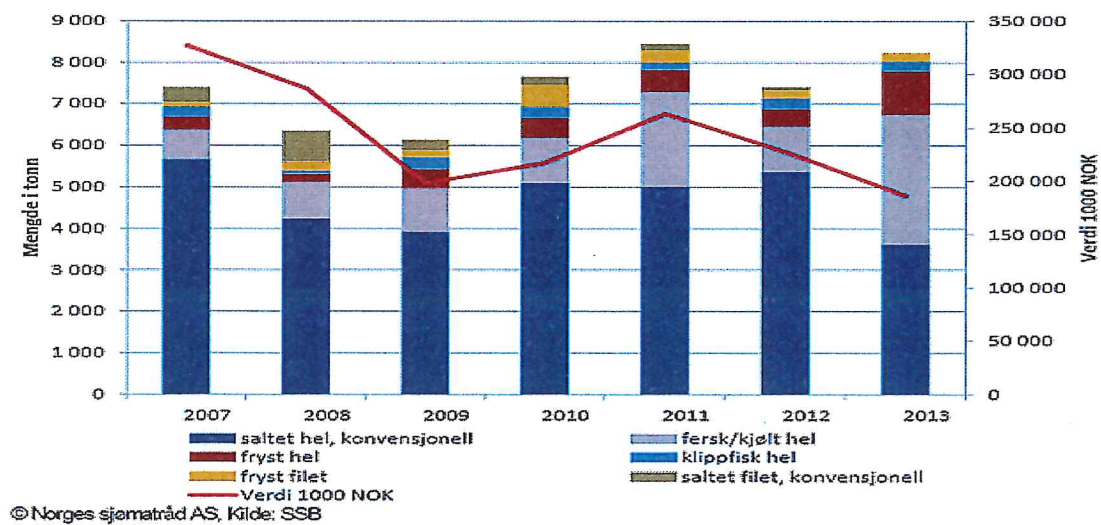


FIGURE 2.2: NORWEGIAN EXPORT OF DIFFERENT COD PRODUCTS 2008-2014 (SEAFOOD.NO, 2015)

### **2.3 Competitors and challenges in the Spanish market**

Norwegian exports of salted cod have faced a much stronger competition in the recent years, especially from countries like Iceland, the Faroe Islands, Canada and Russia. Salted fish is mainly produced from cod or saithe, but it can also be made from ling, tusk or haddock, which increases the competition. In Norway, 15-25% of the production is exported as wet salted products. In Iceland, this category accounts for around 40%, while in the Faroe Islands it is approximately 25% (Thórarinsdóttir et al., 2010).

Iceland and the Faroe Islands have a strong market position in Spain where the highest price for cod is paid. One reason for the strong market position is that producers in these countries have been more dynamic in processing development and identifying alteration opportunities which have influenced consumer preferences (Thórarinsdóttir et al., 2010). In addition, Icelandic and Faroese producers use phosphate in the production, which has given them a competitive advantage since they deliver products adapted to consumer preferences (Bjørkevoll et al., 2012). Phosphate reduces the development of the yellow color and causes the fish to maintain a white and appealing appearance. A study conducted by Moreforskning Marin showed that the defrost loss was not significantly affected by the phosphate treatment (Bjørkevoll et al., 2012) and all the tested products lost between 10.0% and 11.6% of the weight during defrosting. Large differences were not found in the quality between the products with or without added phosphate either. The use of phosphate in Norwegian seafood has been legally required based on certain conditions in wet-salted fish of the cod family with a salt content of over 18% (Regjeringen.no, 2014). This to compete on equal terms with competitors and to meet the consumers demands regarding whiter, juicier and thicker fish (Regjeringen.no, 2013).

Iceland is the second biggest fishery nation in the North East Atlantic, Norway being the biggest. Spain and the United Kingdom are the main markets for Iceland and they use many processing methods. A large part of the catch is salted and sold as quality food to Southern Europe. An equivalent part is iced at sea, then processed and frozen after landing. An increasing part of the catch is exported fresh in containers by sea or by air, while there is a decrease in the quantity processed and frozen at sea. In recent years, salted fish products constituted 15-20% of the value of seafood exports from Iceland and about half of the catch of cod is salted. Currently, there are about 100 saltfish plants situated around the Icelandic



coast, varying in size from small family enterprises to large specialised factories (Icelandicfisheries).

Cod products have accounted for 30-40% of the total seafood export revenue in recent years, and are by far the most economically important fish stock in Iceland. Cod is the most important target for bottom trawl and Danish seine fisheries and also the main target species in longline, handline and gillnet fisheries (Icelandicfisheries).

The fisheries in Iceland are managed by a catch quota system that is individually allocated to each vessel or vessel groups. Producers are allowed to own their own quotas. Many of the biggest producers are vertically integrated, meaning that they own their own quota, the vessels, the processing companies and control the export (Thórarinsdóttir et al., 2010). This vertical integration is an important factor when it comes to controlling quality and the supply and quality of the catch over time. The change made by the government in the 1990s has been necessary for the Icelandic export industry. According to Kolbeinn Árnason, the Icelandic fishing industry would have been uncompetitive in the world market if they had not been allowed to own their own fishing trawlers (NRK.no, 2015).

The high season for cod fishing in Iceland is during winter in the spawning grounds and along the migration routes to the spawning grounds. The rest of the year the catch is greatest in the main feeding grounds north west and south east of Iceland where the cod is mainly caught at depths of 100-250 m and temperatures of 4-7 ° C (Icelandicfisheries).

The Norwegian seafood industry exports more than 95% of production to approximately 150 nations worldwide. Despite the fact that the fisheries and aquaculture industry are considered to be one of Norway's largest export industries, the contribution to GDP and employment is not greater than about 1%. In comparison, fisheries and fish processing in Iceland constitutes about 10% of GDP and 4% of employment (Regjeringen.no, 2014).

Fisheries in Norway are restricted by the Marine Resources Act (Havressurslova) of 2008 and the Participation Act (Deltagerloven) of 1999. The Marine Resources Act regulates marine harvesting in order to secure sustainable and profitable utilization of living marine resources while at the same time securing coastal settlement and employment. The Participation Act regulates access to commercial fishing activities and regulates who can fish for a living (Armstrong et al., 2012). In addition, there are activity requirements, which limit the possibility of vertical coordination in the wild fish industry. These requirements aim to sustain a varied and locally owned fishing fleet - which in turn contributes to the objective of

employment and settlement along the coast (Regjeringen.no, 2014). Today, fishers and vessels can own parts in the industry, but the industry can not own vessels (NRK.no, 2014).

In addition, the structure of the Norwegian salted cod industry has differences regarding plant size and type of organization and are faced with many challenges that have resulted in a weak economic performance (Bjorndal, 2014). The lack of vertical integration in Norway makes it more difficult to ensure quality and control throughout the value chain. The positive side is that the Norwegian system allows for the continued operation of smaller independent boats, which has proven to be an issue in Iceland after the change in the quota system.

In 2013, a commission was appointed to investigate the seafood industry's terms and conditions. The report was presented in 2014 and The Tvetervås Committee points out that out of considerations for competitiveness and profitability, the players in the seafood industry should be able to choose the organization which satisfies different needs for vertical coordination (Asche et al, 2014 cited in Regjeringen.no, 2014). This is already an opportunity in the salmon industry. The Commission wants to facilitate this possibility in the catch-based value chains also.

The Committee proposes that Participant Act § 6 is adjusted so that it allows for seafood industry companies to hold permits to vessels and quotas. A clarification on this proposal is expected by the end of 2015.

## **2.4 Seafood consumption patterns in Spain**

The Spanish market for salted cod has been restructured over the past years, and Spanish consumption has moved from dried salted cod to salted cod and increasingly to wet salted cod with Iceland as the leading supplier. There is a high frequency of consumption of fish in the Spanish market as 67% of consumers eat seafood two or three times per week. The main consumer group is persons from 56 to 65 years old, but the profile is changing gradually due to changes in family size, more women working outside of the home, older population and health (Innovasjon Norge, 2015). Home consumption of cod in Spain had an increase of 716 tons or 1,6 % in the period from jan-sept 2014 compared to the same period the previous year. Measured in value it was an increase of 5.5 million Euros or 1,48 % (Seafood.no).

High unemployment rate and an uncertain economic situation are some of the reasons causing an increased demand of less expensive products. The Spanish market is price sensitive and this is evident in the increase of home consumption and a correspondingly economic drop in the Hotel, restaurant and café (Horeca) segment. Home consumption, through supermarkets and markets, is the main arena for turnover and represents around 80% of total consumption. Consumption in the Horeca segment counts for roughly 16% and schools, hospitals, and other social institutions count for around 4% (Innovasjon Norge, 2015). As of 2013, hypermarkets and supermarkets account for 53,7% sales of salted fish, while traditional points of sales account for the remaining 46,3% (figure 2.3) (Fernandez-Polanco, 2014).

Salted fish sales by retail category in 2013. Source: Panel de Consumo Alimentario

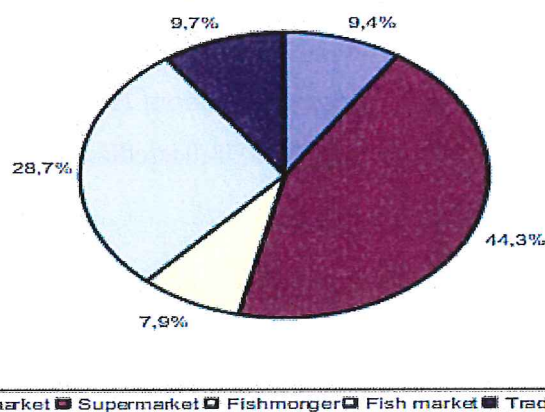


FIGURE 2.3: SALTED FISH SALES BY RETAIL CATEGORY IN 2013.

(FERNANDEZ-POLANCO, 2014)

In recent years there has been an increase of women working outside the home. This has led to less available time for food preparation (Gallart-Jornet et al., 2004), who traditionally prepared the meals, no longer have the time to prepare traditional salted cod meals because the process of desalting and rehydration is too time consuming. With families in “time squeeze”, new ways of organizing the market supply of salted cod has been developed. Limited time for buying and preparing food has opened up a need for fish products in supermarkets, where consumers can buy different products in one location instead of only in the traditional fish markets (Gallart-Jornet et al., 2004). The change in preferences and consumption among Spanish consumers can be seen as a result of change in work



environment. This has opened up a new market for frozen light salted fillets which re partially desalted fish portions packaged ready to eat and ready to cook.

According to religious beliefs, Catholics do not eat meat during Lent. Lent begins on Ash Wednesday and covers the period before Easter Sunday, lasting for approximately 40 days. Consumption of fish in Spain increases during Lent, which is evident in the increase in demand of salted cod. In addition, salted cod is by many a preferred meal for special occasions, such as Christmas, since the preparation time is too long for everyday meals.

## **2.5 Technologies**

Cod is, and has been for a long time, highly appreciated as a dried and/or salted product due to its high nutritional value (high protein and low fat content) and specific sensory properties (color, texture, aroma, and a characteristic taste) (Borgström 1968; Bjørkevoll et al., 2003; Lauritzsen et al., 2004b; Martínez-Alvarez et al., 2005b; Heredia et al., 2007 cited in Oliveira et al., 2012).

Atlantic cod (*Gadus morhua*) has become scarce and is protected by strict management systems in order to limit overexploitation (Warm et al., 2000 cited in Oliveira et al., 2012). The main cod fishing area lies along the coast of Newfoundland-Labrador, Iceland, Greenland, and Lofoten Island (Norway) (Di Luccia et al., 2005 cited in Oliveira et al., 2012) According Cohen et al., most of the world's cod landings are from traditional cold-water trawl fisheries and according to Margeirsson et al., Icelandic trawlers provide 40% of the annual catch of cod (Oliveira et al., 2012). In 2012, the global capture production for *Gadus morhua* was 1.114.382 tons, an increase of 6% from 2011(1.051.545) (FAO, 2014)

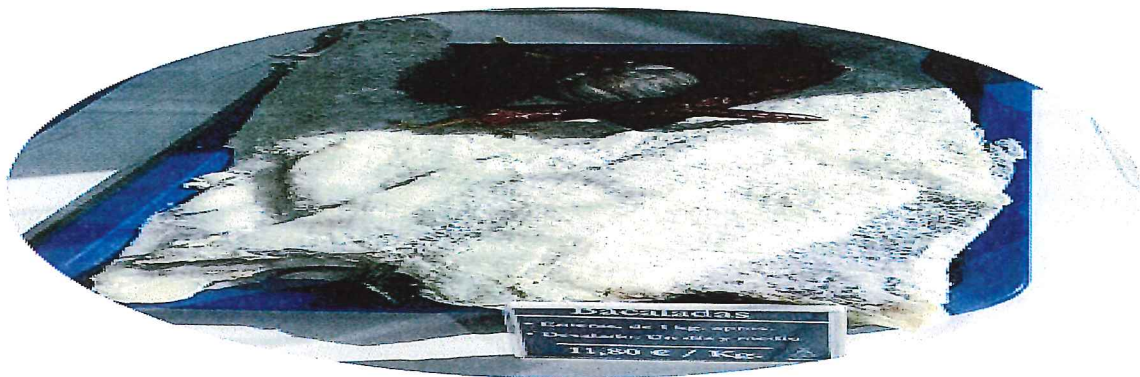


FIGURE 2.4: SALTED COD (PRIVATE PICTURE, 2015)

### 2.5.1 Preparing for salting

Generally, after catching, cod is subjected to bleeding and gutting, and is then chilled or frozen. At the processing unit, the cod is beheaded, trimmed, filleted or split (Oliveira et al., 2012). The cod is cut along the ventral median line and opened to remove the vertebral column for about 3/4 of its length (Di Luccia et al., 2005 cited in Oliveira et al., 2012). Immediately after splitting, the cod is washed in running clean water, or clean seawater, in order to remove blood and the “black membrane” (peritoneum) might be removed from the belly walls before salting (Codex Alimentarius 2003 cited in Oliveira et al., 2012). The different salting methods are dry salting, wet-salting, brining, brine injection or a combination of these techniques. The water content of the cod muscle is reduced from approximately 82% to about 54% during the traditional salt-curing process (Oliveira et al., 2012).

In dry-salting (or kenching), the cod is placed skin-side down in stacks with dry salt crystals between the layers until it is fully cured (Barat et al., 2003 cited in Oliveira et al., 2012). Dry salting is the traditional Spanish way of producing Bacalao Verde (Lindkvist et al., 2008).

Wet-salting, or pickling, is a process where the cod is mixed with salt, stacked in layers and stored in watertight containers under the resultant brine, termed “pickle” (Codex Alimentarius 2003 cited in Oliveira et al., 2012). Brine salting, or brining, is carried out by immersing fish into a brine solution prepared with coarse salt and water. In Iceland, brine salting has gained popularity. According to van Klaveren and Legendre (1965), Bogason (1987) and Akse et al., (1993), the final salted fish product contains 55% to 58% water and 18% to 21% salt, compared with approximately 80% water and 0.3% salt in the raw material (Oliveira et al., 2012). The water content, however, can be further reduced by drying, and

when it becomes less than  $500 \text{ g}\cdot\text{kg}^{-1}$  (50% w/w), the dried salt-cured cod (klipfish) is obtained (Bjørkevoll et al., 2003; Lauritzsen et al., 2004a cited in Oliveira et al., 2012).

Freshness is a controversial concept and the results obtained by Barat et al., (2006) showed that the main influence on cod freshness occurs during the salting process as the freshest raw material has the lowest salt uptake (Oliveira et al., 2012). According to sensory quality after desalting, the freshest raw material tended to give a harder fish with less flakiness, while the oldest raw material gave a higher flakiness (Barat et al., 2006 cited in Oliveira et al., 2012). One of the major factors affecting the quality of salted fish is the salt composition (Rodrigues et al., 2005 cited in Oliveira et al., 2012).

### **2.5.2 Product and product types**

The process of desalting cod at home is time consuming and needs planning. This, combined with changes in lifestyle and nutrition habits in society, has increased the demand for “easy or ready to use” products (Barat et al., 2004c; Muñoz-Guerrero et al., 2010 cited in Oliveira et al., 2012). Today, consumers wish to spend less time on food preparations (Shiu et al., 2004 cited in Oliveira et al., 2012). There has been a decrease in the demand for heavy- salted cod. Some reasons for this is the increase in consumer demand for easy or ready-to-use products, the need for desalting at home, the alarming drop in cod catches, the rise in retail prices, and the current trend in low sodium diets (Kurlansky 1999; Skjerdal et al., 2002; Gallart-Jornet et al., 2003; Barat et al., 2004b; Andrés et al., 2005a; Martínez-Alvarez et al., 2005b cited in Oliveira et al., 2012). New ready-to-use desalted cod products, with shorter preparation times, was launched on the market at the end of the 20th century (Martínez-Alvarez et al., 2005b cited in Oliveira et al., 2012).

In order to adapt to the new market requirements, many include the desalting step among their industrial operations (Barat et al., 2004b,c; Muñoz-Guerrero et al., 2010 cited in Oliveira et al., 2012). This has been done in several factories, mainly to produce frozen desalted cod (Barat et al., 2004b,c cited in Oliveira et al., 2012), which have a relatively long shelf life (several months) (Fernández-Segovia et al., 2006 cited in Oliveira et al., 2012).

Before desalting, salted cod is usually cut into pieces like lomos (loins), migas, and fillets etc. When the salted cod is desalted, the flesh become more spongy and softer, and the salt content is reduced so that it is edible. The texture and taste have been considered the main



parameters for sensory ranking of cooked samples of desalted cod among consumers familiar with traditionally desalted cod (Barat et al., 2006 cited in Oliveira et al., 2012).

Quality classification of salt fish by Norwegian industry standards is divided into three grades: Imperial/superior, universal and popular. Cod classified as imperial/superior is to be firm, light-colored and without blemishes. Universal is inadequately split, inadequately washed and rinsed, has a round tail, moderate blood clots, major tears and longitudinal cracks, minor blood, liver and/or bile stains, insufficient removal of backbone and somewhat unevenly salted. Fish that does not satisfy the previous requirements are to be classified as popular (Industrystandardsforfish, 1998).

The traditional, time-consuming process of desalting salted and dried cod is no longer compatible with the change in living and working patterns. Consumers seem to prefer convenience above tradition, which has paved the grounds for alternative products.

The alternatives to traditional salted and dried cod are:

*Lightly salted cod fillets* that are quick-frozen are made by injecting salt and water into the filets prior to freezing. These fillets have a less distinct taste than traditional salted/salted and dried cod and are very popular due to the convenience of immediate use after defrosting. This reduces the time and effort required for cooking, making lightly salted fillets an attractive alternative for households and restaurants. In addition, portions of fixed size and weight are easy to produce and, given the water content, it allows the product to be sold at very competitive prices.

*Partially desalted cured products* come in different shapes, such as individual portions, tiny loins without bones and strips from belly flaps and tail. According to Gallart-Jornet (2004) this is a very attractive product in the Southeast, in places like Valencia, Murcia and Alicante.

*Ready-to-cook desalted cod* is usually sold frozen, due to the extreme vulnerability of the cod muscle when it is desalted. Ready-to-cook salted cod comes in product forms such as thick loins, tiny loin portions without bones, individual loin portions, tails, jaws/cheeks, belly etc (Gallart-Jornet et al., 2004).



FIGURE 2.5: A SELECTION OF THE PRODUCT RANGE OF SALTED FISH SOURCE: (FJØRTOFT, 2015)

### 2.5.3 Cod fishing in Norway

In Norway, cod fishery is carried out all year, but the first half of the year is the most intense period. The southern Barents Sea and the coastal areas are most important in winter/spring, while during autumn the important area is along the polar front, like the Bear Island–Hopen area (Instituteofmarinresearch, 2013).

A typical year the Norwegian catch is made up of about 30 per cent from bottom trawl, 30 per cent from gill net, 15 per cent from long-line, 15 per cent from Danish seine and 10 per cent from hand line (Instituteofmarinresearch, 2013).

The project "Fra bunn til munn" analyzed and compared fish caught by longlining and fish caught by trawl. They found that line-caught fish has whiter flesh and gives a firmer fillet. The most important reasons for the better flesh quality of line-caught fish is that the fish is better bled out and it has less compression damage (Nofima, 2010). The reason for the compression damage and the poor bleeding is because trawling brings up between five to twenty tons of fish at the same time, whereas with long-lining the fish is brought on board one by one. Nofima has also tested the quality of the fish, judged on basis of color, texture, and smell, splitting and surface, while chefs at the Gastronomic Institute assessed the flavor.

The conclusion of both groups is that line-caught fish has a much higher quality (Nofima, 2010).

Quality classification of salt fish by Norwegian industry standards is divided into three classes: Imperial/superior, universal and popular. Cod classified as imperial/superior is to be firm, light-colored and without blemishes. Universal is inadequately split, inadequately washed and rinsed, has a round tail, moderate blood clots, major tears and longitudinal cracks, minor blood, liver and/or bile stains, insufficient removal of backbone and somewhat unevenly salted. Fish that does not satisfy the previous requirements are to be classified as popular (Industrystandardsforfish, 1998).

### 3. THEORETICAL FRAMEWORK

There is extensive literature available on consumer purchase intention based on country of origin, brand awareness, brand image, product quality and price. This chapter will review some of these theories and literatures. Consumer's intentions to purchase a product are influenced by several factors. Awareness and image of a brand or a specific country has proven to be important for consumer's purchase decisions along with attributes such as quality and price (Aaker and Keller, 1990). A reason for studying brand equity arises from a strategy-based motivation to improve the productivity of marketing. Firms seek to increase efficiency of their marketing expenses and need a better understanding of consumer behavior and consumer decision-making. Keller (1993) suggests that a firm's most valuable asset for improving marketing productivity is the knowledge that has been created about a brand in the consumers' minds (Keller, 1993)

#### 3.1 A general model of purchase intention

Diamantopoulos et al (2011) proposes a general model (figure 3.1) that captures all possible direct and indirect effects of country image (CI) and product category image (PCATI) on brand image and purchase intention. The link between CI and PCATI, and between brand image and purchase intention are well known in the literature. In Diamantopoulos' model, purchase intention is directly impacted by brand image and brand familiarity and indirectly affected by CI and PCATI through their effects on brand image.

