Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

Faculty of Veterinary Medicine and Animal Science
Department of Animal Breeding and Genetics

Locally produced pork – Västra Götaland

Madeleine Johansson

Examples of brands of locally produced pork in Västra Götaland (Matfranregionen.se; Skaraborgsgrisen.se)

Examensarbete / Swedish University of Agricultural Sciences
Department of Animal Breeding and Genetics

454

Uppsala 2015

Master's Thesis, 30 hp

Master's Programme
– Animal Science

Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

Faculty of Veterinary Medicine and Animal Science
Department of Animal Breeding and Genetics

Locally Produced Pork – Västra Götaland

Närproducerat Fläskkött – Västra Götaland

Madeleine Johansson

Supervisors:
Anna Wallenbeck, SLU, Department of Animal Breeding and Genetics
Mirja Hjers, Länsstyrelsen Västra Götalands län

Examiner:
Nils Lundeheim, SLU, Department of Animal Breeding and Genetics

Credits: 30 hp
Course title: Degree project in Animal Science
Course code: EX0556
Programme: Master's Programme - Animal Science
Level: Advanced, A2E

Place of publication: Uppsala
Year of publication: 2015
Name of series: Examensarbete / Swedish University of Agricultural Sciences, Department of Animal Breeding and Genetics, 454
On-line publicering: http://epsilon.slu.se

Key words: locally produced, pork, pig producers, consumers, future
Nyckelord: närproducerat, fläskkött, grisproducenter, konsumenter, framtid

Table of contents

Preface

I had read about the crisis in the pig production for some while, and during times when it was time for decisions for what subject to chose for my master thesis, I stumbled upon an article on the homepage of the county administrative board, Västra Götaland. The article was about the crisis in the Swedish pig production and that different actions were needed in order to change the situation. Since I have an interest in pigs and since I saw an opportunity to work together with a potential employer I contacted them and asked if my master thesis in some way could contribute to their work, and that resulted in this paper.

I want to thank my supervisor Anna Wallenbeck for her positive personality and for her help and support. I would also like to thank Nils Lundeheim for all valuable comments. I also want to thank all the pig producers for their help in getting contact information to other producers, and Elin Eriksson and Lisa Ogden at the swine research herd at SLU, for their input on the questions to the producers. Also thanks to Mirja Hjers for giving me the opportunity to perform this paper together with the county administrative board, Västra Götaland.

Abstract

The interest for locally produced food has increased the last couple of years, and some consumers have a willingness to pay a premium for niche products like locally produced food. At the same time it seems like the Swedish pig production are in a negative development period. This study tries to see if locally produced pork could be a possible factor which might affect producers in the county of Västra Götaland views on different aspects regarding their production. Consumers of pork and their point of view regarding locally produced pork were also studied. Surveys to consumers and producers were constructed.

Although previous studies claim the opposite, in the two locations (Högsäter and Uddevalla) where the consumer survey were performed, there were more men than women that always bought locally produced pork. But there were no difference between gender when it came to factors affecting purchase or in their thoughts about the future for the pig production. However, it seemed to be a difference between locations when it came to the consumers thoughts about the future, as well as for different factors affecting their purchase. There were a larger proportion of producers which claimed that they sold their meat as locally produced than those that did not. However, as the number of producers that answered the survey was low it was hard to analyze the data and the results can only be considered to be valid for the studied sample. But the analysis made showed no significant differences between producers that sold locally or not when it came to factors like if they had a more positive belief in their future or if they believed that they had a good profitability. Because of this it is not possible to state that locally produced pork could be a factor which affects the producers point of view regarding different aspects in their production.

Sammanfattning

Intresset för närproducerade livsmedel har ökat de senaste åren och vissa konsumenter kan även tänka sig att betala extra för det mervärde som närproducerat innebär. Det har samtidigt skett en negativ utveckling för de svenska grisproducenterna. I studien undersöktes det om närproducerat fläskkött kunde vara en möjlig faktor som påverkar synen på olika aspekter kring produktionen bland grisproducenter i Västra Götalands län. Konsumenter som köper fläskkött och deras köpmönster och tankar om närproducerat fläskkött undersöktes också. Undersökningarna genomfördes med hjälp av två enkätstudier, en utställd till konsumenter i två olika butiker på olika orter i Västra Götalands län, och en ställd till grisproducenter i Västra Götalands län.

Signifikant fler män än kvinnor som svarade på enkäten uppgav att de alltid köper närproducerat vilket är tvärtemot vad tidigare studier visat. Ingen skillnad hittades mellan andel män och kvinnor och de faktorer som de uppgav kunde påverka deras inköp av närproducerat fläskkött, och ingen skillnad fanns heller i deras tankar om framtiden för grisproduktionen i Västra Götaland. Skillnad hittades dock mellan orterna när det gällde konsumenternas tankar om framtiden och gällande de faktorer som konsumenterna uppgav kunde påverka deras inköp. Bland producenterna var det en större andel av de som svarade på

enkäten som faktiskt sålde kött närproducerat än de som inte gjorde det. Det låga antalet producenter som svarade på enkäten bidrog dock till att de statistiska analyserna inte kunde ge några säkra svar. Av de analyser som ändå utfördes hittades inga signifikanta skillnader i jämförelserna mellan de som sålde sitt kött som närproducerat och de som inte gjorde det när det gällde faktorer som om de har en mer positiv syn på framtiden eller om de ansåg sig ha en bättre lönsamhet. Det är alltså inte möjligt att säga om försäljning av närproducerat fläskkött är en faktor som påverkar grisproducenternas syn på olika aspekter inom deras produktion.