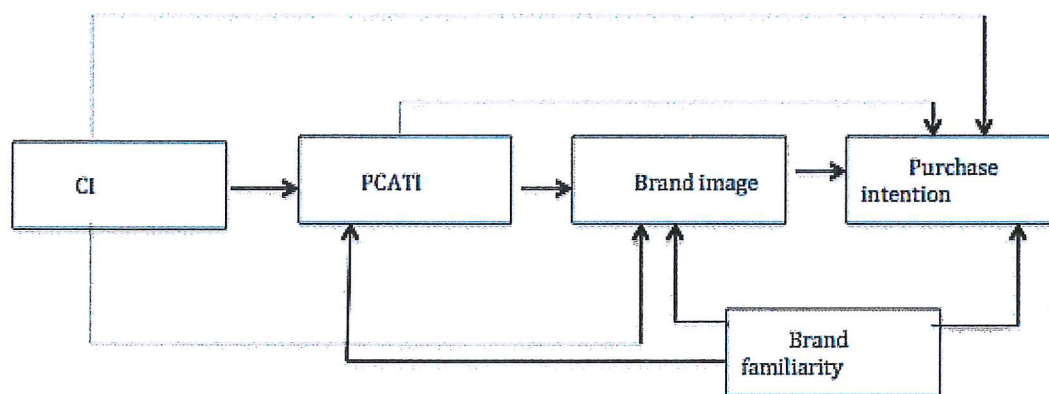


FIGURE 3.1: BASE MODEL OF DIAMANTOPOULOS ET AL., 2011 SOURCE: (DIAMANTOPOULOS ET AL., 2011)

Under the orthogonality perspective, country image and brand image are believed to have direct and possibly compensatory influence on the outcome variables, in our case purchase intention. This is implicit in direct comparisons of country of origin and brand influences in the literature (Diamantopoulos et al., 2011). The implication of this perspective is that the consumer's perceptions of country and brand image are developed regardless of each other, meaning that a consumer's image of a certain country does not affect his image of a specific brand from that country (and vice versa). So, under an orthogonality perspective, CI and brand image are expected to have independent (and possibly compensatory) influence on purchase intention. The literature shows that CI may compensate for a weak brand, while a strong brand on the other hand does not necessarily counterbalance a negatively perceived CI (Ahmed et al., 2002; Tse and Gorn, 1993 cited in Diamantopoulos et al., 2011). According to the irradiation perspective, a consumer's image of a certain country shapes his perception of the brand image from that country (Lebrenz, 1996 cited in Diamantopoulos et al., 2011). A consumer's image of Norway would directly impact his image of salted cod, and the latter would impact purchase intention. This indicates that the strength of a brand's image is partly attributable to the image of a brand's origin (Shoocker et al., 1994; Thakor and Katsanis, 1997 cited in Diamantopoulos et al., 2011). However, Diamantopoulos focus explicitly on the role of CI as a driver for brand image.

### **3.2 Our model**

The model in this thesis is loosely based on that of Diamantopoulos et al., (2011) with several adaptations and simplifications. Originally, we intended to compare the purchase intention of Norwegian and Icelandic salted cod by measuring them separately. Unfortunately this was not feasible based on interviews and qualitative analyzes. Hence, our model is a general model compared to that of Diamantopoulos.

Diamantopoulos' model is complex and compares two different countries. CI and PCATI have a direct effect on purchase intention. Based on a pre-test of our survey in Cantabria, we discovered that a minority of consumers could state the country of origin, and we choose to eliminate these variables and replace them with country of origin awareness (COOA). Even so, literature regarding country of origin and country image in general may help to give a broader perspective of what effects it might have on purchase intention and products.



We will test our hypotheses in two regressions. The first will test whether brand awareness, COOA and the variables: product characteristics, distribution, price and quality have an effect on brand image. The second will test the effect of our drivers of brand awareness, COOA and brand image on purchase intention of salted cod in Spain.

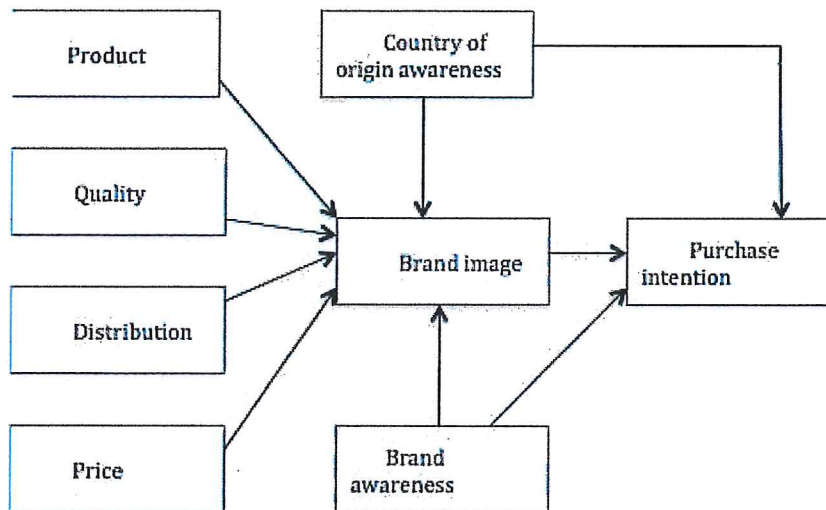


FIGURE 3.2: RESEARCH MODEL

### 3.3 The main variables

#### 3.3.1 Purchase intention and consumer decision making

Schiffman et al., (2008) defines decision making as the selection of an option from two or more alternative choices. Crosno defined consumer purchase intention as the probability that customers in a certain purchasing situation choose a certain brand of product category (Crosno et al., 2009 cited in Ghalandari and Norouzi, 2012). Purchase intention can also be defined as a physiological action or the decision to act that shows an individual's behavior according to the product (Wang and Yang, 2010). Research shows that particular features of products, perception of consumers and perception of country of origin all have an influence on customer purchase intention (C.L. Wang, Li, Barnes, & Ahn, 2012 cited in Rezvani et al., 2012). Kotler (2003) argues that individual attitudes and unpredictable situations will influence purchase intention. Individual attitudes, which include personal preferences and obedience to others expectations through word of mouth marketing and unpredictable

situations, signify that consumers change their intention to purchase because a situation is appearing, for example, when the price is higher than a person's reference price (Dodds et al., 1991).

A conceptual study conducted by Rezvani et al (2012) showed that country of origin as an extrinsic cue has higher influence on consumer product evaluation even when consumers can evaluate all the intrinsic product characteristics by experiencing the product. Further, it is argued that there is no doubt that country of origin has a considerable influence on purchase intention (Rezvani et al., 2012).

Schiffman et al. (2008) presented a model of the consumer decision-making (shown in appendix 5), which illustrates the problem-solving or cognitive consumer and, to some degree, the emotional consumer. The model explains three different components (input, process, output) in the decision process, and we use this theory to get a better understanding of how consumers may think and act when placing a purchase decision.

The input component is based on external influences that consists of two main input factors: marketing inputs and sociocultural environment. Marketing inputs consists of marketing activities of organizations that attempt to reach, inform and persuade consumers to buy and use the products. The sociocultural environment consists of non-commercial influences such as family, friends, informal sources, culture and subculture.

The process component is concerned with how consumers make decisions and consists of three stages: recognition of need, pre-purchase search and evaluation of alternatives (Schiffman et al., 2008). The consumer will use information that he or she has collected along with previously conceived perceptions to establish evaluation criteria related to desirable or wanted features of the product. All these criterias will be used to classify the different products available, and evaluate which alternatives can meet demands. The higher level of involvement the consumer has, and the stronger the importance of the purchase is, the more information the consumer seeks. If the level of importance for the needed product is high and the perceived attributes are high, the consumer would probably pay a price premium to cover the need. Purchase decision will depend on the collected information, by evaluating alternatives based on perceived value and product features, as well as previous experience, promotion availability, return policy or good terms and conditions.

The output component of the consumer decision-making model consists of two closely associated types of post-decision activity: purchase behaviour and post-purchase evaluation. The objective is to increase satisfaction for the purchase. Consumers make three types of

purchases: trial purchase (first time purchase), repeat purchase and long-term commitment purchases (Schiffman et al., 2008). The post-purchase evaluation may have important consequences for a brand. All types of purchases depend on the information collected and the consumers experience and expectations. If a product satisfies the consumer it is more likely that he or she will become a loyal customer and repurchase the product. If the product exceeds the consumer's expectations it is likely he or she will commit to purchase the product long-term. Especially for everyday purchases with low level of involvement – such as Fast-Moving Consumer Goods (FMCG) or Consumer Packaged Goods (CPG), a loyal customer is a major source of revenue for the brand when you combine all purchases made by a customer throughout an entire life time (Perreau, 2014). On the other hand, if the experience with the product was average or disappointing, the consumer is going to repeat the decision-making process during the next purchase. The consumer will, in the next decision-making process, exclude the brand from the “evoked set”. “Evoked set” or the “consideration set”, refers to the specific brands a consumer considers in making a purchase within a particular product category (Schiffman et al., 2008). Consumers will also be able to share their opinion of the brand with their family, by word-of-mouth, or on a much broader scale such as in social networks and product review websites.

### **3.3.2 Country of origin and awareness**

The academic literature on whether or not country of origin has an effect on consumer purchase evaluations and purchase intention has a history ranging over the last 40 years (Zeugner-Roth and Diamantopoulos, 2010). Country of origin was first presented in a seminal article by Schooler (1965) and the influence on consumers' purchase intention has been a great topic for decades. Consumers care more and more about which country products originate from and where they are made, and they consider these factors when evaluating the quality of products (Parkvithee and Miranda, 2012). The early research on the subject focused on documenting the presence of country of origin rather than analyzing the actual presence. In the literature, country of origin has been identified as an important cue that might be used by global marketers to influence consumers' valuation of the brand (Agrawal and Kamakura, 1999). Country of origin has an impact on the observations consumers make regarding specific products that can be extended to the purchase decision and also act as an indicator of product quality (Lee and Lee, 2009). Country of origin also controls customers' opinions about a country and overall goods that have been manufactured in that country.

Therefore, the perception consumers' gain, may have positive or negative effects on products origin from a specific country. A study conducted by Lim and Darley in 1997 revealed that countries with a weak image had a greater risk regarding consumers' willingness to purchase (Ahmed, Johnson, Ling, Fang & Hui, 2002 cited in Rezvani et al., 2012). Lou and Johnson (2005) concluded in their study that country of origin can be a predictor for customers' thoughts and preferences (Rezvani et al., 2012). Country of origin can also be seen as a brand association, the country where the product is "made in" or provides the service in such a way that consumers get specific associations (Erickson, Johansson, and Chao 1984; Hong and Wyer 1989, 1990 cited in Keller, 1993). According to Yasin et al. (2007), country of origin has been found to influence the evaluations consumers make regarding choice of products on two dimensions: perceptions of quality and perception of purchase value (Yasin et al., 2007). The effect country of origin has on consumer perceptions, effect and behavioral intentions has been documented by many researchers, based on consumer surveys and laboratory experiments. Despite the empirical evidence, Agrawal and Kamakura (1999) argue that country of origin is only one extrinsic cue among many extrinsic and intrinsic cues available to the consumer in a real purchase situation (Agrawal and Kamakura, 1999). Information regarding the country of origin of products helps to form preferences and purchase decisions. Consumers often develop stereotypical beliefs of products developed in a specific country, as well as beliefs about the attributes products developed in a specific country have (Yasin et al., 2007). Another study regarding country of origin effects on consumer product evaluations and purchase intention, found that buyers use country of origin as an indicator of a product's quality (Lee and Lee, 2009). Zeugner-Roth & Diamantopoulos (2010) found in their study that the globalization of products affects consumers' assessments according to country of origin, and makes it more complex than before. Country of origin has an effect on consumer purchase intention, and help people in the purchasing process for evaluating products. Rezvani et al., (2012) mentioned in their article that country of origin might have a positive or negative impact on peoples' intention to buy. The same researchers argue that in today's competitive market, companies have an opportunity to participate in the global market arena and the accessibility to foreign products has improved compared to earlier days when only domestic goods were available. The role of country of origin is more significant in global markets where competition is high, and the place of manufacture may influence consumers' insight on their evaluation of the quality of products. One perspective of country of origin studies is that consumers use country of origin as one indicator among several for assessing

the product, and that buyers may use the “halo effect” according to country of origin for their purchasing behavior (Rezvani et al., 2012).

According to Kotler (2011), country image is one of the first variables that researchers test regarding foreign products in international business and consumer behavior studies (Kotler, 2011). Country image has an effect on consumer’s purchase decision as image can affect negatively or positively based on previous memories and experiences about products from specific countries or products in general. Laroche et al., (2005) constructed a three-dimensional country image model in their study, explaining that country image has an extra indirect effect on product evaluation that affects consumer purchase behavior. The empirical results from their study revealed that country image and product beliefs affected product evaluations simultaneously regardless of consumers’ level of familiarity with a country's product. When a country's image includes a strong affective component, it influences product evaluation directly and on a stronger scale than product beliefs. On the other hand, when country image has a strong cognitive component, it directly influences product evaluation on a smaller scale than product belief (Laroche et al., 2005).

Initially, hypotheses regarding COO were created, but after a pre-test of the questionnaire with Spanish consumers, we found that the majority does not know the origin of salted cod. They have, however, developed a country image of Norway and Iceland as someplace cold. Purchase intention can therefore not be measured by country of origin, and we choose to measure it as country of origin awareness to see if consumers can recognize the difference between Norwegian and Icelandic salted cod and the possible effect on brand image and purchase intention. Literature on country of origin is extensive but little has been done on country of origin awareness. The literature and the finding of previous studies from 1993 to 2012 are summarized in appendix 1. Based on the theory the following hypotheses were created:

*Hypothesis 1: Country of origin awareness has a significant positive effect on brand image*

*Hypothesis 2: Country of origin awareness has a significant positive effect on purchase intention*



### 3.3.3 Customer-based brand equity, brand awareness and brand image

Stephen King once said:

*"A product is something that is made in a factory; a brand is something that is bought by a customer. A product can be copied by a competitor; a brand is unique. A product can be quickly outdated; a successful brand is timeless" (Stephen King WPP Group, London cited in Aaker, 1991 p. 1).*

Customer-based brand equity is the effect brand knowledge has on the consumer's response to marketing of the brand and is defined by Aaker (1991) as a set of brand assets and liabilities linked to a brand, its name and symbol, which add to or subtract from the value provided by a product or service to a firm and its customers (Aaker 1991). In addition, Keller (1993) argues that it is important to understand the content and structure of brand knowledge because it influences consumers' minds when thinking of a brand. The relevant dimensions that distinguish brand knowledge and affect consumer response are, according to Keller (1993), brand awareness and the favorability, strength, and uniqueness of the brand associations in the consumer memory, e.g. brand image. In 1993, Keller developed a model consisting of two main factors (brand awareness and brand image) that contributed to brand knowledge (appendix 6). Brand awareness is a measure of how well the brand is stored in a consumer's memory. The strongest form of brand awareness is brand recall, which implies that the consumers can associate the brand with a product category without further notice. In other words, remembering a brand without being reminded of it. A weaker form of brand awareness is brand recognition, which implies that the consumer recognizes a brand when he sees or hears of it. Brand image is consumer perception of the brand in terms of brand associations stored in consumer memory. A brand is said to have positive customer-based brand value if consumers react favorable to product, price, promotion or distribution of the brand. According to Lee & Lee (2009), customers with a high level of objective knowledge are less likely to rely on country of origin cues for their purchase intention and product evaluation. However, customers with a high level of subjective knowledge have a greater tendency to rely on country of origin for evaluating the quality of a product (Lee and Lee, 2009). Knowledge of a product or a brand plays a prominent role in information search behavior, and it is an important indicator of consumer behavior. People search for

information, and information processing before actually purchasing a product.

In this thesis, salted cod is considered as the brand.

### 3.3.3.1 Brand awareness

Brand awareness is the first dimension that distinguishes brand knowledge and is related to the strength of the brand node or trace in consumers memories, as reflected by consumers' ability to identify the brand under different conditions (Rossiter and Precy 1987 cited in Keller, 1993). Keller states that,

*“Brand awareness is the extent to which consumers are familiar with the qualities or image of a particular brand” (Keller et al., 1998). He defines brand awareness as being “related to the strength of the brand in the memory, reflected by consumers ability to identify various brand elements like the brand name, logo, symbol, character, packaging and slogan under different conditions.” (Keller, 1993)*

Brand awareness is created by continuous exposure, increasing familiarity and strong associations with the appropriate product category or other purchase experiences (Keller et al., 1998). Aaker describes brand awareness as the ability the consumer has to recognize and recall a brand (Aaker, 1991). Brand recognition relates to consumers' ability to confirm prior exposure to the brand when given the brand as a cue (Keller, 1993). Brand recall, on the other hand, relates to consumers' ability to retrieve the brand when given only a product category, the needs fulfilled by the category, or some other kind of probe as a cue (Keller, 1993). In other words, brand recall is the ability the customers have to remember the brand from a previous time. The importance of brand recognition or brand recall depends on the location of where the purchase decision is made. Keller suggests that brand recognition may be more important than brand recall when the purchase decision is made in the actual store (Keller, 1993).

From this we can draw similarities to country of origin effects and country of origin awareness. Country of origin awareness can influence consumers' perception and attitudes, purchase decisions and loyalty to the brands from a specific country. Based on the theory the following hypotheses are created:

*Hypothesis 3: Brand awareness has a significant positive effect on brand image*

*Hypothesis 4: Brand awareness has a significant positive effect on purchase intention*

### 3.3.3.2 Brand image

Brand image is defined as perceptions about a brand that is reflected by associations that consumer contain in their memory (Aaker, 1991).

A good reputation of a country can create effects that have consequences for their exports. A good image will enhance a country's chances of improving its market access due to the positive impact on its brand image. A country image is created by direct experience and indirect information about all of these factors. However, when a company uses the country of origin effect by explicitly stating the brand's origin in the branding process, it may be risky for the brand. In the case of an unfortunate event, customers may choose to boycott the brand due to the fact that the brand originates from a blacklisted country.

Norwegian Ministry of Foreign Affairs suggests how the rest of the world views Norway today: A beautiful country with large areas of untouched nature; a rich oil nation; or a peace facilitator that wants to make the world better (Regjeringen.no, 2013). The same ministry also claims that a clear and positive image of Norway is our most important asset when promoting Norwegian interests abroad.

*“A positive international image increases Norway's visibility on the world stage and gives us greater influence. This is important for safeguarding Norway's political interests, but it is also important for Norwegian business and industry [...] The Foreign Service is just one of many actors who play a role in shaping perceptions of Norway abroad. Put slightly differently, Norway's image is shaped by the footprint left by Norway and Norwegian actors. It is the sum of all our actions – great and small. In this way we all contribute to the impression Norway gives to the outside world [...] We want Norway to be regarded as an attractive, strong and committed partner in our interaction with the rest of the world [...] Our long-term communication efforts are based on two key dimensions of our society: Norwegian culture and our relationship with nature [...] We would like our contacts to perceive us as a resourceful, engaged and reliable partner”* (Regjeringen.no, 2013).

Brand image and brand awareness influence the perception of customers regarding the quality of a brand. Researchers have proven that country associations do lead to customer bias. Such biases are based on the image of the country in customer's minds and are often used by consumers to evaluate products. When branding products that originate from Norway, the cognitive mechanism behind the effect is country-of-origin as “made in”. It can be seen as the

indicator of product quality and signals the products overall quality as a good product and product aspects as durability and reliability. Regarding associations of a brand, country of origin itself can be seen as a brand association as it builds symbolic brand values (Keller 1993). Hence, country image can be used strategically to build a desired company or brand image. Based on the theory the following hypothesis is created:

*Hypothesis 5: Brand image has a significant positive effect on purchase intention*

### **3.3.4 Percieved price satisfaction**

Consumers' perceptions of price, quality and value are considered to be pivotal determinants of product choices and shopping behavior (Zeithaml, 1988).

How price is perceived by the consumer has a strong influence on both purchase intention and purchase satisfaction (Schiffman et al., 2008). No decision is more important than the appropriate price to charge customers. A high price may lead to a perceived high quality in the mind of the consumers, but if set too high it can also encourage consumers to look for other alternatives. Price is an observable component of the product and results in consumers purchasing or not purchasing. In the perspective of the consumer, price is what is sacrificed or given up in order to obtain a product (Zeithaml, 1988).

Costs matter in determining the right price. Companies need to set a price that is higher than the costs in order to make a profit; however, customer value is also highly important.

Consumers do not know, or care what the costs of production are. What is important is whether or not the product delivers the quality and expectations the consumer has for the price paid, the product must give value for money. Customers spend time comparing actual prices for competitive and alternative products before placing a purchase based on their perceived quality and reference price. The reference price is any price used by consumers as a basis for comparison when making a judgment of another price. A reference price can be both external and internal. The external reference price is known to the customer and is typically posted at the point of purchase. The internal reference price is a mental price used to assess an observed price. The internal reference prices can affect the perceived price over time for example by price promotions, discounts and competition amongst others. When the observed price is higher than the reference price, it can affect the purchasing decision of a customer negatively. In order to encourage a positive purchase the observable price needs to be lower or equal to the reference price (Lehmann and Winer, 2005). According to Aaker (1991), one

can charge a price premium if the consumers see quality of a product as high. This can increase profitability of a company, which can be used to improve the product or the company. In competitive markets, a price premium might enhance the perceived quality and a competitive price may have a great impact on consumers' willingness to buy and create value for money (Aaker, 1991). The value added can result in a higher customer base and loyalty (Aaker, 1991).

### **3.3.5 Perceived Quality**

Perceived quality is the customer's perception of the quality the product or service embodies (Aaker 1991), and the opinion that good quality is a reason to make a purchase. The perceived quality of a product will directly influence purchase decisions and brand loyalty, especially when a customer is not able to conduct a detailed analysis. It can also support a premium price for a product, which, in turn, can create gross margins that can be reinvested in brand equity. Perceived quality provides a reason-to-buy, a point of differentiation, channel interest and a basis from brand extension which all can be seen as a competitive advantage (Aaker, 1991). According to studies using data from thousands of companies in the PIMS (Profit Impact of Market Strategy) database, perceived quality improves prices, market share and return on investment (Aaker, 1991). The quality of a product or service is often judged by consumers on the basis of a variety of information cues they associate with the product. Such cues can be either extrinsic or intrinsic to the product or service and, either alone or combined, they provide the basis for perceptions and service quality (Schiffman et al., 2008).

Intrinsic cues concern physical characteristics of the product, such as size, color, flavor and taste. Consumers sometimes use these physical characteristics to judge the product quality since they like to believe they base their product evaluation on intrinsic cues since it allows them to justify the product decision as being based on "rational" or "objective" choices. More often, however, extrinsic cues will be used to judge quality. A previous study found that very often consumers are not able to differentiate between various cola drinks and that they instead base their preferences on intrinsic cues such as price, package, advertising and even pressure (Schiffman et al., 2008). This supports the assumption that consumers lacking



actual experiences with a product often evaluate quality on the basis of external cues such as price, brand image, retail store image, manufacturer's image or country of origin.

## **4. RESEARCH METHODOLOGY**

The combined use of qualitative and quantitative methods is a common approach according to Winchester and Rofe (2000). It helps the researcher to back up a set of findings from one data collection method with another method of data collection (Palgrave.com).

We chose the combined approach in order to obtain a broader picture of the market by combining consumers with different needs and perceptions of the product. In-depth interviews (qualitative) were conducted with sellers from markets and supermarkets, chefs, consumers, distributors and restaurant owners. We also conducted a survey (quantitative) to gather statistical data about consumers of salted cod as a supplementary discovery for the qualitative research.

### **4.1 Qualitative analysis**

A qualitative research strategy builds on the beliefs that the social world is constructed through individual actions and that social phenomenon is not stable, but in continuous change. That social phenomenon shows large enough stability so that measures and quantitative descriptions are meaningful (Ringdal, 2013). Qualitative research strategy is inductive, meaning that one try to seek to supply strong evidence of (not absolute proof of) the truth of the conclusion (Okasha, 2002).

#### **4.1.1 Interview methods**

In-depth interviews enable a face-to-face discussion with respondents, and are a common approach for data collection. The advantage of this is that discharge of the interviews can happen quickly, and irrelevant information can be eliminated immediately. We created a simple interview guide that helped us to maintain the structure of the talks and to reveal the

desired information with regards to the research questions. A template in English is provided in appendix 2. We chose to write down, by hand, all interviews since most interviews took place in Spanish and we relied on the notes to render the findings as accurately as possible.

## **4.2 Quantitative analysis**

Quantitative research is theory based, meaning that the researcher ask questions and diverts hypotheses from one or several statements and theoretical perspectives which are relevant for the study purpose. If all premises are true, the conclusion reached is necessarily true (Okasha, 2002). Quantitative methods fill the data matrix of numbers that are being analyzed using statistical analysis techniques (Ringdal, 2013).

### **4.2.1 Pre-test Cantabria**

A preliminary survey was carried out to pre-test the questionnaire before it was finalized in Santander. This led to several changes and our initial objective to compare purchase intention of Norwegian and Icelandic salted cod was discarded, as it was evident that knowledge of Norwegian salted cod was weak. Based on statements and opinions from consumers, the questionnaire was shortened and simplified with the help of J.Fernández-Polanco.

### **4.2.2 Construction of questionnaire**

Questionnaires in interviews are a common approach in both quantitative and qualitative methods and are a useful tool for collecting data on humans, social interactions and opinions (McGuirk and O'Neill, 2005). Questionnaires are difficult to design. The response rate is nearly always going to be a problem unless you have ways of making people complete them and hand them in accurately. As with interviews, one can decide to use closed or open questions, as well as multiple choice questions from which to choose the statement which most closely describes their response to a statement or item (Palgrave.com).

Our questionnaire contained 35 questions, including background questions on age, gender, income and consumption of salted cod. We wished to keep the number of questions as low as possible, but at the same time we needed enough questions to obtain adequate measurements

of the dimensions. Diamantopoulos et al. (2011) identified a total of 24 intrinsic and extrinsic attributes, capturing different elements of the marketing mix. Our study used most of them to capture the different dimensions in our model. Respondents were asked to assess the attributes separately at a product category and brand level, thus providing assessment on brand image. All attributes were measured on a seven-point likert scale (1= not important/very poor, 7= very important/very good).

Each of the dimensions is measured by three questions, with the exception of distribution and brand awareness, which are measured by two additional questions. In addition, according to recommendations in methodological literature consumers purchase intention of salted cod was measured by a single item (Diamantopoulos et al., 2011). Respondents were asked to indicate their intention to buy salted cod using a seven-point scale (1=very low, 7= very high). According to Diamantopoulos (2011), Rossiter (2002) states that single-item measures are definitely valid for measuring concrete attributes such as purchase intention. We recognize the fact that three questions is not at the recommended level since there should be a minimum of four questions for each dimension. Nevertheless, we chose to do so in order to limit the size of the questionnaire so that it was manageable for respondents.

We created the survey online, using the program [www.esurveyspro.com](http://www.esurveyspro.com), which was accessible between 10 March 2015 and 15 April 2015. In addition, we made 150 copies of the questionnaire, which was handed out to respondents (appendix 3a and 3b). It proved difficult to obtain answers online, and our main data collection method is therefore face-to-face. This also reduces the number of errors and misinterpretation of questions. In this period, we accumulated 83 respondents, whereof 81 completed the questionnaire. All respondents were Spanish citizens. We had an initial goal of collecting at least 150 respondents, 50 from each region, but we discovered that it was difficult to find respondents. However, even with a relatively small sample of 81 respondents we can extract data that may or may not support our findings from the in-depth interviews. By comparing qualitative and quantitative research methods we get a better understanding and a broader perspective of Norwegian salted cod in the Spanish market.

### 4.2.3 Measurement of variables

Various questions, which make up the different variables, were presented. The study had two dependent variables: purchase intention and brand image. The independent variables are country of origin awareness and brand awareness, in addition to variables that we would like to examine based on previous research and findings: product characteristics, price, quality and distribution. Brand image is seen as a dependent variable in the first regression testing the first two hypotheses, while it is a dependent variable for the last regression testing the last hypothesis. In addition, we have some control variables, which consist of gender, age, and size of household, region, income level, preferences and frequencies. A seven point Likert scale is used as measurement in this survey. This is a very common rating scale, which requires respondents to choose a degree of agreement or disagreement about the object or statement presented.

#### *Purchase intention*

Crosnos defined consumers' purchase intention as the probability that customers in a certain purchasing situation choose a certain brand of product category (Crosno et al., 2009 cited in Ghalandari and Norouzi, 2012). Wang and Yang (2010) defined the purchase intention as a physiological action or the decision to act that shows an individual's behavior according to the product (Wang and Yang, 2010). The attribute consistent with the dependent variable purchase intention is:

VI7: *I intend to buy salted cod soon*

### ***Brand image***

Brand image is defined as perceptions about a brand that are reflected by associations consumers contain in their memory (Keller, 1993). In this study the brand is the product salted cod in general, due to the lack of knowledge among Spanish consumers regarding country of origin and brand. The attributes that are consistent with the independent variable of brand image are:

V34: *I believe salted cod has a good reputation*

V35: *My friends/ family believes salted cod has a good reputation*

V36: *Society in general believe salted cod has a good reputation*

### ***Brand awareness***

Brand awareness is the first dimension that distinguishes brand knowledge and is related to the strength of the brand node or trace in consumers' memories, as reflected by consumers' ability to identify the brand under different conditions (Rossiter and Precy 1987 cited in Keller, 1993). Aaker stated that brand awareness is the customers' ability to recognize and recall a brand, under different conditions and time pressure (Aaker, 1991). The attributes consistent with the independent variable brand awareness are:

V32: *I am well aware of salted cod*

V33: *I have good knowledge of products salted cod products*

### ***Country of origin awareness***

Consumers care more and more about which country products originate from and where they are made, and they consider these factors when evaluating the quality of products (Parkvithee and Miranda, 2012). Country of origin has been found to influence the evaluations that consumers make regarding choice of products on two dimensions: perceptions of quality and perception of purchase value (Yasin et al., 2007). Information regarding the country of origin of products helps to form preferences and purchase decisions. Consumers often develop stereotypical beliefs about products developed in a specific country as well as beliefs about



the attributes products developed in a specific country have. Research has shown that Spanish consumers have little knowledge of the origin of salted cod, however, some can recognize the origin between countries. This indicates that one of our variables fit in a regression analysis as the independent variable for country of origin awareness:

*V18: Do you recognize the difference between salted cod from Norway and Iceland?*

### ***Price, quality, distribution, product***

Scholars have concluded that external features such as product characteristics and perception of quality have an effect on purchase intention and country image (Laroche et al., 2005). Other scholars have concluded that country image have a direct effect on the perception about product quality and product characteristics (Laroche et al., 2005). The attributes that are consistent with the independent variable of product, price, quality and distribution are:

### **Product**

*V21: The cod is white, thick and appealing*

*V22: I believe cod is a fresh and healthy product, without additives*

*VI2: How important is flavor to you?*

*VI3: How important is color to you?*

*VI4: How important is thickness to you?*

*VI6: How important is conservation to you?*

*V2: How important is the color of the salted cod for your purchase?*

*V3: How important is the thickness of the salted cod for your purchase?*

*V4: How important is the brand of the salted cod for your purchase?*

*V5: How important is the freshness of the salted cod for your purchase?*

### **Quality**

*V24: In my opinion, cod is of high quality*

*V25: In my opinion, the producers always deliver high quality products*

*V26: In my opinion, cod is of better quality than the alternatives*

## **Distribution**

Three items measures distribution:

*V30: Cod is easy to find in stores*

*V31: The vendors give good information and recommend salted cod*

*V23: I can choose from a wide range of salted cod*

## **Price**

Three items measures price:

*V27: Salted cod is good value for money*

*V28: The quality is very good compared to the price*

*V29: I would choose cod regardless of price*

## **Control variables**

*Gender, age, and size of household*

*Region*

*Income level*

## **Preferences and frequencies variables**

*Where do you most frequently consume salted cod?*

*How often do you buy salted cod?*

*Where do you buy salted cod?*

*What is your favorite product of salted cod?*

### **4.2.4 The regions of interest**

Our initial plan was to collect respondents through a telephone survey; in addition we would conduct a field study in Spain regarding Spanish consumers and their knowledge of country

of origin. Due to limited funds, the phone survey was altered in favor of a survey targeting random consumers in Spain conducted by us.

The field study was conducted in Spain in March 2015. We began our journey in Santander, before going to Valencia, and ultimately to Barcelona. During the same period senior advisor Kari Fjørtoft at Møreforskning conducted a similar study in Spain and we attended much of her program in Santander, which was of great value to us.

Due to the scale of the thesis and the limited time available, it was unrealistic to conduct fieldwork across Spain. To be able to uncover potential differences across Spain and to cover large part of the country, we decided to conduct research in different regions. J. Fernández-Polanco recommended the regions Cantabria and Comunidad Valenciana, and Cataluña was selected due to the fact that Barcelona is well known for consumption and a preference of white and thick cod from Iceland. By focusing on these three different regions, we hope to identify whether there are any differences or similarities between them. A summary of findings is provided in table 4.4.

#### 4.2.4.1 Cantabria

Cantabria located in northern Spain, at the Atlantic coast. Galicia, which is the most traditional fishery region of Spain, is close with Asturias in between. Neighboring region to the east is the Basque Country, which means that Cantabria is situated between the two main fisheries regions in Spain. Cantabria has a population of 592 542 which is 1.27% of the total population in Spain (total population 46,815,916 in 2011) (Instituto Nacional de Estadística, 2014).

A previous study conducted in the regions of Galicia, Cantabria and Asturias looked closer at the salted fish market in these regions through in-depth interviews with suppliers and producers. They found that Norway has a good position in the Galician market even though some producers preferred Icelandic or Faroese salted fish. Even so, they found no predominance of country of origin in the importation of salt fish to Galicia. Their interviewees gave responses such as; "Faroese salted codfish comes very well done and cured and it is firmer, whiter and with higher quality [...] Norwegian fish is very wet now and the fish do not wait so much time into salt [...] Icelandic fish is also good because it is very white." (Seguí and Alba, 2011 p. 88) "Norway is cheaper than Iceland [...] However, I prefer Icelandic fish for traditional uses" The same interviewee preferred products from different

countries, as the Norwegian wet fish (bacalao verde) is better than competitors, and Icelandic dried salted fish is best. (Seguí and Alba, 2011 p. 89).

### *Consumption*

In table 4.1, the importation of salted cod in the regions Galicia, Asturias and Cantabria is aggregated in tons. In these regions, importation of fresh and dried salted cod has increased. In this period, we can see that frozen codfish decreased substantially, while salted without drying or smoke, also in brine has maintained its position as the preferred category (Seguí and Alba, 2011).

**Table 4.1: Salted codfish importation in Cantabria and Basque region (in tons)**

Year	Fresh	Frozen (1)	Chilled and fresh filets (1)	Frozen filets (1)	Dried salted	Salted without drying or smoke, also in brine
2000	982.40	466.53	882	66.11	250.32	4199.16
2001	877	981.30	707.58	173.25	281.39	4890.70
2002	986.24	374.85	502.15	145.89	387.64	3786.07
2003	1480.72	-	11.768.77	1408	3,023	7337.36
2004	1531.74	-	3109.98	1711	473	5440.79
2005	1435.47	-	4764.69	1911	399.41	5888.26
2006	1278.92	-	2566.53	2310	470.84	7541.89
2007	1049.81	-	1327.57	-	618.04	8971.56
2008	947.77	1072	-	-	453.42	6830.25
2009*	678.53	81.37	-	-	327.20	4677

Source: datacomex.comercio.es cited in Seguí and Alba, 2011

#### 4.2.4.2 Comunidad Valenciana

Comunidad Valenciana is situated on the southeastern coast of Spain and Valencia is the third largest city in Spain behind Madrid and Barcelona. Comunidad Valenciana has a population of 5 009 93 which is 10.7% of the total population in Spain (total population 46,815,916 in 2011) (Instituto Nacional de Estadística, 2014).

Salt-cured cod, wet or dried, has been an important economic and cultural product in Spain, especially in the south-east coast, which has been considered a "salted fish product area" for centuries. The demand for salted cod is still driven by a cultural desire for traditional dishes (Gallart Jornet et al., 2005). Comunidad Valenciana and neighboring region Murcia is called

the Levantes. These regions have the longest tradition for both consumption and production of salted fish.

Unlike other regions in Spain, the structure of the companies offering salted fish are more traditional, small family firms with the exception of Pescafina Bacalao SA which is the largest salt-fish company in Valencia. In addition, Pescafina focuses on import and production of salted cod while the rest of the companies consider themselves to be salazones, which means that they offer many species and that cod just another salted fish. In this region, salted fish is not synonymous with codfish; it may be for example tuna, ling, octopus, anchovies, sardines and more. These species were traditionally regarded as cheap sources of protein, but which today are considered delicacies.

The coastal area around and including Valencia and Alicante is known to have the highest consumption of different salted fish products in Spain (Gallart Jornet et al., 2005). Gallart-Jornet et al. conducted a survey in the most important markets in Valencia and Alicante which showed that in these regions there is a preference for domestically caught cod, as well as a shared market for Norwegian and Icelandic cod. Conducted in the same manner as in Barcelona, owners and employees were interviewed. They were asked to rank domestic, Icelandic and Norwegian cod. In this region respondents had various opinions on the matter, but the conclusion of the findings was that in this region, with a more diverse consumption pattern, cod from different COO were preferred for different uses. Domestic and Norwegian cod were found to be the preferred choice for consumers purchasing traditional bacalao, whereas Icelandic cod was the preferred choice in the restaurant segment due to superior quality (Gallart Jornet et al., 2005). Gallart-Jornet et al suggests that it is necessary for Norwegian producers to deliver improved and consistent quality as a strategy to improve their position in the southeast Spain.

A survey conducted in the most important traditional markets in Alicante and Valencia revealed a preference for "bacalao nacional", the domestically caught cod, and a shared market for Icelandic and Norwegian salted cod. People working at different stalls were interviewed and all of them were asked to rank the 3 origins (domestic, Norwegian, and Icelandic). One respondent said the domestically caught and produced bacalao was the best for handling and cooking because of its taste and that it was not as thick. The Icelandic was perceived to be better than the Norwegian salted cod because the Icelandic waters are colder and give a spongy product and loose flesh. One of the respondents emphasized that most of the whole bacalao were sold with the labels of origin (National, Norwegian and Icelandic).

But from her point of view, the origin had no meaning after the bacalao had been transformed (desalted or partially desalted and dried and cut to various products) in the stalls and other production facilities.

### *Consumption*

Table 4.2 show data on importation for this region and is presented as stated in Seguí and Alba (2011) for different categories. Fresh codfish has increased in the period while other products fluctuate throughout the period. Factors that influence the fluctuations are the changing price of codfish, which affects demand. The category “salted without drying or smoke, also in brine”, which was the most important in terms of volume, is also called “Bacalao Verde”. Bacalao Verde is the basic product from which salted fish is produced in Spain, it is half-cured salted fish, which is salted again, sometimes also dried, and then cut into pieces for final consumption.

**Table 4.2: Salted codfish importation in the Spanish Levante (in tons)**

<b>Year</b>	<b>Fresh</b>	<b>Frozen (1)</b>	<b>Chilled and fresh filets (1)</b>	<b>Frozen filets (1)</b>	<b>Dried salted</b>	<b>Salted without drying or smoke, also in brine</b>
<b>2000</b>	75.23	43.04	126.10	-	367.31	1102.00
<b>2001</b>	126.00	34.15	64.78	141.04	1310.81	3575.24
<b>2002</b>	262.60	54.89	59.39	35.83	59.39	4359.00
<b>2003</b>	501.34	278.91	47.55	231.78	12.03	3195.84
<b>2004</b>	408.28	64.00	11.14	106.39	97.89	3884.67
<b>2005</b>	482.77	5.86	19.55	153.62	2.55	3721.53
<b>2006</b>	423.18	19.18	3.40	420.93	18.26	3721.41
<b>2007</b>	262.65	200.75	-	-	25.88	3400.00
<b>2008</b>	213.37	117.42	-	-	41.38	2464.00
<b>2009*</b>	271.37	0.14	-	-	43.84	2530.00

Source: datacomex.comercio.es cited in Seguí and Alba, 2011



#### 4.2.4.3 Cataluña (Barcelona)

Cataluña is considered to be an important market with regards to volume of consumption and purchasing power (Seguí and Alba, 2011). It is an important region in Spain, both culturally and economically, and Barcelona is the second largest city in Spain. The population is 7 519 843 which is 16.06% of the total population in Spain (total population 46,815,916 in 2011) (Instituto Nacional de Estadística, 2014) In Cataluña there is a long tradition of selling soaked, salted cod without skin or bones. This has changed the regional conventions, with the important features being white color, thickness or big loins (Gallart Jornet et al., 2005). Based on this, importers and manufacturers of salted codfish rely mainly on Icelandic producers since they are able to meet the exact needs of Catalanian retailers and consumers and there is good connection between the manufactures.

A previous survey conducted in two of the biggest markets in Barcelona uncovered an Icelandic domination in this part of Spain (Gallart Jornet et al., 2005). Thirteen employees and owners were interviewed, of which twelve sold exclusively Icelandic cod. According to the respondents, the reason for the dominance of Icelandic cod was the catch and process method and also that the Icelandic producers have created a very good relationship with Spanish manufacturers and importers. Icelandic fish was fresher and without blood spots, which meant that compared to Norwegian fish, the Icelandic products were firmer, whiter and juicier. In addition, because of the relations, Icelandic producers are believed to be able to meet market requirements far better than Norwegian producers.

#### *Consumption*

Tables 4.3 show data on importation for the Cataluña region. Fish has become increasingly more popular over the years and this is also the case for frozen cod as shown in the following table. However, the indisputable leader is salted without drying or smoke, also in brine, which is used as raw material for the preparation of other products.

**Table 4.3 Salted codfish importation**

<b>Year</b>	<b>Fresh</b> (except fresh filets)	<b>Frozen</b>	<b>Chilled and fresh filets</b>	<b>Frozen filets</b> (Including gadus morhua, gadus ogac, and gadus macrocephalus)	<b>Dried salted</b>	<b>Salted without drying or smoke, also in brine</b>
<b>2000</b>	255.04	65.82	-	1.27	27.02	160.94
<b>2001</b>	224.09	37.37	-	0.66	0.25	180.11
<b>2002</b>	141.73	8.85	-	0.13	22.77	109.98
<b>2003</b>	427.91	16.08	-	0.09	1.02	410.72
<b>2004</b>	161.4	19.29	-	0.73	1.50	139.88
<b>2005</b>	376.5	16.95	-	0.01	6.97	325.57
<b>2006</b>	200.6	19.58	-	0.31	-	180.70
<b>2007</b>	575.33	11.36	306.27	-	0.05	257.64
<b>2008</b>	571.51	22.84	123.55	-	6.05	419.07
<b>2009</b>	403.89	18.15	24.22	-	2.30	359.07
<b>2010</b>	329.78	17.82	0.14	-	63.05	248.76

Source: (datacomex.comercio.es cited in Seguí and Alba, 2011)

#### 4.2.5 Informants

The informants in this thesis come from Santander in Cantabria, Bilbao in the Basque Country, Valencia, Castellón de la Plana and Burriana in Comunidad Valenciana and from Barcelona in Catalonia. The main areas are marked as red triangles, while the Basque Country, Castellón de la Plana and Burriana are marked with stars in figure 4.1.

J. Fernández-Polanco arranged meetings with informants in Santander, while J. Benito López del Ramo did the same in Castellón de la Plana and Burriana. We wanted informants who could relate to salted cod and our sample consists of: sellers from the markets, fishmongers as well as traders, consumers, chefs, store managers, restaurants and an attorney specialized in fishery. A complete overview of informants can be seen in table 4.4. We consider sellers, traders and store managers as a link between consumers and producers and this group holds important knowledge about what consumers want and prefer. This gave us two informant groups: the distribution chain and consumers.



FIGURE 4.1: MAP OVER SPAIN. (FIELD AREAS MARKED WITH RED ) (MATHIAS-S, 2007)

**Table 4.4: Overview of informants**

Cantabria	Comunidad Valenciana	Cataluña	Exporters
<p>Supermarkets:</p> <ul style="list-style-type: none"> <li>● Lupo</li> <li>● El corte Inglés</li> <li>● BM</li> <li>● Carrefour</li> <li>● Elárbol supermercados</li> <li>● Mercadona</li> </ul>	<p>Supermarkets:</p> <ul style="list-style-type: none"> <li>● Consum</li> <li>● El corte Inglés</li> <li>● Carrefour</li> <li>● Mercadona</li> </ul>	<p>Supermarkets:</p> <ul style="list-style-type: none"> <li>● El corte Inglés</li> <li>● Carrefour</li> <li>● Consum</li> <li>● Eroski</li> <li>● Spar</li> <li>● Dia</li> </ul>	<ul style="list-style-type: none"> <li>● Alexander Von Løwensprung, Molja</li> <li>● Tor Krane, Unicot</li> <li>● Carl Johan Pettersen</li> </ul>
<p>Interview:</p> <ul style="list-style-type: none"> <li>● Mercado</li> <li>● Puesto de Bacalao</li> <li>● Aldica Selección (distributor)</li> <li>● La tienda del Bacalau</li> <li>● 5 consumers</li> <li>● Viva la pepé 1814</li> <li>● Guillermo del Rey</li> <li>● Chef</li> <li>● Pil Pil Saltsa</li> </ul>	<p>Interview:</p> <ul style="list-style-type: none"> <li>● Mercado Central</li> <li>● Salazon Arte</li> <li>● Imma Penalver</li> <li>● Colon market</li> <li>● Martín y Mary</li> <li>● Mercado Municipal Burriana</li> <li>● Mercado Ruzafa</li> <li>● Tresin y Maria Carmen</li> <li>● Gomez</li> <li>● Mercado Catellòn</li> <li>● Aceitunas Manolo</li> <li>● José Benito López del Ramo</li> </ul>	<p>Interview:</p> <ul style="list-style-type: none"> <li>● Mercat Sant Antoni</li> <li>● La Boqueria</li> <li>● Mercado Barceloneta</li> <li>● Mercat de Santa Caterina</li> <li>● La casa del Bacalao</li> <li>● Cristina Palanca</li> </ul>	

#### 4.2.6 Data collection process

Before departure for Spain, we did research on where to find local food markets and supermarkets in the different regions. Spain has a large number of food markets and we had to choose some of them since our limited time in each region would not cover all.

Arrangements with informants were not made before arriving Spain. We did send several e-mails to multiple Universities in the regions of interest; unfortunately this did not result in any respondents. In Valencia, the informants and respondents were harder to find. At the time of the data collection, Las Fallas (a traditional celebration held in commemoration of Saint Joseph) was celebrated and very few respondents neither wished nor had time to

complete a questionnaire. In Barcelona we had no local contact, and we focused on traditional markets, stores and supermarkets. In addition, the markets and stores in Valencia and Barcelona were much busier and visited by many tourists, making it difficult for many sellers to take the time to be interviewed.

#### **4.2.7 Validity and reliability**

An important part of the research process is the discussion of the collected data and its validity for the research question. Litwin (1995) defines reliability as the degree of stability exhibited when a measurement is repeated under identical conditions (Fink and Litwin, 1995). Lack of reliability may arise from divergences between observers or instruments of measurement or instability of the attitude being measured. Validity in research shows how well a survey measures what it sets out to measure. The purpose of validity and reliability is to see if the measures are stable enough to use as a scale. It is possible to merge the answers to all questions within the same factor if suitable. It is not possible to measure the validity of empirical findings and it is therefore important to support empirical findings and provide good arguments for the research. To confirm the reliability, researchers can compare data from own research with other research that contains the same theme. To conclude that the validity is high, the reliability needs to be high as well (Hair et al., 2010). The quality of the quantitative research is lower than the quality of the qualitative research due to the low number of respondents in the sample. To get a large enough sample size was not possible for us without large costs, so many of our respondents asked their family and friends to answer the questionnaire. This made the sample not completely random and in addition, the respondents were discussing the questionnaire amongst each other. Due to the small sample, the external validity is not so good for this study. It is, however, a challenge when using a survey with given answers to state whether or not the questions and answers measure the actual purpose that we want.

#### **4.2.8 Data analysis techniques**

This section will provide descriptions of the different statistical analyses applied. Due to the fact that the sample size of the quantitative survey was smaller than expected, we base our thesis on the qualitative findings. We will use the results from the quantitative analysis to confirm and compare to the qualitative findings. The statistical analysis will be based on factor analysis, multiple regression analysis and variance analysis, with the use of IBM SPSS Statistics. Nonetheless, it will provide important information about the collected data and for accepting or rejecting suggested hypotheses. Data analyzes is done in four steps: (1) descriptive statistics, (2) data reduction by factor analysis, (3) testing hypothesis by multiple regressions, (4) variance analysis.

## **5. RESULTS**

This chapter will present the analysis and results of the qualitative and quantitative research. The chapter is divided into two parts: qualitative findings and quantitative results. The qualitative results are divided into four parts; Cantabria, the Basque Country, Comunidad Valenciana and Cataluña.

The quantitative results are divided into two parts: (1) Cantabria and the Basque Country, (2) Comunidad Valenciana and Cataluña.

### **5.1 Qualitative results**

In total, 31 in-depth interviews were conducted in three regions. Participants were selected due to their knowledge about the market of salted cod in Spain and we chose traditional markets, specialized stores and grocery stores as our focus areas. We wanted to focus our effort on people who had an appropriate background, experience and insight regarding the Spanish market in order to obtain relevant information. Our initial interview questions had to be altered since our original questions proved to be inadequate to examine the differences in the Spanish market. The questions in our interviews focused on topics regarding COO, price, quality, preferences and consumption.



### 5.1.1 Cantabria and the Basque Country

*"Icelandic salted cod is best, even though the fish is caught in the same water and in the same temperature. This is because they work more with the fish. Con “más cariño(IC1)”*

**Table 5.1 Informants from Cantabria**

IC1: Market stall, Guillermo del Rey	IC2: Market stall, Puesto de Bacalao	IC3: La tienda de Bacalao
IC 4-6: Aldica Seleccion	IC7: Female consumer #1	IC8: Female consumer #2
IC9: Female consumer #3	IC10: Chef #1	IC11: Chef #2
IC12: Female consumer #12	IC13: Male consumer	IC14: El Corte Inglés #1, Bilbao
IC15: El Corte Inglés #2, Bilbao	IC16: Pil Pil Saltsa, Casco Viejo, Bilbao	

In Cantabria, 13 interviews were conducted with vendors and consumers in Mercado de la Esperanza, pescaderías and other locations. We found a very low presence of Norwegian salted cod in the area. We found one store offering clipfish, one offering bacalao al punto de sal and one restaurant offering Bacalao Pil Pil made with Norwegian salted cod. Norway is known for skrei and salmon, while the salted cod is mainly Icelandic. Iceland is preferred by consumers in this region due to the color, texture, and perceived quality.

The interviews were conducted in March during skrei-season and the presence of Norwegian skrei was very high. The branding was good, and the skrei was clearly labeled Norwegian. In season, around semana santa (Easter), skrei is said to be the preferred fish among consumers. Norwegian skrei has a good reputation among both consumers and sellers and the marketing campaign launched by the Norwegian Seafood council has been very successful. The Norwegian salted and dried cod sold in La Casa del Bacalao is a popular product. It is mostly sold to the elder generation and especially before Easter. The salted cod offered is of Icelandic origin and she sells to families, singles and young people as well as the older generation.

According to IC1, salted cod was only served at home before the 1980's, while after the 80's restaurants started to offer salted cod to customers. One of the reasons for this is that it can be prepared in many ways and that it is more popular than fresh fish since it does not need to be sold the same day. In the 90's, salted cod had become very popular and perhaps that was the golden age for salted cod. The economic crisis hit Spain in 2008. This had a large impact on consumption habits, price and price sensitivity. Many restaurants changed from the more expensive salted cod to frozen cod or other substitutes of lower quality, but maintained the prices. The question is whether or not restaurants will change back to salted cod? Many customers do not recognize the difference as it all comes down to preparation and the skills of the chef.

"The market is adapting itself and the popularity for dining in restaurants is increasing again (IC2)",

*"Previously, salted cod was a meal for the poor. Now, it is almost a luxury product (IC3)".* This statement was also supported by IC11 and IC9. Salted cod is consumed more by high income segments since it is relatively expensive. The price of cod is increasing in Spain and prices have become more important after the financial crisis. Following the crisis, some consumers have changed their way of living from a high income segment to a middle income segments. The wages in Spain have decreased and many consumers place price over quality. IC4 could tell that the high income segment prefers top quality salted cod while the low income segment prefer frozen or en punto de sal (En punto de sal is cod that is injected with salt and then frozen directly). An effect of the crisis is that people eat more salted cod at home because of the lower price, and the quality of the salted cod consumed at home is often higher than that consumed in restaurants.

The different distributors, stores and restaurants selling cod are competing on prices and the price is different from place to place. The Icelandic salted cod is more expensive than Norwegian and Faroese salted cod, yet most consumers and sellers prefer it.

One of our participants estimates that there is a 60/40 distribution between older and younger purchasers. He also believes that the market has been more or less the same the last ten years. Another participant supports the allegation that younger people are purchasing and consuming salted cod also. *"There is renewal in the market (IC2)."* Sales increase around Christmas and two of the reasons are that the price of fresh fish increases around this time

and that it is practical since dishes with salted cod stay good for several days. Salted cod is a meal for both everyday and celebrations. *"Cod as a specie has no seasonality (IC11) "*. Salted cod is best in winter since the fish is fatter and IC10 prefers Norwegian salted cod for making Bacalao Pil Pil because of the high fat content. IC4 believes that the texture is different. Norwegian salted cod is firmer and tastes like shellfish, while cod from Iceland is whiter, which is very important for consumers. IC1 believes that Norwegian salted cod is good, but that Icelandic is better. IC1 stated that there are differences between Icelandic and Norwegian salted cod and the choice of origin depends on what you want to prepare. IC11 has worked with cod for over 36 years, since the age of 14. He prefers fish over meat and fish originating from Iceland and Portugal, but he is also aware of Norway and the Faroe Islands as countries of origin of salted cod.



FIGURE 5.1: MARKET STALL, CANTABRIA. (FJØRTOFT, 2015)

*"I used to sell clipfish, but today I only sell salted cod. It is easier to prepare (IC2)"* IC2 does not have knowledge about Norwegian salted cod, only skrei and salmon. She is also optimistic with regards to the future of salted cod. There is always competition in this industry and it is important to gain loyal customers.

Consumers are not asking about COO. The local knows that the fish is imported but they are indifferent. Some even think that it is originating from Bilbao. There is a relation of trust between consumers and sellers that is far more important than origin.

*"White meat is perceived to be good, and yellow is bad quality (IC6)"*.

IC4 did not know about the phosphate in the Icelandic products, nor did anyone else. He also believes that origin is in fact important.

Consumers are not aware of the origin, neither are some of the sellers. Consumers recognize that salted cod is from somewhere cold and the colder the water is, the thicker and fatter the fish meat is.

Due to health recommendations, consumers have become more aware of salt content in food. This also affects salted cod. Today, it has become more common to purchase desalted cod. It is a step closer to a finished product, it takes less time to prepare and many younger consumers choose this option.

The largest wholesalers desalt the product themselves or representatives do it. There are regulations prohibiting shops and restaurants from desalting themselves. However, the market in Santander may desalt the cod themselves because it is not affected by inspections and it is owned by the community. In addition, supermarkets offer a wide range of desalted products. *“Salado por costumbre, y desalado por convenience (IC5)”*

IC7, IC8 and IC9 are examples of household consumers. They do not purchase salted cod in supermarkets, mainly because of image and knowledge about the products. IC7 and IC8 prefer to purchase cod in La Tienda de Bacalao or the traditional fish market because of their relationship with the sellers, the quality of service and loyalty to the sellers. They also know they get good quality salted cod and recently they have tried to buy desalted cod because of its time savings feature. IC9 purchases solely from IC2 because of the relationship of trust and the quality. None of the interviewees knew about origin, only that Norway is connected with someplace cold and Vikings. They do not care about branding and trust their suppliers to provide them with high quality products. *"Fish is fish (IC8)"*

## **Bilbao**

Salted cod is very popular in Bilbao and the Basque Country. Again, skrei and salmon are clearly originating from Norway while the majority of salted cod is Icelandic. La Balinesa is a very popular brand offering several product types with Icelandic origin. The famous Spanish TV chef Karlos Arguiñano has used La Balinesa products on his show and it has also been promoted on the radio, on the show Onda Zero with Carlos Herrera (IC14). In addition,

this is a brand that is heavily promoted in several large grocery stores across Spain with leaflets, distinct advertising and branded coolers.

In this region, sales are steady throughout the year, with an increase around holidays such as Easter and Christmas. The salted cod is mainly originating from Iceland, but some products are labeled that they are from the Faroe Islands, Russia or FAO 27. Most sellers have a very good selection and good knowledge of the different products, however there is some difference in the knowledge of sellers. Some say that salted cod looks and tastes the same regardless of origin while others are much more aware of origin and the differences between the salted cod. *"Bacalao is bacalao (IC16)."* Quality is more important than origin and customers do not care about the origin.

### 5.1.2 Comunidad Valenciana

*"Bacalao is Bacalao" IV1; "It is still most common for women to prepare food and the most common place of consumption is at home (IV8).*

**Table 5.2: Informants from Comunidad Valenciana**

IV1/ IV2: Carrefour, Castellón	IV3: Market stall #1 Mercado Central Castellón	IV4: Market stall #2 Mercado Central Castellón
IV5: Market stall #1 Mercado Municipal Burriana	IV6: Market stall #2 Mercado Municipal Burriana	IV7: Market stall #1 Mercado Central Valencia
IV8: Mary and Martin, Mercado Colon, Valencia	IV9: Tresin y Maria Carmen, Mercado Ruzafa	IV10: Gomez, Mercado Ruzafa

10 interviews were collected in this region which has long traditions of salted fish consumption. Salted cod does not have a special place in people's minds; it is just another salted fish. In stores and markets the presence of Icelandic salted cod is dominating, but we were able to find some market stalls and a supermarket offering Norwegian salted cod. Lomos is perceived to be the best cut of the cod and color and quality are more important than origin. Consumers in Comunitat Valenciana have a preference for yellow fish meat because this reminds them of the traditional cod, Bacalao tipo inglés. In Mercado Central in

Castellón, Mercado Municipal in Burriana and Mercado Ruzafa in Valencia, consumers have the choice of Icelandic salted cod, Norwegian salted cod and Bacalao Nacional. The preference varies. Some consumers prefer bacalao nacional, some prefer Norwegian and most prefer Icelandic salted cod. Skrei is very popular in this region as well. In some of the largest supermarkets, skrei is promoted through the presentation of infomercials on screen which show the methods of catching and preparing the skrei for market.

In this region they can desalt the cod themselves in supermarkets, markets and pescaderías. Thus, they offer a wide range of products, which are ready for consumption. Popular products are bacalao entero, lomos, desmigados and migas

The consumption peaks around Easter and one of the sellers thinks that it is difficult to obtain Norwegian salted cod during this time (IV11). People purchase based on price and not quality (IV9) and salted cod is more expensive than meat (IV10). Over the years, the sales of salted cod have decreased due to the increase in prices (IV7). It appears that price is important for consumers and several of the sellers we interviewed stated that consumers are concerned about price. Although Norwegian salted cod and Bacalao Nacional are cheaper than the Icelandic salted cod, there still seems to be a preference for Icelandic products. There are also many substitutes to choose from and frozen products are an alternative for consumers who find salted cod too expensive. Substitutes for salted cod are whiting, ling, tusk and hake, as well as pengasius.

There was a disagreement between some of the interviewees regarding the consumption of frozen salted cod and the consumption of substitutes. IV1 believes that in the future, more fresh and salted cod will be sold at the cost of frozen salted cod, while IV4 believes that sale of frozen products will increase.

There is a belief that consumers prefer products that are quick to prepare. This premise is supported by IV3, IV4, IV5 and IV6. IV5 says that price is important, but consumers may pay a little extra for products that are quicker to prepare and that they sell more of desmigadas since it is quicker to prepare. IV3 believes Bacalao tipo inglés is the best product, and that qualities like low salt content and the thickness of the cod is most important for consumers. Many consumers are concerned with the salt content because of the health recommendations.

IV3 believes that consumption used to be higher and she bases her opinion on the price level today, as well as a change of the eating habits of the younger generation. *"They are just*

*eating chicken and pasta*". The change in consumer patterns is supported by IV4 who also believes that people eat less salted cod products now because the young eat differently.

*"Eating habits have changed."* According to IV8, salted cod is sold more now than before, but the younger generation does not have the culture for eating salted cod. One of the reasons is the time required for preparation and she also believes that they eat junk food. *"Young people do not purchase salted cod because it takes too much time to prepare a meal (IV7).*

IV4 offers Norwegian salted cod and sells large quantities of bacalao entero, desmigados and lomos. He rehydrates lomos on site until it is ready for cooking. Price for normal lomos is € 14, while the price for the rehydrated product is €32 and he actually sells more of the latter even though the price is more than doubled.

Personally, he prefers Norwegian salted cod because of the color and texture and he believes that lomos is best piece. Color is important for consumers and they do ask about origin but quality is more important than origin. According to IV10, Norwegian salted cod is the most similar to Bacalao tipo inglés based on texture and color and he also prefers Norwegian cod based on its qualities. He still says *"The bacalao from Iceland is more clear, much better."*

IV6 also offers Norwegian salted cod which is popular amongst customers due to the color and the similarity with bacalao tipo inglés. IV7 sells Norwegian salted cod and experiences people asking about the origin just out of curiosity, but the most important factor is the quality.

IV9 sells salted cod from Finland and Bacalao tipo inglés. Icelandic salted cod is whiter while the Finish salted cod has better texture. Some consumers are aware of a difference between Norwegian and Icelandic salted cod (IV10), but for the most part, very few ask about origin. In the traditional markets, there is distinct labeling which states the origin if it is Icelandic, but not if the origin is Norwegian, Finnish or Faroese.

The following statement represents the opinion of most of the consumers interviewed. *"I do not care about the origin as long as the quality is good ( IV8)"* They purchase salted cod from a regular supplier because of their relationship and the quality of the fish supplied.

It is important to know what time of year the fish were caught; this is because of the difference in quality. Cod caught during winter is thicker, fatter and finer due to the cold water (IV11). In addition, he claims that Norwegian cod maintains a better quality over time than Icelandic cod, since it is saltier and has a better texture.



### 5.1.3 Cataluña (Barcelona)

*“Everyone eats bacalao (IB2)”*

**Table 5.3: Informants from Cataluña**

IB1: Mercat Sant Antoni	IB2: La Boquería, market stall 1	IB3: La Boquería, market stall 2
IB4: La Boquería, market stall 3	IB5: Mercado Santa Catarina	IB6: La Casa del Bacalao
IB7: Mercado Barceloneta		

7 interviews were collected in Cataluña and there is a very clear preference for white and thick salted cod in this region. The color is far more important than in the other two regions. The Icelandic salted cod is most pronounced in the market and we cannot find Norwegian labeled salted cod anywhere. Some sellers offer Norwegian cod, but not to the same extent as Icelandic, and if so, they only offered individual products in addition to the Icelandic. Another reason why the presence of Icelandic salted cod is so large is that it is easier to get a hold of from importers.

In Barcelona, it is common to desalt the cod in the markets and stores and consumers can buy desalted cod ready for cooking. The choice between salted or desalted cod is mostly made depending on price and the purpose of the preparation (IB1).

Price is very important. A seller explains that Spaniards from this region eat a lot of salted cod., and the younger generation eats more at home with their parents than by themselves. She suspects that this is due to lack of money since bacalao is an expensive meal (IB1). Before, the traditional meals consisted of two dishes, but now salted cod is cut into different pieces and other courses can be prepared. It has become a more versatile product and this is one of the reasons why it sold more.

Some consumers ask for origin, but the quality is more important (IB1). Other interviewees say that their customers do not ask about the origin and that quality and price are the important factors. The lack of questions can be related to the distinct offerings of Icelandic

salted cod. Most market stalls have obvious signs with "Iceland" written in uppercase. In addition, IB2, IB3 and IB6 underscore that the visual experience is much more important for consumers than origin.

In the traditional markets there is a large offering of salted cod. Salted cod is very popular in the markets and it might have a connection with advertising (IB5). The quality is much of the same all over and it is believed that consumers shop on the basis of price and the preferred cut of the fish. "*Icelandic salted cod is best.* ( IB4)" IB5 has no experience with Norwegian salted cod. She thinks Icelandic salted cod is better than Norwegian because it is caught in colder water.

Some of the market stalls offer Norwegian salted cod occasionally. IB2 offered mainly Icelandic salted cod, but the skinless and boneless lomos was Norwegian. Icelandic salted cod is easier to get a hold of from importers.

The difference between Norwegian and Icelandic salted cod is that Icelandic is thick and white, while the Norwegian is drier and has a better texture (IB2). Norwegian fish is harder to work with and it is stickier and yellower in color (IB5).

The sales ratio between Icelandic and Norwegian salted cod is almost 50/50 (IB3). IB3 exports to other locations, e.g. Italy by mail. When he exports, he prefers salted cod originating from Norway because it contains more salt and can withstand shipment better than Icelandic fish.

In La casa del Bacalao they offer salted cod from the Faroe Islands. Icelandic and Faroese salted cod does not have any special differences, however Faroese cod is a little cheaper than Icelandic. The consumers care about price and the visual, not the origin (IB6).

Quality wise, Norwegian and Icelandic cod is more or less the same, but the quality of the cod differs depending on the catching method. Iceland and the Faroe Islands primarily use longline fishing, which has many benefits and gives a shorter preparation process from the time the fish is caught to when it is salted. Norway uses trawling, which results in a longer preparation process time and an increased risk of catching fish, which were already dead at sea, and fish with more damage to the flesh. Iceland also has a cleaner cut in their fish and he wonders if this is due to the machinery used for processing and if Norway uses older machines.

**Table 5.4: Summary of findings**

	<b>Cantabria</b>	<b>Comunidad Valenciana</b>	<b>Cataluña</b>
<i>Price</i>	Many consumers place price above quality.	Price is important, but many choose to pay extra for desalted products.	Price is very important, but consumers pay for the desired cut.
<i>Quality</i>	Iceland is perceived to deliver better quality. White fish meat is perceived to be good quality, while a yellow fish meat is perceived to be bad quality.	Quality more important than origin. There are major differences in preferences, hence consumers rank quality features differently.	Quality is important, and Icelandic is perceived to be of better quality than competitors.
<i>Product</i>	Not allowed to desalt on site. Must use agents.	Desalts on site. Vendors offer a wide range of desalted products. Many prefer these products as they are quicker to prepare.	Desalts on site. Vendors offer a wide range of desalted products. Preferred by many since they are quick to prepare.
<i>Preference</i>	Preference for Icelandic cod due to color, texture and perceived quality.	Preferences vary. Some prefer Norwegian; others prefer Icelandic, Bacalao Nacional or Bacalao tipo Inglés.	Clear preference for Icelandic salted cod due to color and thickness.
<i>Consumption</i>	Peaks around easter and christmas. Renewal in the market as the younger generation also purchases salted cod. Vendors believes that the market is stable.	Peaks around easter. Decline in consumption. The younger generation does not eat salted cod. Vendors believes there has been a decline in the market, e.g. due to high prices.	Peaks around easter, but consumption are even throughout the year. The younger generation does not eat salted cod.
<i>Origin</i>	Only Icelandic salted cod in the market, and at the pescadería. Labeled FAO 27, Iceland, Faroe Islands or Russia in supermarkets.	Icelandic, Norwegian, Faroese, Bacalao Nacional and Bacalao tipo Inglés. Labeled FAO 27, Iceland, Norway or the Faroe Islands in supermarkets.	Mainly Icelandic, some unlabeled Norwegian. Labeled FAO 27, Iceland, Norway or the Faroe Islands in supermarkets.
<i>Country of origin awareness</i>	Consumers do not ask for origin. They know it is imported, but they are indifferent. Little knowledge of Norwegian salted cod.	Some ask for origin, but it is not important. There is a higher knowledge of Norwegian salted cod in this region compared to the others.	Very few ask for origin. Stalls and stores have clear branding of Icelandic origin
<i>Other</i>	Salted cod is popular. Many consumers trust their supplier to offer them the best quality cod.	Has tradition of salted fish consumption, but not salted cod in particular. Not as uniform preferences as in the other regions	Distinct labeling of Icelandic cod. Perceived to be an early adopter of new trends.

#### 5.1.4 Interviews with Norwegian Exporters

Table 5.5: Informants, Norwegian exporters

IE1: Molja	IE2: UNICOD AS	IE3: Carl Johan AS
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Spain is a market that has yearly ups and downs. UNICOD exports to Valencia where they have three-four customers. The largest customer is Pescafina. According to IE2, a large portion of the volume sold to Pescafina is further processed and sold to other markets. This is not unique for UNICOD. It also applies to other exporters, which means that actual consumption volume in Spain is likely less than stated. Nowadays, the actual consumption in Spain might be juxtaposed with Greece (IE2). IE3 exports to the Basque Country, Valencia and Barcelona. They sell to several importers and Spain is an important market for salt fish.

Ten to fifteen years ago some Icelandic companies acquired Spanish companies which meant that they acquired a larger foothold in the Spanish market (IE2). One example is the Icelandic Group. In 1996, Icelandic Iberica was founded and in 2005 they acquired Ecomsa which is a production and distribution company specializing in the distribution of seafood to hotels and restaurants in southern Spain. Ecomsa operates its own fleet of trucks serving more than 2,000 customers (IcelandicIberica).

The salted cod from UNICOD is delivered to the industry and is thereby not labeled with country of origin to the end consumer. IE2 still believes that Norwegian products are clearly labeled in markets where there is a preference for Norwegian products (such as Portugal), but this is not the case in Spain. Norwegian products are labeled with country of origin for business-to-business sales (IE3). When it comes to whether or not Norwegian exporters desire country of origin labeling, IE3 states, "There is no requirement, nor any wish from the importer's side, since the Norwegian fish varies greatly in quality and continuity when it comes deliveries. " This is generally speaking when it comes to salt fish from Norway.

Icelandic producers often export filets and other products. At this point, Norway does not have the equipment for this type of processing and primarily export split fish. Nowadays, there is a preference in the market for light-salted cod making this an opportunity for Norway to produce products in tune with the trends in market demands. IE3 also states, "We are

seeing an increase in sales of fillets and a decline in sales of traditional split fish. This is of concern for Norway, which has a small file capacity in relation to split capacity. Also, we are seeing increasing sales of lightly salted fillets used as substitutes in many segments. This affects many of the customers of our customers because of the increasing price of our cod. In the recent years, we have not been able to offer the products the market wants, that are treated with chemicals so that the color and texture are as desired. It was not until 2014 we got an opening for this, so now there are opportunities for us to deliver the same product" (IE3). These are some of the reasons that affect Norway's position in the Spanish market. Others are that Iceland has a different fishing pattern and the Norwegian cod is from another fish stock (IE2).

Building relations is an important aspect for both the Norwegian exporters. IE2 states that they try to be present on site in Spain at every delivery. This is done for several reasons, amongst other; it facilitates re-sale, gives information and increases knowledge. IE3 claim that they are concerned with relationships, and he therefore believes that they can be some of the first to succeed in Spain.

There is a difference in quality between the Icelandic and Norwegian fish. Norwegian fish is not as white and thick as the Icelandic and the preference in the Spanish market is clearly on the Icelandic fish. IE1 says that there is more focus on quantity than quality in Norway, and that this may be related to the short catch period. IE3 supported the statement made by IB6 who believed that Icelandic catch- and processing method gave better quality fish than that of the Norwegian.

Neither of the exporters use phosphate today. IE3 wished to deliver what the market demands and not what the suppliers wished to sell, which is a part of the problem in Norway today. IE2 believes that if one wants a competitive product, phosphate is the alternative. Their suppliers are not using it at this point, yet to become more competitive in the market phosphate appears to be the direction the Norwegian suppliers should take. However, he questions if this is the path to take. Given the fact that Norwegian cod is different from the Icelandic and that it is expensive to alter production from split to fillets, maybe the best strategy would be to sell the product Norway has to offer in its own way and focus on attributes such as nature, fishing boats, culture etc.?

## 5.2 Quantitative results

To determine whether or not the hypotheses are to be rejected, we need to test the different variables in a regression analysis. This part of the chapter provides results from the analyses conducted. The survey was conducted in Spain with the goal to collect answers from a minimum of 100 respondents mainly from the Spanish regions Cantabria, Comunidad Valenciana and Cataluña. First, descriptive statistics of the respondents are presented, followed by factor analysis and multiple regression analysis. In addition, t-tests are conducted to see differences in regions and importance characteristics.

### 5.2.1 Descriptive statistics

#### *Respondents by region*

Three different regions in Spain were used to get a broader picture of the market and to measure possible differences across the country. Respondents from Cantabria represent 43.1 %, 31.9 % are from Comunidad Valenciana, 16.7 % from Cataluña, and 8.3% from other regions (6.95 % (5) from Madrid and 1.39 % (1) from Bilbao (appendix 7.1a)).

These results indicate that Cantabria is highly represented, while Cataluña is somewhat underrepresented. By excluding respondents with incomplete answers, 81 respondents remain. Some respondents only answered parts of the questionnaire, but due to the sample size, we choose to retain these as they may provide some information.

#### *Gender and age*

Out of 81 respondents, 56.3 % (40) were females and 43.7% (31) were men. Ten did not answer whether they were male or female (appendix 7.1b). These results are close to the gender distribution in Spain which is 49,16% men, and 50,84% women (Instituto Nacional de Estadística, 2014).

Regarding age, all categories are represented. The age group 16-25 and respondents above 66 years old were represented by 5.6% (4) each. 12.5% (9) were between the ages of 26-35, 31.9% (23) were between the ages of 36-45, 25% (18) were between the ages of 46-55, and 19.4% (14) were between the ages of 26-66. Nine respondents did not answer the question about age (appendix 7.1c).

### *Total household income*

Respondents were asked to indicate the total income of their household with the purpose of estimating the price sensitivity of customers. Distribution of income shows that 14.5 % (10) of the respondents have a total household income of less than 15.000 Euros, 43.5 % (30) have a total household income between 15.000-25.000 Euros, while 42.0% (29) have a total household income above 25.000 Euros. Twelve respondents did not answer this question and even though the questionnaire was anonymous, we handed it out to some respondents face to face, which can be one of the reasons for leaving this question blank (appendix 7.1d).

### *Consumption*

Respondents were asked how many times a month they purchase salted cod. The percentage of respondents who said they never purchase salted cod was 8.3 % (6), 38.9 % (28) purchase less than twice a month, 44.4 % (32) purchase salted cod 1-4 times a month, 6.9 % (5) purchase salted cod 5-8 times a month, while only 1.4 % (1) said he purchased salted cod more than 8 times a month. Nine respondents did not answer this question (appendix 7.1e). Figure 5.2 shows the distribution of consumption among consumers.

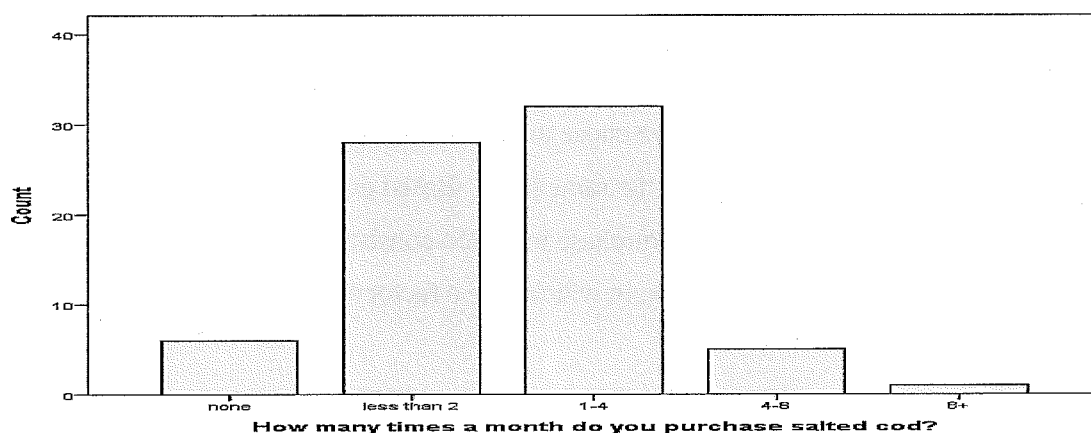


FIGURE 5.2: DISTRIBUTION ON CONSUMPTION



On the basis of statements about the economic crisis in Spain and changes in consumption patterns, from HORECA consumption to home consumption, we wanted to test our sample to see if this is true (appendix 7.1f). 83.1 % (59) of the respondents consume their meals at home while 16.9 % (12) of the respondents eat at hotels or restaurants. Ten respondents did not answer this question.

On the question about where the respondents purchase salted cod, 41.4 % (29) said they purchase from supermarkets, 28.6 % (20) said they purchase from fishmongers, while 30% (21) said they purchase salted cod from other places (appendix 7.1g). Eleven respondents did not answer this question.

### ***Which products do consumers prefer?***

This open-ended question shows different preferences of consumers regarding the different cuts of salted cod. The majority of the respondents, 41, 0% (25), prefer loins (lomos) from salted cod while 14, 7% (10) of the respondents prefer cod cheeks (cocochas). The distribution of answers is provided in appendix 7.1h.

### **5.2.2 Data reduction: Factor analysis**

The research question in this thesis aims to examine whether brand awareness, brand image and country of origin awareness have a significant effect on purchase intention for salted cod in Spain. We also wanted to investigate whether there are any regional differences and differences based on origin recognition.

In order to measure these questions, we chose to run a confirmatory factor analysis to test if the items we have suggested measure the same scale. Based on our research model, we wanted to make 7 summated scales. Purchase intention consists of only one variable; *V17: I intend to buy salted cod products soon*, in which case a factor analysis could not be conducted.

## Brand image

Three items measure brand image:

V34: *I think salted cod has a good reputation.*

V35: *My family and friends think salted cod has a good reputation.*

V36: *Society in general thinks salted cod has good a reputation.*

Appendix 7.2a provide information regarding the descriptive statistics for the first factor analysis and show the valid number of respondents answering these items, N=72. The mean scores illustrates that the majority of the items have a mean score above 5.6 measured on a likert scale from 1 to 7. This is a rather high mean score for this scale. The standard deviation values tell us how spread the values are. The skewness value provides an indication of the symmetry of the distribution while the kurtosis provides information about the peakedness of the distribution (Pallant, 2007). A perfect distribution would give a skewness and kurtosis value of 0. Items of brand image have negative skewness values indicating that a clustering of scores is at the high end. The two positive kurtosis values for V34 and V35 indicate that distribution is clustered in the center with long thin tails. Kurtosis can result in an underestimate of the variance in a small sample like this.

**Table 5.6 Results from confirmatory factor analysis – brand image**

Items	Factor loadings
<i>Brand image: (KMO = .756, Bartlett's Test of Sphericity Sig =.000, Variance explained = 87%, Cronbach's alpha = .925)</i>	
V34: I think salted cod has a good reputation	.946
V35: My family and friends thinks salted cod has good reputation	.920
V36: Society in general think salted cod has good reputation	.933

Results from the confirmatory factor analysis are shown in table 5.6. Inspection of the correlation matrix revealed that all coefficients were above .3. The Kaiser-Meyer-Olkin value (KMO) (appendix 7.2b) was .642, exceeding the recommended value of .6 (Kaiser 1970, 1974 cited in Pallant, 2007) and Bartlett's Test of Sphericity (Bartlett 1954, cited in Pallant, 2007) reached statistical significance, supporting the factorability of the correlation matrix.

The confirmatory factor analysis revealed the presence of only one component with values above 1, explaining 58, 7% of the total variance respectively (appendix 7.2c). An inspection of the scree plot revealed a clear break after the first component giving us confirmative proof of a one-component solution. The factor loadings (appendix 7.2d) have high loadings, all above .4 (.809, .746, .742), indicating that the three variables are appropriate to use in the same component, brand image. Low values (e.g. less than .3), may indicate that the item does not fit the other items in the component (Pallant, 2007). Regarding the reliability of the factor analysis on these variables, the Cronbach's Alpha coefficient (appendix 7.2e) is .925, suggesting very good internally consistent reliability for the scale with this sample. The alpha value should be above .7 to be reliable; however, the preferred value is above .8 to confirm that the variables measure the same. By deleting one variable, the alpha value would be lower (appendix 7.2f). We choose to retain all three items based on the high reliability and make summated scales based on these results.

### **Brand awareness**

Two items measure brand awareness:

*V32: I am well aware of salted cod.*

*V33: I have good knowledge of salted cod products.*

Appendix 7.3a provides information on the descriptive statistics for the items in brand awareness. The mean scores are above 5 on both items indicating a high mean for a measurement measured on a scale from 1 to 7. The skewness and kurtosis are both negative indicating some violation of normality.

**Table 5.7 Results from confirmatory factor analysis – brand awareness**

Items	Factor loadings
<b>Brand awareness (KMO .500, Bartlett's Test of Sphericity Sig =. 000, Variance explained = 85,77%, Cronbach's alpha = .834)</b>	
V32: I am well aware of Salted cod	.926
V33: I have good knowledge of products of salted cod	.926

V4, V33 and V32 were initially measuring brand awareness. The correlation matrix provided us with information that we should reconsider running a factor analysis. The Kaiser-Meyer-Olkin value was below .6, indicating that a factor analysis would be weak even though the anti-image correlations showed a large contribution. However, the reliability analysis showed a Cronbach's alpha value of .614, too low for the scale to have approved reliability. By removing *V4: How important is the brand of salted cod for your purchase?*, the alpha value increases to .834 which indicates a more reliable measurement and confirms that the variables measure brand awareness. We therefore chose to remove V4 and did the factor analysis again.

Table 5.7 provides a summary of the summated scale of brand awareness. Further, an inspection of the correlation matrix (appendix 7.3b) revealed that all coefficients were above .3. The Kaiser-Meyer-Olkin (KMO) value (appendix 7.3c) was .500 which indicates a weak factor analysis since the suggested minimum value is .6. V4. Bartlett's Test of Sphericity (Bartlett 1954 cited in Pallant, 2007) reached statistical significance supporting the factorability of the correlation matrix. Anti-image correlations are preferred to be .5 or higher and, in this case, the numbers are at a .5 level indicating that they provide a high contribution for factor analysis.

By using Kaiser criterion, the confirmatory factor analysis revealed the presence of a single component to extract with eigenvalues above 1, explaining 85, 7% of the total variance respectively (appendix 7.3d). An inspection of the scree plot revealed a clear break after the first component. The factor loadings (appendix 7.3e) have high loadings, all above .4 (.926 for both), indicating that both variables should belong to the factor brand awareness.

The Cronbach's Alpha coefficient for the brand awareness scale (appendix 7.3f) is .834, suggesting a very good internally consistent reliability for the scale with this sample

## Price

Three items measure price:

V27: *Salted cod has a good value for money.*

V28: *The quality is very good compared to the price.*

V29: *I would choose salted cod regardless of price.*

Descriptive statistics for price, shown in appendix 7.4a, gives the valid number of respondents = 72. On a scale from 1-7, only V27 is above 5 while the other two are close to 5 giving a rather high mean value for the factor analysis. The values are spread at a 1.3-1.8 level. All items have negative skewness indicating a cluster of scores in the high end. The kurtosis for V27 indicates distribution in a cluster around the center while V28 and V29 have negative kurtosis values e.g more spread values.

**Table 5.8 Results from confirmatory factor analysis - price**

Items	Factor loadings
<b>Price (KMO .624, Bartlett's Test of Sphericity Sig = .000, Variance explained = 64,83%, Cronbach's alpha= .834)</b>	
V27: Salted cod has a good value for money	.830
V28: The quality is very good compared to the price	.873
V29: I would choose cod regardless of price	.703

Correlations load is above .3 for all items (appendix 7.4b), however, the Kaiser-Meyer-Olkin value is .624 (appendix 7.4c). This value should be above .7, but above .6 is acceptable. Anti-image correlations are above .5, indicating that all items are at an acceptable level for factor analysis. According to Kaiser Criterion, a one-component solution is indicated, explaining 64, 8% of the total variance (appendix 7.4d). In the scree-plot we can see a large break between the first and second component, also indicating a one-component solution. All of the variables have factor loadings above .4 indicating that they measure price (appendix 7.4e). Table 5.8 gives an overview of the results from the confirmatory factor analysis for price. Reliability analysis is also conducted for each factor separately. If the Cronbach's Alpha value is above .7, it is possible to merge the answers to all questions within the same

factor. The alpha value for price is .834, indicating that the variables in this component can be used as a scale (appendix 7.4f).

### Distribution

Three items measure distribution:

*V30: Cod is easy to find in stores.*

*V31: The vendors give good information and recommend salted cod*

*V23: I can choose from a wide range of salted cod.*

Table 5.9 Results from confirmatory factor analysis - distribution

Items
Price (KMO .429, Bartlett's Test of Sphericity Sig = .001, Cronbach's alpha=.425)
V30: Cod is easy to find in stores
V31: The vendors give good information and recommend cod
V23: I can choose from a wide range of salted cod

The factor analysis for the variables in distribution had a low Kaiser-Meyer-Olkin value (.429) (appendix 7.5a) and suggested a two-component solution. The value for Cronbach's Alpha had poor reliability (.425) (appendix 7.5b and 7.5c) and it would not increase to a satisfactory level by removing one variable. We therefore conclude that these three variables for distribution cannot be used in a factor analysis. *V31: The vendors give good information and recommend salted cod* was removed from the analysis after testing as this item provided little answers and correlations. After running multiple factor and reliability analysis for the two remaining items, we concluded that the variables should be run separately in a regression.

## Quality

Three items measure quality:

*V24: In my opinion, cod is of high quality.*

*V25: In my opinion, the producers always deliver high quality products.*

*V26: In my opinion, cod is of better quality than the alternatives.*

Descriptive statistics for quality, shown in appendix 7.6a has a valid number of respondents = 70. On a scale from 1-7, V24 and V26 had high mean values above 5. The values are spread at a 1.4-1.7 level. All items have negative skewness indicating a cluster of scores in the high end. The kurtosis for V24 indicates distribution in a cluster around the center while V25 and V26 have negative kurtosis values, e.g more spread values.

**Table 5.10 Results from confirmatory factor analysis - quality**

Items	Factor loadings
<b>Price (KMO .642, Bartlett's Test of Sphericity Sig = .000, Variance explained = 58,74%, Cronbach's alpha= .646)</b>	
V24: In my opinion, cod is of high quality	.746
V25: In my opinion, the producers always deliver high quality products	.809
V26: In my opinion, cod is of better quality than the alternatives	.742

Inspection of the correlation matrix (appendix 7.6b) revealed that all coefficients were above .3. The Kaiser-Meyer-Olkin value (appendix 7.6c) was .642, exceeding the recommended value of .6 (Kaiser 1970, 1974 cited in Pallant, 2007) and Bartlett's Test of Sphericity (Bartlett, 1954 cited in Pallant, 2007) reached statistical significance, supporting the factorability of the correlation matrix.

The confirmatory factor analysis revealed the presence of only one component with eigenvalues above 1, explaining 58, 74% of the total variance respectively (appendix 7.6d). An inspection of the scree-plot revealed a clear break after the first component. The factor

loadings (appendix 7.6e) have high loadings, all above .4 (.809, .746, .742), indicating that the three variables are appropriate. The Cronbach's Alpha coefficient for the brand image scale (appendix 7.6f) is .646. The alpha value should be above .7 to be reliable and to confirm that the variables measure the same. Although .646 is a rather low value, if we delete one of the items, the alpha value would be lower (appendix 7.6g). We therefore chose to retain all three items and make a summated scales based on these results.

## **Product**

The variables for product consist of 10 variables.

*V21: The cod is white, thick and appealing.*

*V22: I believe cod is a fresh, healthy product without additives.*

*V12: How important is flavor to you?*

*V13: How important is color to you?*

*V14: How important is thickness to you?*

*V16: How important is conservation to you?*

*V2: How important is the color of the salted cod for your purchase?*

*V3: How important is the thickness of the salted cod for your purchase?*

*V4: How important is the brand of the salted cod for your purchase?*

*V5: How important is the freshness of the salted cod for your purchase?*

Descriptive statistics for product, shown in appendix 7.7a has a valid number of respondents = 70. On a scale from 1-7, all variables have high mean scores except V4. The values are spread at a 1.1-1.79 level. All items have negative skewness indicating a cluster of scores in the high end. All items have positive kurtosis indicating distribution in a cluster around the center except for V4 which has negative kurtosis and values are more spread than the other items.



**Table 5.11 Results from confirmatory factor analysis -product**

Items	Factor loadings	
	Component 1	Component 2
<b>Price (KMO .689, Bartlett's Test of Sphericity Sig =. 000, Variance explained = 61.06% (46.60%, 14,46%), cronbach's alpha = .857)</b>		
V21: The cod is white, thick and appealing	.226	<b>.606</b>
V22: I believe that cod is a fresh, healthy product, without additives	.136	<b>.684</b>
V12: How important is flavor to you?	<b>.686</b>	.199
V13: How important is color to you?	<b>.853</b>	-.030
V14: How important is thickness to you?	<b>.847</b>	.133
V16: How important is conservation to you?	<b>.670</b>	-.392
V2: How important is the color of the salted cod for your purchase?	<b>.767</b>	.201
V3: How important is the thickness of the salted cod for your purchase?	<b>.824</b>	.235
V4: How important is the brand of the salted cod for your purchase?	<b>.685</b>	-.354
V5: How important is the freshness of the salted cod for your purchase?	<b>.700</b>	-.423

After running a reliability analysis, we chose to exclude *VI5: How important is freshness to you?* due to the large increase in the Cronbach's alpha value. Based on the results from the factor analysis, the Kaiser-Meyer Olkin value is appropriate for running a good factor analysis at a.689 level (appendix 7.7b). The initial eigenvalues (appendix 7.7c) provided us with information to split the variables in two components with eigenvalues above 1 where the importance variables are in component 1 and 2. *V21: The cod is white, thick and appealing* and *V22: I believe cod is a fresh and healthy produc, without additives* are in component 2 (appendix 7.7d).

The Cronbach's alpha showed good reliability (.857) for all 10 items in the analysis (appendix 7.7e). Even though the alpha value would increase by removing V21 and V22, it is high enough to conduct a reliable factor analysis (appendix 7.7f). By running a factor analysis with only V21 and V22, we would have a low Cronbach's alpha value and a weak factor analysis based on the KMO measure. Based on these results, we made summated scales on importance variables and on product characteristics.

## Country of origin awareness

*V18: Do you recognize the difference between salted cod from Norway and Iceland?*

In this pre-determined component, factor analysis would not be suitable since we have two variables with yes or no answers and a third variable, V7, that measures the specific countries based on a scale from 1-5. When testing and failing, we learned that *V18: Do you recognize the difference between salted cod from Norway and Iceland* was an appropriate variable to use for this measurement because we wanted to explore if consumers were able to differentiate between the two countries. We decided to make a dummy variable (V18 dummy) from *V18: Do you recognize the difference between salted cod from Norway and Iceland?* as a measure for country of origin awareness.

### 5.2.3 Multiple regression results

This part of the analysis aims to answer our research question: *How does country of origin affect consumers purchase intention for Norwegian salted cod in Spain?* As mentioned earlier, we have a rather small sample and because of this one must be cautious with the interpretations.

#### 5.2.3.1 Regression 1: Brand image

We measure whether country of origin awareness and brand awareness has a significant positive effect on brand image tested by the following hypotheses:

*Hypothesis 1: Country of origin awareness has a significant positive effect on brand image.*

*Hypothesis 3: Brand awareness has a significant positive effect on brand image.*

In addition, the variables for price, quality, distribution, product characteristics and their contribution to brand image are tested without any hypotheses based on previous research by Diamantopoulos (2011), showing that these variables affect brand image.

Brand image is the dependent variable and brand awareness, country of origin awareness, brand image, price, quality, product characteristics, *V30: Cod is easy to find in stores*, and *V23: I can choose from a wide range of salted cod products* are considered as independent

variables. Regression analysis provides information on the model as a whole, in addition to the relative contribution of each independent variable. Table 5.12 gives an overview of the main result from the analysis for which all the variables in the regression explain 67.8% of the total variance in brand image.

**Table 5.12 Multiple regression analysis – dependent variable: brand image**

Items	B	Beta	t	Sig.	VIF
Price	.149	.143	1.219	.202	2.353
Products characteristics	.162	.127	1.642	.106	1.154
Country of origin awareness	-.351	-.111	-1.395	.169	1.229
Quality	.547	.504	4.984	.000	1.970
Brand awareness	.215	.272	2.657	.010	2.019
Cod is easy to find in stores	.067	.075	.902	.371	1.348
I can choose from a wide range of salted cod	.184	.159	2.097	.041	1.112
<b>Adjusted R Square</b>	<b>.678</b>				
<b>F</b>	<b>19.680</b>				

Results from this regression show that quality makes a stronger significantly positive contribution to brand image than other variables in the analysis (Beta=. 504, P<. 05). Brand awareness (Beta=. 272, P=. 05) and V23: *I can choose from a wide range of salted cod products* (Beta = .159, P<. 05) also have significantly unique contributions to brand image. On the other hand, price, product characteristics, country of origin awareness and V30: *Cod is easy to find in stores*, has no statistical significant effect on brand image. The assumptions for multicollinearity is not violated and the data set were distributed normally according to the Kolmogorov-Smirnov statistics and the Normal Q-Q Plot. We can, based on these results, state that country of origin awareness does not have any effect on brand image and is not statistical. Therefore, hypothesis 1 is rejected. Brand awareness has, on the other hand, a significant positive effect to brand image and therefore hypothesis 3 is not rejected.

### 5.2.3.2 Regression 2: Purchase intention

We measure whether country of origin awareness, brand image and brand awareness has a significant positive effect on purchase intention tested by the following hypotheses:

*H2: Country of origin awareness has a significant positive effect on purchase intention.*

*H4: Brand awareness has a significant positive effect on purchase intention.*

*H5: Brand image has a significant positive effect on purchase intention.*

In addition, we will also test whether or not price and quality have a direct effect on purchase intention based on previous theories and findings.

Purchase intention is the dependent variable and brand awareness, country of origin awareness and brand image are the independent variables. Regression analysis provides information on the model as a whole in addition to the relative contribution of each independent variable. Table 5.13 gives an overview of the main result from the analysis where all the variables in the regression explain 25.2% of the total variance in purchase intention.

**Table 5.13 Multiple regression analysis – dependent variable: purchase intention**

Items	<i>B</i>	Beta	t	Sig.	VIF
Country of origin awareness	1.290	.247	2.252	.028	1.098
Brand image	.465	.274	2.120	.038	1.519
Brand awareness	.252	.183	1.391	.169	1.576
<b>Adjusted R Square</b>	<b>.252</b>				
<b>F</b>	<b>8.638</b>				

Results from this regression show that brand image has a strong significantly positive contribution to purchase intention (Beta = .274,  $P < .05$ ). Country of origin awareness also has a direct effect and makes a statistically significant positive contribution to purchase intention (Beta = .247,  $P < .05$ ). Brand awareness has, on the other hand, no significant effect on purchase intention. The assumptions for multicollinearity is not violated, but residuals were not normal distributed according to the Kolmogorov-Smirnov statistics and the Normal Q-Q Plot. This is mainly caused by the kurtosis. Due to the small sample and the non-normal characteristics, we also ran a bootstrap of the standard deviation sample with 200. The bootstrap shows a more robust result of the sample, and gives us the same indications and values. We can,

based on these results, state that country of origin awareness increases purchase intention for consumers in Spain and has a statistically positive effect, meaning hypothesis 2 is not rejected. Results also show that brand image increases consumers purchase intention in Spain with a significant statistically positive effect, meaning hypothesis 5 is not rejected. Further, brand awareness does have influence on purchase intention, but it does not have a statistically significant positive effect, meaning that hypothesis 4 should be rejected. When measuring whether or not price has a direct influence on purchase intention, we got the same result as we did for brand image; price did not have a significantly positive effect on purchase intention. The quality measurement has high influence on brand image/products image and we would therefore assume that quality also has an effect on purchase intention. Results from the regression analysis with quality affecting purchase intention show surprising answers (Beta = .065, B= .119,  $P > .05 = .676$ ). This result was not significant and we can therefore not say that quality influences purchase intention for salted cod. However, when running a regression with quality in addition to brand awareness, brand image and country of origin awareness, all variables were insignificant ( $P > .05$ ). The same insignificant result was provided for product characteristics and the distribution of product.

#### **5.2.4 Analysis of variance (t-tests)**

Independent-sample t-test was used to compare the mean scores based on the regions and for respondents who could, and could not, recognize the difference between salted cod from Norway and Iceland. This test will tell if there is a statistically significant difference in the mean score for the two groups and the probability that the two sets of scores comes from the same population.

The first independent-sample t-test was conducted for regions. Due to the larger sample in Cantabria and the smaller samples from Cataluña and Comunidad Valenciana, we chose to split the t-test into two, 1 = Cantabria and 2 = Cataluña, Comunidad Valenciana and other. The mean scores for the two groups differ regardless of regions. Consumers are more likely to purchase salted cod sooner in Cataluña, Comunidad Valenciana and the other regions than consumers from Cantabria. Price has a lower mean score in all regions supporting our results from the regression analysis and in-depth interviews. The characteristics of a product may have larger influence on consumers in Cantabria, whereas the importance characteristics of the specific product are most important in the other regions. When we take into account that

Cataluña and Comunidad Valenciana have been combined because of the small sample, we see that this is consistent with findings from in-depth interviews. Further, results shows that consumers in Cantabria have higher mean scores for the other variables tested, especially brand awareness, which shows that consumers in Cantabria are more informed regarding brand and product types of salted cod.

The Levene's Test of Equality of Variance (appendix 7.8a) provides results indicating that there is equality of variances for both groups. There is a significant difference in the mean score between the two regions regarding purchase intention. Further, the effect size statistics provide an indication of the magnitude of the differences between the two groups (Pallant, 2007). Eta squared is most common to use for testing effect size and results show that the importance questions regarding what consumers prefer have a moderate to large negative effect size (eta squared = -0.10). The characteristics of products also has a moderate to large effect size on regions (eta squared = 0.091), indicating that 9.1% of the variance in product characteristics is explained by region. Further, 4.5% of the variance in brand awareness is explained by region indicating the magnitude of the difference in the means to have a small to moderate effect size (eta squared = .045). Brand image and quality have a smaller magnitude of the difference in the mean with region (eta squared = .026 and .0.19). 2.6% of the variance in brand image is explained by region, while 1.9% of the variance in quality is explained by region. Region did not explain any of the variance in purchase intention and price.

During our research in Spain, we discovered some consumer preferences regarding product characteristics in our in-depth analysis. In Cataluña, consumers had higher preferences regarding the color and thickness of the fish. Based on this, a second independent-sample t-test was conducted (appendix 7.8b) to compare the mean scores from the importance questions for salted cod based on regions. No significant difference was found. Results of the eta squared analysis shows that prices have a small negative effect size on the regions (eta squared = -0.006) and region did not explain any of the variance in price. Brand and flavor of salted cod have a small to moderate effect size on region (eta squared = 0.030 and 0.028), indicating that 30% of the variance in brand is explained by region and 28% of the variance in flavor is explained by region. Further, freshness and conservation have moderate effect size on regions (eta squared = -0.099, -0.063 and 0.083). Results indicate that region did not explain any of the variance in the questions regarding freshness, but 83% of the variance in conservation is explained by region. Color and thickness, measured by two similar questions,

both have negative effect size on regions and a large magnitude of the difference in the means (eta square = -.120, -.130, -.126, -.153). This result indicates that region did not explain any of the variance in the questions regarding color or thickness.

A third independent-sample t-test was conducted to compare the mean scores from the summated scales in factor analysis based on whether or not consumers recognized the difference between salted cod from Norway and Iceland where 0 = no and 1 = yes.

The number of respondents who answered varies, and indicates that few consumers are able to differentiate between Norwegian and Icelandic salted cod. From these results we can see that all variables have higher mean scores when the consumer can differentiate. Those consumers who are more interested in price, quality, product characteristics and brand, are also more aware of the product in the market. It is more likely that consumers who are able to differentiate will purchase salted cod soon.

**Table 5.14 Independent-sample t-test –recognition**

	Levene's Test for Equality of Variances	Sig.	T	Sig. (2-tailed)	Mean difference	t-test for equality of means
<b>Price</b>	Equal variance assumed	.894	-1.685	.095	-.622	No significant difference
<b>Purchase intention</b>	Equal variance assumed	.165	-2.965	.004	-1.718	Significant difference
<b>Quality</b>	Equal variance assumed	.374	-2.835	.006	-.933	Significant difference
<b>Product characteristics</b>	Equal variance assumed	.272	-.854	.396	-.257	No significant difference
<b>Brand image</b>	Equal variance assumed	.723	-1.930	.058	-.695	No significant difference
<b>Brand awareness</b>	Equal variance assumed	.609	-2.625	.011	-1.158	Significant difference
<b>Importance product</b>	Equal variances not assumed	.030	-2.525	.015	-.622	Significant difference

The Levene's Test of Equality of Variance provides results indicating that there is equality of variances for all variables in the test except for the importance factors of the product.

Importance of product, brand awareness, quality and purchase intention provide a significant difference in the mean scores on recognition. The other data does not contradict the assumption of equal variance, meaning brand image, product characteristics and price

provides no significant difference in the mean scores based on recognition. Further, the effect size statistics provide an indication of the magnitude of the differences between the two groups (Pallant, 2007). The magnitude of the differences in the means was very large where price (eta squared= 0.233), purchase intention (eta squared= 0.399), quality (eta squared= 0.401), importance product (eta squared= 0.293), brand image (eta squared= 0.266), brand awareness (eta squared= 0.348), and product characteristics (eta squared= 0.114) all have large percentage of explanation by recognition.



## **7. DISCUSSION, LIMITATIONS AND CONCLUSION**

This chapter consists of a discussion of the findings, limitations and suggestions for further research, and a conclusion.

### **7.1 Discussion**

Based on the theoretical framework, two drivers for customer based brand equity were identified to affect purchase intention: brand image and brand awareness. In addition, and based on Diamantopoulos model, country of origin awareness was defined to affect both brand image and purchase intention. The context regarding the Spanish and Norwegian market for salted cod identified four drivers: product, price, quality and distribution as drivers for brand image which could indirectly affect purchase intention. The interest of this thesis is how country of origin affects the purchase intention for salted cod in the Spanish market measured by the above mentioned drivers.

The decline in Norwegian market shares have several explanations, including the recession and a change in consumer preferences towards easy-to-cook products such as frozen filets, fresh and light-salted fish products. The common denominator is that quality matters most and is much more important than price. Interviewees emphasized that buyers of salted cod choose products based on how they should use it rather than on the basis of price. It is also very clear that many consumers prefer products that have already been desalted and ready to use. Results show that salted cod is seen as a luxury product and a large part of consumers in our sample eat salted cod only 1-8 times a month. In comparison, 67% of the population eats seafood 2-3 times a week. The consumption pattern also shows that consumers eat more salted cod on Fridays and around Easter.

Aaker suggest that one can charge a price premium if the perceived quality of a product is seen as high by consumers. Lehmann and Winer suggest that in order to encourage a positive purchase, the observable price needs to be lower or equal to consumers' reference price. These suggestions both support and dont support our findings. Findings revealed that price is increasingly important, especially after the crisis. Nevertheless, what seems to be most important for consumers is the quality of the cuts. Observations show that prices for salted cod in the traditional markets are higher than in supermarkets, and also that Icelandic products are priced higher than salted cod from other origins. In competing markets, a price

premium might enhance the perceived quality, which is shown to be the most important attribute for Spanish consumers. According to Aaker (1991), the perceived quality of a product will directly influence purchase intention and brand image. This supports our findings from the quantitative results. Several studies show that consumers do not know the correct country of origin of products. They therefore base their preferences and evaluations on intrinsic and extrinsic cues i.e. physical characteristics such as size, color, flavor, taste and external characteristics such as price, packaging, advertising, brand image. Many consumers appreciate good relations with their suppliers, and trust that they supply products of good quality. We also found that there is a trend where consumers choose products that are ready-to-cook, which supports findings from previous studies. This seems to be somewhat more represented in Comunidad Valenciana and Cataluña, but this could be because desalted products were available to a greater extent and that our interviewees therefore feel that this is more important for consumers in these regions. Preferences in the Spanish market were fairly similar, but we uncovered some regional differences. The overall preference for white and thick salted cod was highly present in all regions, but in Comunidad Valenciana there was greater variation.

Brand image and country of origin awareness influence consumers purchase intention. Findings show that different preferences for particular features of products based on regions and recognition on country of origin exists. In Barcelona and to some extent also in Santander, there is a clear preference for thick and white salted cod. In Valencia, Castellón de la Plana and Burriana preferences are more diverse. Many consumers prefer both Bacalao Nacional and Norwegian cod because it is thinner and more yellow and have a different texture than the Icelandic. In this region they have traditionally used bacalao tipo inglés, and the Norwegian salted cod can be compared to it.

The results from the t-test show that the importance of price does not differ between the regions in Spain. The other preferences support our findings from the theory and in-depth interviews. Color, thickness and freshness are preferences that are more important in the regions of Comunidad Valenciana and Cataluña. We take into account that the results of these two regions have been merged, as this does not correspond completely with the findings from the interviews as the largest variations in preferences were found in Comunidad Valenciana. The brand, flavor and the conservation of salted cod are more important in Cantabria. Many of the sellers in this region had a good knowledge of Norwegian salted cod,

and in many cases they preferred the Norwegian rather than the Icelandic on the basis of texture and flavor. Results from t-tests partly support findings from the qualitative interviews, where consumers in Barcelona and Comunidad Valenciana value salted cod that are thick and white in a larger scale than in Santander. This may be due to importance of conservation in the products among Cantabria consumers. Another regional difference is the consumption of the younger generation. In Santander interviewees believe that there is no big difference between the age groups and that there is renewal in the market. This is in contrast to statements from interviewees in the other two regions where they believe that the younger generation to a smaller extent buys salted cod, which is supported by the quantitative analysis. Some of the seller thinks this comes from this generation's consumption pattern where a large part of the diet consists of fast food, chicken, sushi and other food trends. Other reasons may be that the preparation of salted cod is too time consuming if they are working full time, or that many live alone so it is not appropriate to make traditional meals from scratch. Consumption in Spain increases before and around Easter. The religious motives for upholding this ritual are not as strong as before, but it has become a tradition that many choose to follow. Even though salted cod is purchased and eaten throughout the week, it is time-consuming to prepare, and many prefer to prepare traditional salted cod dishes for the weekend, for special occasions or choose ready-to-cook products.

COO seems to be of little importance for consumers, what matters is quality, appearance and price. This contradicts the findings of Parkvithee and Miranda (2012), who states that consumers increasingly care about country of origin of products. As mentioned, the quantitative results show that quality and appearance is important, while price is not important. This is not in coherence with the qualitative findings. There is very little knowledge about the origin of salted cod. Very few customers ask about the origin, and those that do seem to ask out of curiosity rather than because they actually care. Consumers who are aware that cod comes from cold seas, but few could elaborate on this. Those consumers who are aware of origin are aware of Iceland. This may be because most places where salted cod is sold, it is, clearly signposted with "Iceland". Country of origin awareness has a positive effect on purchase intention for those consumers who can recognize the differences between Norwegian and Icelandic salted cod. This is supported by Rezvani et al (2012). To increase awareness, marketing campaigns or more distinct labeling could be implemented. Norwegian producers and exporters have an additional resource in the Norwegian Seafood Council (NSC). NSC promotes Norwegian seafood abroad with the aim to increase awareness, and

they have created the “Norge” logo. This label is widely used on the more known Norwegian products salmon and skrei. The awareness for salmon and skrei in the Spanish market is high, and is very often labeled with the “Norge” brand. It could be an alternative to attempt to benefit from country of origin awareness for these products as they are perceived to be of the highest quality. In the traditional markets and the pescaderías there was a predominance of Icelandic salted cod. Some interviewees state that their importers exclusively work with Icelandic salted cod. In the supermarkets, salted cod is mainly labeled FAO27 or with origin from Iceland. There were a few cases labeled Russia, the Faroe Islands and the Norwegian ocean, but this was only in the supermarkets. 53, 7 % of the salted fish was sold through supermarkets and hypermarkets. In addition, the majority of exports from Norway are sold to production companies which use their own label. Hence, Norwegian salted cod is often not labeled with origin making it difficult for consumers to form a country of origin awareness. When it comes to sellers, there are wide variations in awareness and knowledge of salted cod with Norwegian origins. Some sellers think there is a quality difference between the Icelandic and Norwegian fish and that this can be ascribed the different catching and processing methods, such as the use of different fishing gears e.g. trawl and long line. This also has an effect on the quantity of fish that can belong to the different quality classification classes imperial/superior, universal and popular. The Norwegian exporters and publicly available information from Iceland and Norway to some extent confirms this. The quality of Norwegian cod varies, and Norway has had difficulty delivering fish with good and stable quality. In addition, Icelandic producers have done a great job of adapting their products to the preferences in the Spanish market. Norwegian producers do not have the same filet capacity as Iceland, and do not use phosphate in the production to achieve the white color. Since the Norwegian producers do not have enough fillets capacity nor uses phosphate in the production, major changes are required in order to meet market demands in Spain. The cost of changing production in accordance with these demands will naturally be costly and one may ask whether the potential benefits are large enough to justify this. However one must take into account that markets are evolving, and that it may be important for the future to keep up with developments.

In Iceland they also have full control over the value chain since they are vertically integrated, which means that they have better control of quality and quantities, and can fully exploit the potential in the value chain. One does not have the same opportunity in Norway. This is highly debated in Norway, and the Tveteraas Committee has examined the possible

consequences for Norway if one allows such a structure also in this country. However, this is an entirely different debate, but such a structure will have both advantages and disadvantages. As we see it, it is a combination of preferences, quality and to some extent price, which is essential for purchase intention. Country of origin in Norway's case seems to have no importance since the awareness is low.

## **7.2 Managerial implications**

The aim of this thesis is to test if country of origin has an effect on purchase intention of Norwegian salted cod in Spain. Previous research has been conducted regarding country of origin and purchase intention, but to our knowledge there are not any recent studies that combine consumers and the distribution chain in Spain, in addition to exporters in Norway. The research findings are of importance for exporters and producers with interests in the Spanish market. In our thesis, we find that the country of origin awareness (COOA) for Norwegian salted cod is low. The findings indicate that Norway has a weak position in the Spanish market and it is therefore of interest to identify the possible reasons. Consumers purchase intentions are driven by product attributes, and COOA has little influence. It is still important to look at these attributes in order to gain a better understanding of the situation. As of today, Norway does not deliver products in line with the preferences in the Spanish market. To increase market share one must either produce in accordance with current market demands, or choose to compete on price, or by emphasizing the positive attributes in their own product. Norwegian products are already priced lower than Icelandic without it having any significant effect. Information from qualitative interviews and public information, revealed that Norwegian cod have a different catching method than Icelandic cod making the salted cod less appealing, indicating that here lies a potential for improvement

The major challenge for Norwegian exporters in this industry is the customers' perceptions of products with respect to country of origin, country image and brand equity. Another challenge is connected to market concentration. The fishing industry has become consolidated and more concentrated in several countries which have led to fewer, but larger food enterprises with more bargaining power. Wholesalers and restaurants still have some influence regarding demand, but the market power has gradually shifted to the large supermarket chains where consumers buy their food. The quality difference between Norwegian and Icelandic salted cod could be caused by variations in raw material handling,

salting procedures, the use of additives or a combination of these mentioned factors, but it is only an assumption and not clearly understood.

### **7.3 Limitations and suggestions for further research**

Our primary intention was to measure and compare purchase intentions for both Norwegian and Icelandic salted cod through a survey. This proved to be impossible when the pre-test was conducted, as most consumers are not able to differentiate between origins and the survey was altered accordingly. The overall purchase intention regardless of country of origin was examined, with an emphasis on qualitative method targeting consumers. The in-depth interviews were conducted with consumers, participants from the distribution chain in Spain, as well as exporters in Norway.

Qualitative methods have been criticised with arguments that the researcher could be affected by background and experiences in the process of interviews, problem definitions and conclusion (Winchester, 2005). Many sources of error can occur, which in turn can affect the reliability and validity of the research. The questionnaire was developed in accordance with the research question. The collected data is directly linked to the research question, thus the validity for this thesis is seen as high. The major limitation regarding the quantitative analysis is the sample size. Even though we hoped for 150 respondents, it proved to be harder than expected to collect the data in Spain, as the knowledge and awareness of salted cod is low.

81 completed responses are a small sample; however, it gives valuable information and is used as confirmation of the qualitative analysis. Since it was difficult to find respondents for the survey, family and friends of respondents were asked to answer it. In addition to this, some respondents discussed the questions with each other when filling out the questionnaire. Some may therefore have given answers that do not necessarily represent the individual consumer.

Results of the analysis gave us indications to eliminate several questions that were not reliable in accordance with our dependent variables; brand image and purchase intention. Therefore, a single measure was used in order to measure country of origin awareness, while two out of three measures was used to measure distribution. Scales consisting of three or more items are preferable, and future studies should ensure a more acceptable reliability.

The number of international companies has increased with globalization and more research is required about the performance of customers, their purchase decisions and the effect of country of origin. The research should lead marketers and managers in the global market to increase

knowledge and profitability. There are several studies of country of origin and the effect of purchase behaviour in the fishing industry, but studies combining the distribution chain, exporters and consumers in order to give a broader picture are missing. This would be an interesting angle for further research to fully investigate the current situation in the market. In addition, it would be very interesting to compare Icelandic and Norwegian producers and exporters. Future research on the subject should also focus on respondents from other regions in Spain and especially the regions close to Portugal where large differences may appear.

## 7.4 Concluding remarks

This thesis aims to answer the research questions;

*-How does country of origin affect purchase intention of Norwegian salted cod in Spain?*

*-How do product preferences differ between regions in Spain?*

*-Can Spanish consumers differentiate between Norwegian and Icelandic salted cod?*

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Results from the regression analyses show that country of origin awareness does affect purchase intention, but few consumers in Spain are aware of the origin. This contradicts the findings from the in-depth interviews, where country of origin had very little significance. Results show that quality, product range (V23) and brand awareness have a significant positive effect on the image of salted cod. Country of origin awareness and brand image has a significant positive effect on purchase intention, and purchase intention is higher if consumers are aware of the origin. Brand awareness has an effect on purchase intention, but is not significant. Results show that the price did not influence brand image or purchase intention, and that quality is the most valuable driver for brand image and thereby purchase intention. This may be seen as a result of the recovering economy in Spain, or that consumers of salted cod has predetermined to purchase the product regardless of price but based on perceived quality. The last statement is based on information from in-depth interviews. The prices are higher in the fishmongers and fish markets, and consumers are conscious on where and what to purchase.

We have identified that attributes such as color, thickness, and quality affect consumer choice. In addition, we can draw parallels to interviews where quality and the other attributes were more important for purchase intention. We have also seen a higher price, better marketing and better branding for Icelandic cod.

Product preferences differ between the regions with regards to thickness, freshness, color and texture, and very few consumers can differentiate between Norwegian and Icelandic salted cod. Table 7.1 provides an overview of the results for the hypotheses.

**Table 7.1 Results of hypotheses**

Hypothesis 1: <i>Country of origin awareness has a significant positive effect on brand image</i>	Rejected
Hypothesis 2: <i>Country of origin awareness has a significant positive effect on purchase intention</i>	Not rejected
Hypothesis 3: <i>Brand awareness has a significant positive effect on brand image</i>	Not rejected
Hypothesis 4: <i>Brand awareness has a significant positive effect on purchase intention</i>	Rejected
Hypothesis 5: <i>Brand image has a significant positive effect on purchase intention</i>	Not rejected



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## APPENDIX

### Appendix 1: Literature review, country of origin

Author(s)	Year	Research aim	Method	Findings
Keller	1993	How to build, measure and manage customer-based brand equity	Article	Customer-based brand equity occurs when the consumer is familiar with the brand and holds some favorable, strong and unique brand associations in memory.
Jagdish Agrawal, Wagner A. Kamakura	1999	To explore whether country of origin is a competitive advantage or only one extrinsic cue among many extrinsic and intrinsic cues available to the consumer in a real purchase situation.	Meta-analysis	The objective product quality varies significantly by country of origin and competitive advantage comes from the quality of the product and the ability to charge price premiums. It is the differences in product quality rather than the image effect produced by the country of origin cue that effects purchase intention.
Laroche, Molson, Papadopoulou and Heslop, Mourali	2005	Extend knowledge of cognitive processing of country of origin cues by refining the concept of country image and investigating its role in product	Questionnaire	Country image is a three-dimensional concept consisting of cognitive, affective, and conative components. Country image and product beliefs affect product evaluations simultaneously regardless of consumers' level of familiarity with a country's products. The structure of country

		evaluations.		image influences product evaluations both directly and indirectly through product beliefs.
Yasin	2007	To explore the effects of brand's country-of-origin image on the formation of brand equity	Survey/ data collection	Brand's country of origin image positively and significantly influences dimensions of brand equity. The results from the study also showed that brand's country of origin image influences brand equity, either directly or indirectly, through the mediating effects of brand distinctiveness, brand loyalty and brand awareness/associations.
Wang & Yang	2008	Investigate the relationship between brand personalities, country of origin image and purchase intention.	Cross-city survey	Both brand personality and country of origin image exert significant positive main effects in purchase decision. Between brand personality and purchase intention, country of origin is found to be a positive moderator. A positive country of origin image could enhance brand personality positive impact on purchase intention, whereas a negative country of origin image could significantly decrease the positive brand personality on purchase intention.
Zeugner- Roth &	2009	A reply to Samiee's criticism	Article	Reply to Samiee's criticism where the authors defend their

Diamantopoulos		from a previous article		conclusions on previous research.
Lee & Lee	2009	Examine the effects of country of origin cues on product evaluation and purchase intention and how and to what extent objective and subjective knowledge affect consumers' information processing when country of origin cues are present.	Article	Consumers with high product knowledge were less likely to be influenced by country of origin cues in their product evaluation. Consumers with high objective knowledge would be less likely to rely on country of origin cues in their product evaluation. However, there was no significant relationship between country of origin cues and consumers' subjective knowledge.
Wang, Li, Barnes, Ahn	2011	Provide evidence to suggest that cognitive country image is not necessarily consistent with affective country image.	Survey	Cognitive and affective country image have a different impact on the intention to purchase.



Rezvani, Dehkordi, Rahman, Fouladivanda, Habibi & Eghtebasi	2012	Review the country of origin literature and mention different variables that influence consumer purchase intention based on the previous literature.	Literature review	Product knowledge, country image and patriotism are various factors that have an impact on country of origin cues. Country of origin as an extrinsic cue has considerable influence on the consumer purchase intention.
Kamal, Ghalandari and Abdollah, Norouzi	2012	To investigate the effects of country-of-origin (COO) cues on purchase intention by considering the role of product knowledge.	Questionnaire	The effect of production origin country on willingness to purchase in individuals with low product knowledge is greater than in those with high product knowledge; also the effect of production origin country on willingness to purchase in individuals with low objective knowledge is greater than that in those with high objective knowledge.
Parkvithee, Narissara and Miranda, Mario J	2012	To examine the effect of interaction of country-of-origin, brand equity and product purchase involvement on consumers' evaluation and purchase preference	Survey	If low purchase involvement apparel with high brand equity is sourced from a country of origin of low perceived competence, the superior reputation of the brand encourages consumer partiality to the clothes quality and purchase inclination.

		on Thai brands.		
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## **Appendix 2: In-depth interview template in English**

Region/City:

Location:

1. What are the different salted cod products you sell/import?
2. What is the origin of the salted cod you sell?
2. Which products are preferred by consumers?
3. In your opinion, what is the best salted cod product?
4. Does customers ask for country of origin?
5. Do you believe consumers are aware of the country of origin when purchasing salted cod?
6. What is most important for customers when purchasing salted cod?
7. Do you think that consumers are turning more to products that are quick to cook?
8. Do you think there is a change in the consumption pattern?
9. Which qualities do you rank highest for salted cod?
10. Do you prefer salted cod from Iceland, Norway or other countries? Why?
11. How important is price for consumers when they choose which products to buy?
12. What do you think about the future of salted cod?
13. Who purchases salted cod products?
14. Is the demand even throughout the year?
15. What is your perception of the market for salted cod products? Is there anything you would add?

## Appendix 3a: Questionnaire to consumers in English

Country of origin and the effect on purchase intention of salted cod from Norway: A case study of the Spanish market

1. Evaluate the importance to you the following features of salted cod as a buyer.  
(1: Not important 2: Very little Important 3: Of little importance 4: Indifferent 5: Somewhat important 6: Important 7: Very important)

	1	2	3	4	5	6	7
Price							
Color							
Thickness							
Brand							
Freshness							

2. Do you know the country of origin of salted cod you usually purchase?

Yes  No

3. (Yes) What is the country of origin of the salted cod you purchase the most?

Spain  Norwegian  Iceland  Faeroe Islands  Other, please specify:

4. What kind of cod do you purchase most often?

Salted cod  Desalted cod  Frozen cod  Fresh cod

5. What kind of cod products do you purchase most often?

Baeslada  Fillet  Joints  belly  crumbs  Cocochas  
 Other, please specify:

6. How long do you typically use when preparing salted cod?

0-20 min  20-40 min  40-60 min  More than 1 hour

7. Evaluate the importance for you:

(1: Not important 2: Very little Important 3: Of little importance 4: Indifferent 5: Somewhat important 6: Important 7: Very important)

	1	2	3	4	5	6	7
Preparation time							
Flavor							
Color							

### Price:

	1	2	3	4	5	6	7
Salted cod gives value for money							
The quality is very good compared to the price							
I would choose cod regardless of price							

### Distribution / Services:

(1: Very Bad 2: Poor 3: Somewhat poor 4: Good 5: Somewhat good 6: Good 7: Very Good)

	1	2	3	4	5	6	7
Cod is easy to find in stores.							
Vendors give good information and recommend cod.							

### Brand awareness:

(1: Strongly disagree 2: Disagree 3: Somewhat Disagree 4: Neither agree nor disagree 5: Somewhat Agree 6: Agree 7: Strongly Agree)

	1	2	3	4	5	6	7
I am well aware of salted cod							
I have good knowledge of salted cod products							

### Brand image:

	1	2	3	4	5	6	7
In my opinion, salted cod has a good reputation.							
I think my friends / family have a good impression of salted cod.							
In my opinion, society in general believes that salted cod has a good reputation.							

### Part Four: General Information

1. Gender:  Male  Female

2. Age:  16-25  26-35  36-45  46-55  56-65  
 66 or more

3. Size of household:  1  2  3  4  
 5 or more

Thickness							
Freshness							
Conservation							

Other, please specify:

### Part Two: Intention to Purchase

1. I intend to buy salted cod soon

1	2	3	4	5	6	7

2. Do you recognize the difference between salted cod from Norway and salted cod from Iceland?

Yes  No

In yes, please answer the NEXT question.

3. I intend to buy salted cod from:

	1	2	3	4	5	6	7
Norway							
Iceland							

### Part Three: External features, price, quality and service

(1: Strongly disagree 2: Disagree 3: Somewhat Disagree 4: Neither agree nor disagree 5: Somewhat Agree 6: Agree 7: Strongly Agree)

	1	2	3	4	5	6	7
The cod is white, thick and appealing							
I can choose from a wide range of salt cod							
I think cod is fresh and a healthy product, without additives							

### Quality of the product:

	1	2	3	4	5	6	7
In my opinion cod is a high quality fish							
In my opinion, cod producers always deliver high quality products							
In my opinion cod it is of better quality than the alternatives							

4. Region:  Cantabria  Comunidad Valenciana  
 Cataluña  Other, please specify:

5. Where do you consume salted cod the most?

At home  Hotel or restaurants  Other, please specify:

6. How often do you purchase salted cod?

Never  Less than twice a month  1-4 times a month  5-8 times a month  more than 8 times a month

7. Where do you purchase salted cod?

Supermarkets  Fish markets  Other, please specify:

8. What is your preferred product of salted cod? Please specify:

9. What is the annual income of your household:

Less than 15.000 euros  15.000 - 25.000 euros  More than 25.000 euros

Thank you very much for your participation. It is much appreciated.

## Appendix 3b:

## Questionnaire to consumers in Spanish

### Pais de origen y el efecto sobre la intención de compra del bacalao salado de Noruega: Un estudio de caso del mercado español

1. Evalúe la importancia que tienen para usted las siguientes características del bacalao salado como comprador.  
(1: No es importante 2: Muy poco importante 3: Poco importante 4: Indiferente 5: Algo importante 6: Importante 7: Muy importante)

	1	2	3	4	5	6	7
Precio							
Color							
Espesor							
Marcas							
Frescura							

2. Conoce el país de origen del bacalao que suele comprar?  
 Sí  No
3. (SI) ¿Cuál es el país de origen del bacalao salado que compra con más frecuencia?  
 España  Noruega  Islandia  Las Islas de Feroe  Otro, por favor especifique:
4. ¿Qué tipo de bacalao es el que compra más frecuentemente?  
 Bacalao salado  Bacalao desalado  congelado  fresco
5. ¿Qué tipo de productos de bacalao compra más frecuentemente?  
 Bacalada  Filete  Lomos  ventresca  migas  Cocoñas  Otro, por favor especifique:
6. ¿Cuánto tiempo suele utilizar cuando prepara el bacalao salado?  
 0-20 min  20-40 min  40-60 min  Más de 1 hora

7. Evalúe la importancia que tiene para usted:  
(1: No es importante 2: Muy poco importante 3: Poco importante 4: Indiferente 5: Algo importante 6: Importante 7: Muy importante)

	1	2	3	4	5	6	7
Tiempo de preparación							
Sabor							
Color							
Espesor							
Frescura							
Conservación							

Otro, por favor especifique:

### Segunda parte: Intención de Compra

1. Tiene la intención de comprar bacalao salado próximamente?
- |  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|---|---|---|---|---|---|---|
|  |   |   |   |   |   |   |   |
2. ¿Reconoce una diferencia entre el bacalao salado de Noruega y de Islandia?  
 Sí  No
- En caso afirmativo, por favor conteste la siguiente pregunta.
3. Tengo la intención de comprar bacalao salado de:
- |          | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|----------|---|---|---|---|---|---|---|
| Noruega  |   |   |   |   |   |   |   |
| Islandia |   |   |   |   |   |   |   |

### Tercera parte: Las características externas, precio, calidad y servicio

(1: Totalmente en desacuerdo 2: En desacuerdo 3: Algo en desacuerdo 4: Ni de acuerdo ni en desacuerdo 5: Algo de acuerdo 6: De acuerdo 7: Muy de acuerdo)

	1	2	3	4	5	6	7
El bacalao es de color blanco, espeso y atractivo							
Puedo elegir entre una amplia gama de productos de bacalao salado							
Creo que el bacalao es un producto fresco y saludable, sin aditivos							

### Calidad del producto:

	1	2	3	4	5	6	7
En mi opinión el bacalao es un pescado de alta calidad							
En mi opinión, los productores de bacalao siempre entregan productos de alta calidad							
En mi opinión el bacalao es de mejor calidad que las alternativas							

### Precios:

	1	2	3	4	5	6	7
El bacalao salado tiene una buena relación calidad-precio							
La calidad es muy buena en comparación con el precio							
Yo elegiría bacalao independientemente del precio							

### Distribución/servicio:

(1: Muy mal 2: Mal 3: Algo mal 4: Razonable 5: Algo bueno 6: Bueno 7: Muy bueno)

	1	2	3	4	5	6	7
El bacalao es fácil de encontrar en las tiendas.							
Los vendedores dan buena información y recomiendan bacalao.							

### Reconocimiento de marcas

(1: Totalmente en desacuerdo 2: En desacuerdo 3: Algo en desacuerdo 4: Ni de acuerdo ni en desacuerdo 5: Algo de acuerdo 6: De acuerdo 7: Muy de acuerdo)

	1	2	3	4	5	6	7
Soy muy consciente del bacalao salado							
Tengo buen conocimiento de los productos del bacalao salado							

### Imagen de marca:

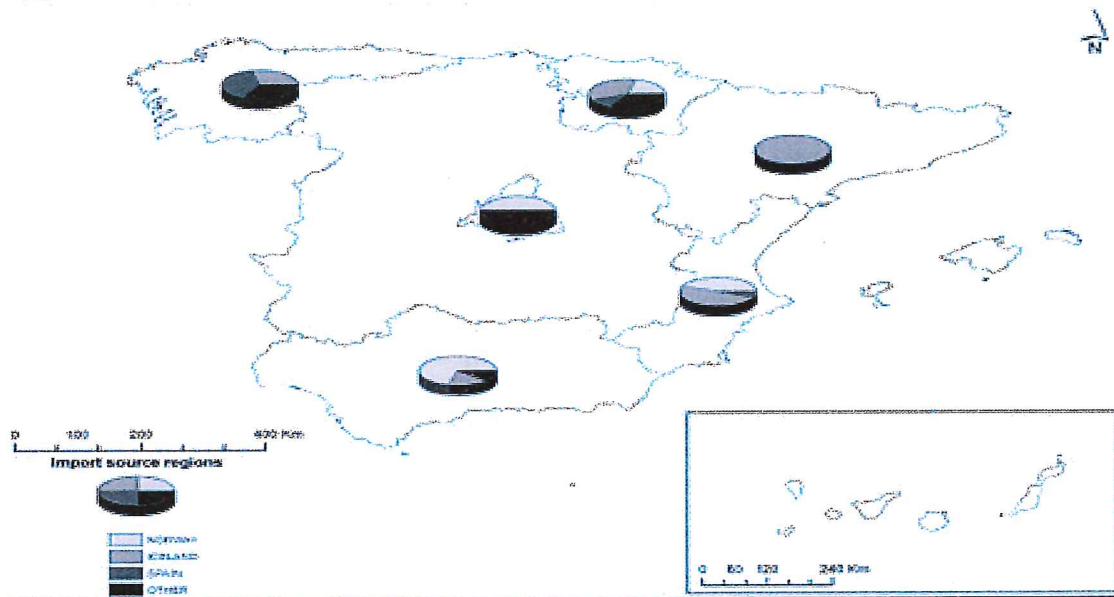
	1	2	3	4	5	6	7
En mi opinión el bacalao salado tiene una buena reputación.							
Creo que mis amigos/familia tienen una buena impresión del bacalao salado.							
En mi opinión, la sociedad en general considera que el bacalao salado tiene una buena reputación.							

### Cuarta parte: Información general

1. Sexo:  Hombre  Mujer
2. Edad:  16-25  26-35  36-45  46-55  56-65  más de 66
3. Número de habitantes en su hogar:  1  2  3  4  5 o más
4. Región:  Cantabria  Comunidad Valenciana  Cataluña  Otro, por favor especifique:
5. ¿Cuál es su lugar de consumo más frecuente?  En casa  Hotel o Restaurante  Otro, por favor especifique:
6. ¿Con qué frecuencia compra usted el bacalao salado?  
 Nunca  Menos de dos veces al mes  1-4 veces al mes  5-8 veces al mes  más que 8 veces al mes
7. ¿Dónde compra usted el bacalao salado?  
 Supermercados  Pescaderías  Otro, por favor especifique:
8. ¿Cuál es su producto de bacalao salado preferido? Por favor especifique:
9. ¿Cuál es el ingreso anual de su hogar:  
 menos 15.000 euros  15.000 - 25.000 euros  más de 25.000 euros

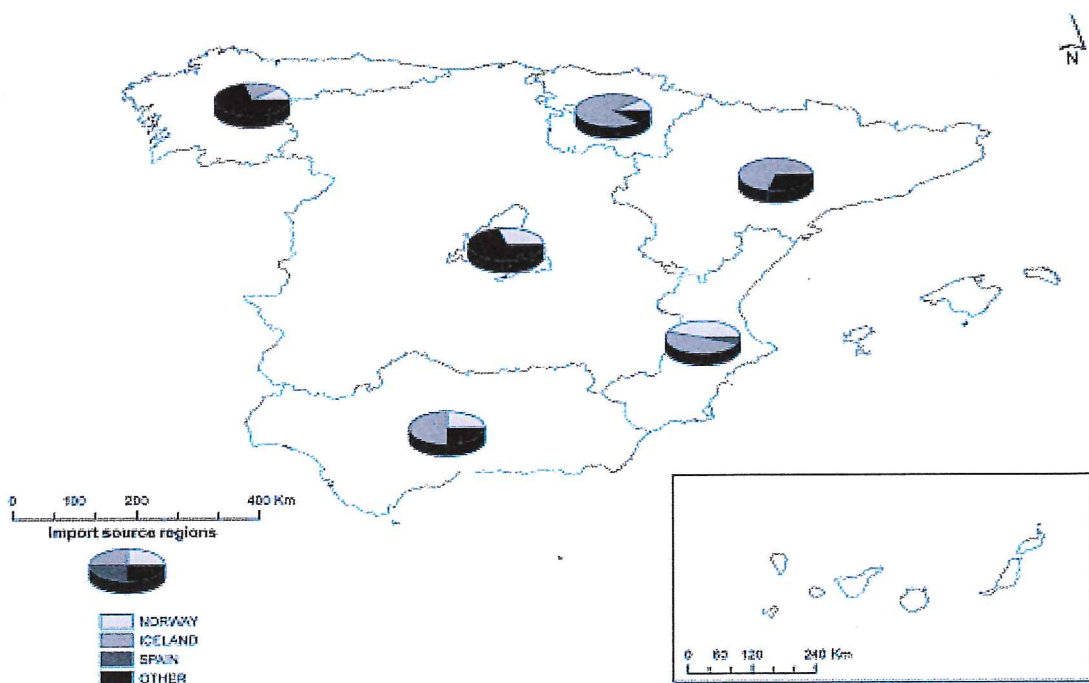
Muchas gracias por su participación. Es muy apreciada.

**Appendix 4a: Countries of origin of imports (2000)**



SOURCE: (DATACOMEX.COMERCIO/ES, 2015 CITED IN SEGUÍ AND ALBA, 2011)

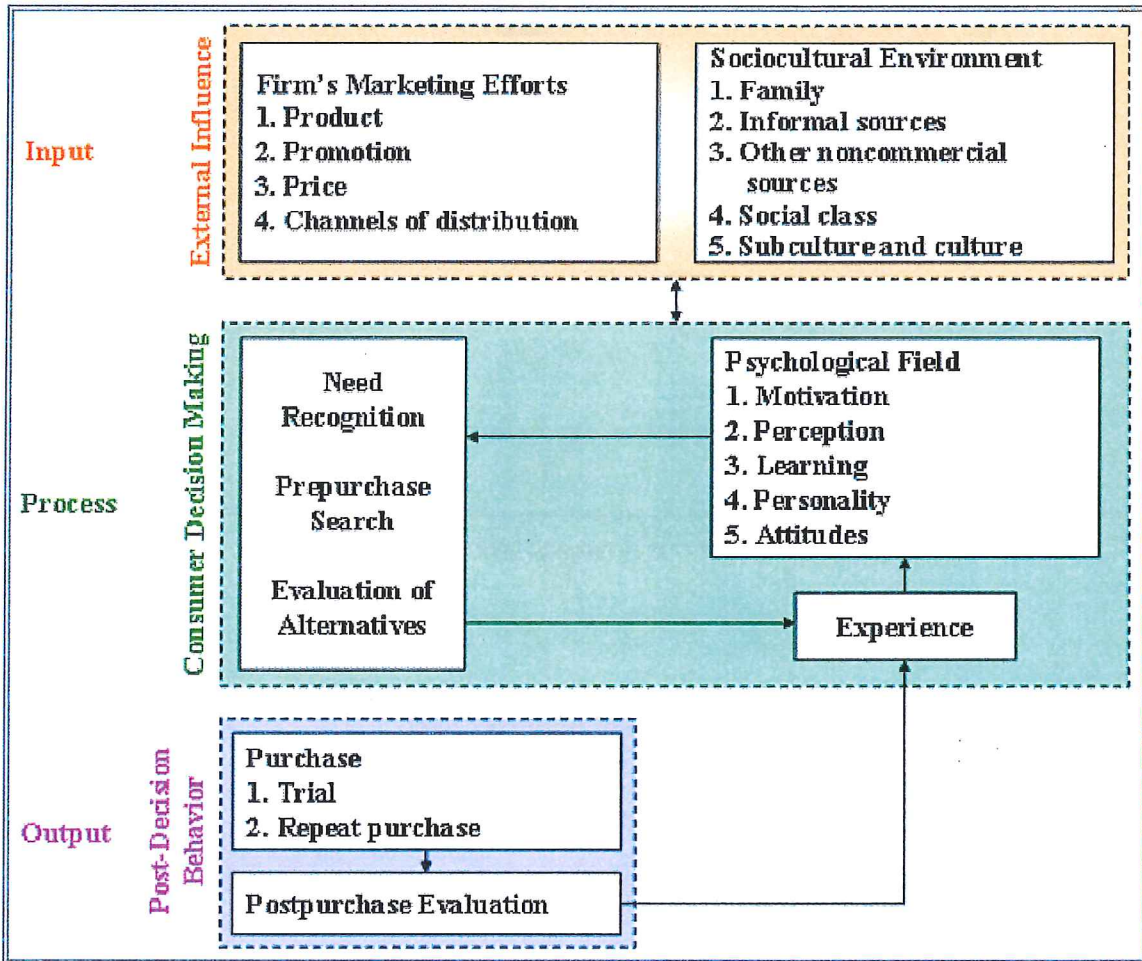
**Appendix 4b: Countries of origin of imports (2008)**



Source: (datacomex.comercio/es, 2015 cited in Seguí and Alba, 2011)

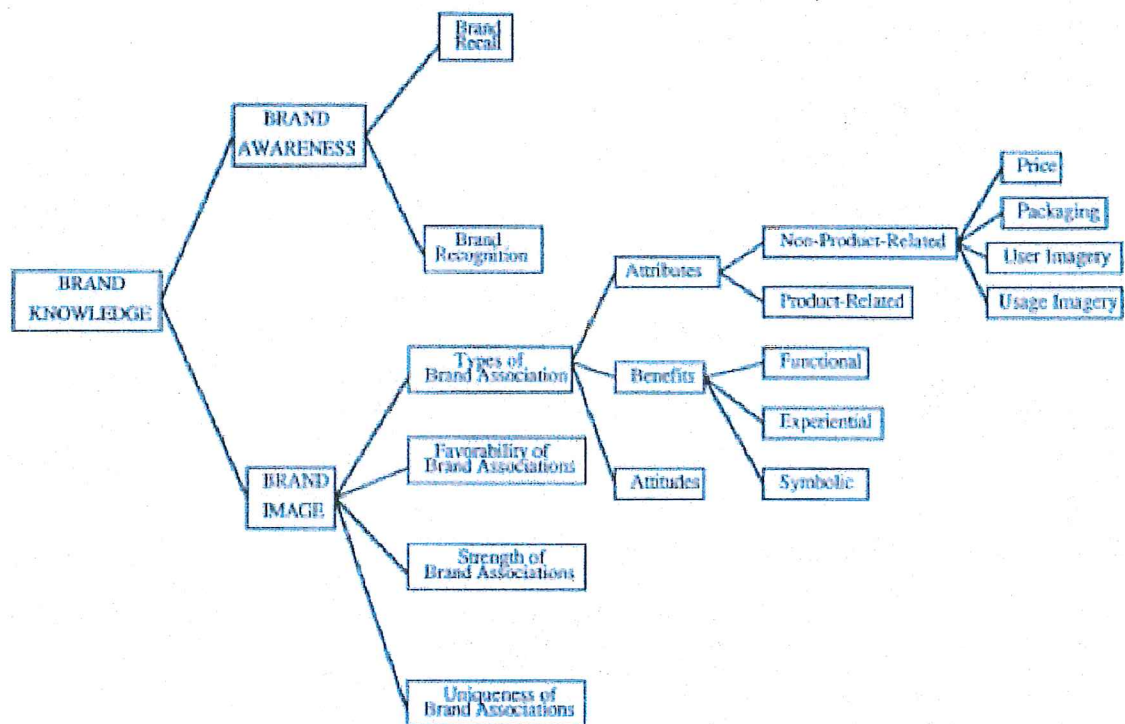


Appendix 5: A simple model of consumer decision-making



Source: (Schiffman et al., 2012)

## Appendix 6: Dimensions of Brand Knowledge



Source: (Keller 1993)



## Appendix 7: Data analysis

### 7.1 Descriptive analyses

#### Appendix 7.1a -Region

		Region			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Cantabria	31	38,3	43,1	43,1
	Comunidad Valenciana	23	28,4	31,9	75,0
	Catalonia	12	14,8	16,7	91,7
	Other	6	7,4	8,3	100,0
	Total	72	88,9	100,0	
Missing	System	9	11,1		
Total		81	100,0		

#### Appendix 7.1b -Gender

		Gender			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	female	40	49,4	56,3	56,3
	male	31	38,3	43,7	100,0
	Total	71	87,7	100,0	
Missing	System	10	12,3		
Total		81	100,0		

#### Appendix 7.1c -Age

		Age			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	16-25	4	4,9	5,6	5,6
	26-35	9	11,1	12,5	18,1
	36-45	23	28,4	31,9	50,0
	46-55	18	22,2	25,0	75,0
	56-66	14	17,3	19,4	94,4
	67+	4	4,9	5,6	100,0
	Total	72	88,9	100,0	
Missing	System	9	11,1		
Total		81	100,0		

#### Appendix 7.1d -Income household

		Income household			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	>15.000	10	12,3	14,5	14,5
	15.000-25.000	30	37,0	43,5	58,0
	<25.000	29	35,8	42,0	100,0
	Total	69	85,2	100,0	
Missing	System	12	14,8		
Total		81	100,0		

Appendix 7.1e – Purchase frequencies

**How many times a month do you purchase salted cod?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	none	6	7,4	8,3	8,3
	less than 2	28	34,6	38,9	47,2
	1-4	32	39,5	44,4	91,7
	4-8	5	6,2	6,9	98,6
	8+	1	1,2	1,4	100,0
	Total	72	88,9	100,0	
Missing	System	9	11,1		
Total		81	100,0		

Appendix 7.1f -Consumption location

**Where do you consum salted cod?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Home	59	72,8	83,1	83,1
	Hotel_or_restaurant	12	14,8	16,9	100,0
	Total	71	87,7	100,0	
Missing	System	10	12,3		
Total		81	100,0		

Appendix 7.1g –Purchase location

**Where do you purchase salted cod?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	supermarkets	29	35,8	41,4	41,4
	Fishmongers	20	24,7	28,6	70,0
	other	21	25,9	30,0	100,0
	Total	70	86,4	100,0	
Missing	System	11	13,6		
Total		81	100,0		

Appendix 7.1h –Preferred product type

8. ¿Cuál es su producto de bacalao salado preferido?		% of Respondents	Number of Respondents
con tomate	█	1.64%	1
salado	█	1.64%	1
ninguno	█	1.64%	1
Lomos	█	1.64%	1
lomo	█	1.64%	1
skrei	█	1.64%	1
(No other answer provided)	█	3.28%	2
el noruego	█	1.64%	1
filete y lomos	█	1.64%	1
cococho	█	1.64%	1
Lomo	█	4.92%	3
lomos	█	11.48%	7
cocochoas, lomos	█	1.64%	1
Cocochoes	█	4.92%	3
Bacalada/Filets	█	1.64%	1
filete	█	8.20%	5
Lomos	█	24.59%	15
cocochoas	█	8.20%	5
cocochoas, miga	█	1.64%	1
migas	█	4.92%	3
el bacalao	█	1.64%	1
cocochoas	█	1.64%	1
bacalada	█	4.92%	3
lomos, migas	█	1.64%	1

Appendix: Factor analysis

7.2 Brand image

Appendix 7.2a: Descriptive statistics – brand image items

Items	N	Mean	Std.Deviation	Skewness	Kurtosis
V34	73	5.77	1.339	-1.130	.865
V35	73	5.63	1.390	-.932	.186
V36	72	5.61	1.420	-.824	-.063

Appendix 7.2b –KMO and Bartlett’s Test

**KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,756
Bartlett's Test of Sphericity	Approx. Chi-Square	162,869
	df	3
	Sig.	,000

Appendix 7.2c –Total Variance Explained

**Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,611	87,022	87,022	2,611	87,022	87,022
2	,234	7,798	94,819			
3	,155	5,181	100,000			

Extraction Method: Principal Component Analysis.

Appendix 7.2d –component matrix

**Component Matrix<sup>a</sup>**

	Component
	1
Society in general think salted cod has good reputation	,946
I think salted cod has a good reputation	,933
My family and friends thinks salted cod has good reputation	,920

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Appendix 7.2e-reliability statistics

**Reliability Statistics**

Cronbach's Alpha	N of Items
,925	3

Appendix 7.2f –Item-Total Statistics

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I think salted cod has a good reputation	11,24	7,169	,848	,892
My family and friends thinks salted cod has good reputation	11,39	7,030	,822	,912
Society in general think salted cod has good reputation	11,40	6,666	,873	,870

### 7.3 Brand awareness

#### Appendix 7.3a Descriptive statistics – brand awareness

Items	N	Mean	Std.Deviation	Skewness	Kurtosis
V32	74	5.05	1.759	-.675	-.456
V33	72	5.03	1.784	-.686	-.493

#### Appendix 7.3b- Correlation Matrix

**Correlation Matrix**

		I am well aware of Salted cod	I have good knowledge of products of salted cod
Correlation	I am well aware of Salted cod	1,000	,715
	I have good knowledge of products of salted cod	,715	1,000

#### Appendix 7.3c –KMO and Bartlett’s test

**KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	,500
Bartlett's Test of Sphericity	Approx. Chi-Square
	49,852
	df
	1
	Sig.
	,000

#### Appendix 7.3d- Total Variance Explained

**Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1,715	85,775	85,775	1,715	85,775	85,775
2	,285	14,225	100,000			

Extraction Method: Principal Component Analysis.

#### Appendix 7.3e- Component Matrix

**Component Matrix<sup>a</sup>**

	Component
	1
I am well aware of Salted cod	,926
I have good knowledge of products of salted cod	,926

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Appendix 7.3f- Reliability Statistics

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,834	,834	2

7.4 Price

Appendix 7.4a- Descriptive statistics – price

Items	N	Mean	Std.Deviation	Skewness	Kurtosis
V27	74	5.11	1.420	-.904	.567
V28	71	4.97	1.320	-.215	-.499
V29	72	4.81	1.828	-.429	-.912

Appendix 7.4b- Correlation Matrix

**Correlation Matrix**

		Salted cod is a good value for money	The quality is very good compared to the price	I would choose cod regardless of price
Correlation	Salted cod is a good value for money	1,000	,624	,340
	The quality is very good compared to the price	,624	1,000	,437
	I would choose cod regardless of price	,340	,437	1,000

Appendix 7.4c- KMO and Bartlett's Test

**KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	,624
Bartlett's Test of Sphericity	48,049
df	3
Sig.	,000

Appendix 7.4d- Total Variance Expained

**Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1,945	64,835	64,835	1,945	64,835	64,835
2	,691	23,042	87,876			
3	,364	12,124	100,000			

Extraction Method: Principal Component Analysis.

Appendix 7.4e- Component Matrix

**Component Matrix<sup>a</sup>**

	Component 1
The quality is very good compared to the price	,873
Salted cod is a good value for money	,830
I would choose cod regardless of price	,703

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Appendix 7.4f- Reliability Statistics

**Reliability Statistics**

Cronbach's Alpha	N of Items
,834	2

7.5 Distribution:

Appendix 7.5a- KMO and Bartlett's Test

**KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,429
Bartlett's Test of Sphericity	Approx. Chi-Square	16,011
	df	3
	Sig.	,001

Appendix 7.5b- Reliability Statistics

**Reliability Statistics**

Cronbach's Alpha	N of Items
,425	3

Appendix 7.5c- Item-Total Statistics

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
The vendors give good information and recommend cod	11,44	3,497	,457	-,092 <sup>a</sup>
Cod is easy to find in stores	10,89	4,132	,205	,446
I can choose from a wide range of salted cod	10,41	5,666	,139	,506

a. The value is negative due to a negative average covariance among items. This violates reliability model assumptions. You may want to check item codings.

## 7.6 Quality

### Appendix 7.6a Descriptive statistics – quality

Items	N	Mean	Std.Deviation	Skewness	Kurtosis
V24	71	5.24	1.409	-.914	.603
V25	70	4.66	1.605	-.369	-.298
V26	70	5.49	1.700	-1.076	-.373

### Appendix 7.6b- Correlation Matrix

#### Correlation Matrix

		In my opinion, cod is a high quality fish	In my opinion, the producers always deliver high quality products	In my opinion, cod is of better quality than the alternatives
Correlation	In my opinion, cod is a high quality fish	1,000	,417	,312
	In my opinion, the producers always deliver high quality products	,417	1,000	,411
	In my opinion, cod is of better quality than the alternatives	,312	,411	1,000

### Appendix 7.6c- KMO and Bartlett's Test

#### KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,642
Bartlett's Test of Sphericity	Approx. Chi-Square	26,844
	df	3
	Sig.	,000

### Appendix 7.6d- Total Variance Explained

#### Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	1,762	58,740	58,740
2	,688	22,943	81,683
3	,550	18,317	100,000

Extraction Method: Principal Component Analysis.



Appendix 7.6e- Component Matrix

**Component Matrix<sup>a</sup>**

	Component
	1
In my opinion, the producers always deliver high quality products	,809
In my opinion, cod is a high quality fish	,746
In my opinion, cod is of better quality than the alternatives	,742

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Appendix 7.6f -Reliability Statistics

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,646	,648	3

Appendix 7.6g- Item-Total Statistics

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
In my opinion, cod is a high quality fish	10,19	7,858	,435	,201	,580
In my opinion, the producers always deliver high quality products	10,74	6,526	,511	,263	,469
In my opinion, cod is of better quality than the alternatives	9,90	6,661	,430	,191	,590

7.7 Product

Appendix 7.7a -Descriptive statistics – product

Items	N	Mean	Std.Deviation	Skewness	Kurtosis
V21	74	5.76	1.373	-1.830	3.524
V22	70	5.74	1.163	-.898	.588
V12	79	6.34	1.197	-2.260	5.057
V13	80	5.29	1.601	-.904	.188
V14	80	5.36	1.655	-.997	.280
V16	79	5.84	1.605	-1.520	1.541
V2	78	5.58	1.671	-1.474	1.499
V3	78	5.45	1.500	-1.095	.921
V4	78	4.14	1.641	-.395	-.602
V5	76	5.82	1.794	-1.451	.935

Appendix 7.7b- KMO and Bartlett's Test

**KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,689
Bartlett's Test of Sphericity	Approx. Chi-Square	363,112
	df	45
	Sig.	,000

Appendix 7.7c- Total Variance Explained

**Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4,660	46,600	46,600	4,660	46,600	46,600	4,421	44,211	44,211
2	1,446	14,461	61,061	1,446	14,461	61,061	1,685	16,850	61,061
3	,992	9,923	70,984						
4	,808	8,078	79,061						
5	,688	6,878	85,940						
6	,463	4,626	90,565						
7	,421	4,213	94,778						
8	,256	2,563	97,341						
9	,195	1,953	99,295						
10	,071	,705	100,000						

Extraction Method: Principal Component Analysis.

Appendix 7.7d- Component Matrix

**Component Matrix<sup>a</sup>**

	Component	
	1	2
How important are color to you?	,853	-,030
How important are thickness to you?	,847	,133
How important are the thickness of the salted cod for your purchase?	,824	,235
How important are the color of the salted cod for your purchase?	,767	,201
How important are the freshness of the salted cod for your purchase?	,700	-,423
How important are flavor to you?	,686	,199
How important are the brand of the salted cod for your purchase?	,685	-,354
How important are conservation to you?	,670	-,392
I believe that cod is a cool, healthy product, without additives	,136	,684
The cod is white, thick and attractive color	,226	,606

Extraction Method: Principal Component Analysis.  
a. 2 components extracted.

Appendix 7.7e- Reliability Statistics

**Reliability Statistics**

Cronbach's Alpha	N of Items
,857	10

Appendix 7.7f- Item-Total Statistics

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
How important are the color of the salted cod for your purchase?	49,76	82,710	,674	,833
How important are the thickness of the salted cod for your purchase?	49,91	83,653	,744	,829
How important are the brand of the salted cod for your purchase?	51,24	84,833	,575	,843
How important are the freshness of the salted cod for your purchase?	49,52	83,454	,597	,841
How important are flavor to you?	49,11	89,942	,602	,842
How important are color to you?	50,17	79,649	,766	,824
How important are thickness to you?	50,02	80,354	,761	,825
How important are conservation to you?	49,68	85,205	,566	,843
The cod is white, thick and attractive color	49,65	98,969	,185	,871
I believe that cod is a cool, healthy product, without additives	49,64	101,958	,110	,872

7.8 Variance analysis

Appendix 7.8a - Independent-sample t-test –region

	Levene's Test for Equality of Variances	Sig.	T	Sig. (2-tailed)	Mean difference	t-test for equality of means
Product characteristics	Equal variance assumed	.279	.747	.457	.186	No significant difference
Importance of product	Equal variance assumed	.064	-.874	.385	-.245	No significant difference
Brand awareness	Equal variance assumed	.723	.384	.702	.152	No significant difference
Brand image	Equal variance assumed	.508	.219	.827	.068	No significant difference
Quality	Equal variance assumed	.211	.175	.861	.052	No significant difference
Purchase intention	Equal variance assumed	.223	-2.560	.013	-1.217	Significant difference
Price	Equal variance assumed	.689	-.083	.934	-.024	No significant difference

Appendix 7.8b Independent-sample t-test importance based on region

	Levene's Test for Equality of Variances	Sig.	T	Sig. (2-tailed)	Mean difference	t-test for equality of means
<b>How important is the price of salted cod for your purchase?</b>	Equal variance assumed	.964	-.036	.972	-.013	No significant difference
<b>How important is the color of salted cod for your purchase?</b>	Equal variance not assumed	.014	-1.018	.314	-.422	No significant difference
<b>How important is the thickness of salted cod for your purchase?</b>	Equal variance assumed	.487	-1.160	.250	-.404	No significant difference
<b>How important is the brand of salted cod for your purchase?</b>	Equal variance assumed	.470	.249	.804	.096	No significant difference
<b>How important is the freshness of salted cod for your purchase?</b>	Equal variance assumed	.490	.175	.861	.075	No significant difference
<b>How important is flavor to you?</b>	Equal variance assumed	.200	-.822	.414	-.229	No significant difference
<b>How important is color to you?</b>	Equal variance assumed	.196	-1.137	.259	-.417	No significant difference
<b>How important is thickness to you?</b>	Equal variance assumed	.161	-1.386	.170	-.527	No significant difference
<b>How important is freshness to you?</b>	Equal variance assumed	.633	-.783	.436	-1.057	No significant difference
<b>How important is conservation to you?</b>	Equal variance assumed	.615	.711	.479	.265	No significant difference