Introduction

The interest for locally produced food has increased during the last years (Grunert *et al.*, 2004; Verbeke *et al.*, 2010; Bean & Sharp, 2011), but despite increasing interest it appears like consumers often choose cheaper imported meat. At the same time the Swedish pig production has decreased (Jordbruksverket, 2014E). Could further investments and support in locally produced pork be an investment for the future of Swedish pig production?

The aim of this study is to contribute with information which can support future decisions related to pig production at the county administrative board in Västra Götaland. The study provides information of consumers and pig producers in Västra Götaland views and thoughts regarding locally produced pork. It also includes a description over the pig producers in the county. By compiling answers from surveys aimed for consumers and producers following questions will be answered in this study:

- Could locally produced pork in Västra Götaland be a potential factor which affects producers views on different aspects regarding their production?
- Have pig producers who sell their pork as locally produced in some way a more positive picture of their future?
- Are there any associations between producers who sell locally produced pork and other factors, for example the producers views on their profitability or their thoughts about their future?
- What are the consumers views on locally produced pork and the future for the pig production in Västra Götaland?

Buying and supporting the production of locally produced pork could not only help the producers to remain or to develop their production, it could also support the local community and contribute to a positive rural development.

Literature review

Swedish Pig Production

The top producing country of pork in the world is China (Faostat, 2014) which stand for almost 50 % of the world production while 20 % of the world production come from EU and 1 % come from Sweden (Handlingsplan, 2014). In Sweden number of produced pigs had a peak in the late 70s/early 80s (Faostat, 2014). Figure 1 illustrates the Swedish production of pork from 1944 to 2007. 57 % of our Swedish pig producers are today between 51 and 60 years old and 25 % of all the producers think that they will decrease or end their production in the next three years (Lantbruksbarometern, 2014).

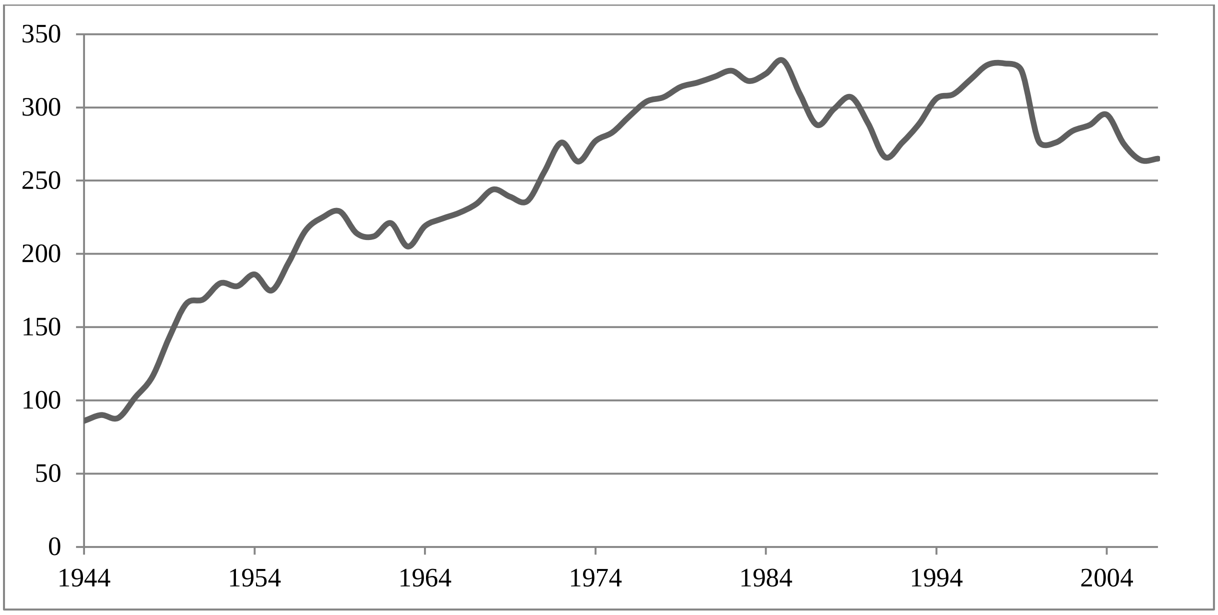

Figure 1. *Swedish pork production (1000 ton) from 1944 to 2007 (Jordbruksverket, 2014E).*

Pork is the most common consumed type of meat in Sweden, and our consumption is right below the average consumption in the EU (Jordbruksverket, 2013A). We eat approximate 36.6 kilo (total carcass weight) pork per person and year in Sweden (Jordbruksverket, 2014D) and our consumption of pork has increased, from 329 (1000 ton) in year 2004 to 351 (1000 ton) in year 2013. During the same time period the proportion of consumed pork which was produced in Sweden decreased from 90 % to 67 %. The production decreased as well, from 295 (1000 ton) to 235 (1000 ton) during the same time period (Jordbruksverket, 2014C).

Our export has also decreased the last years, Poland is the country that we export the most to. The import of pork has on the other hand increased and we import mainly from Germany and Denmark (Jordbruksverket, 2014C). Figure 2 illustrates the Swedish import and export in the period 1996-2007.

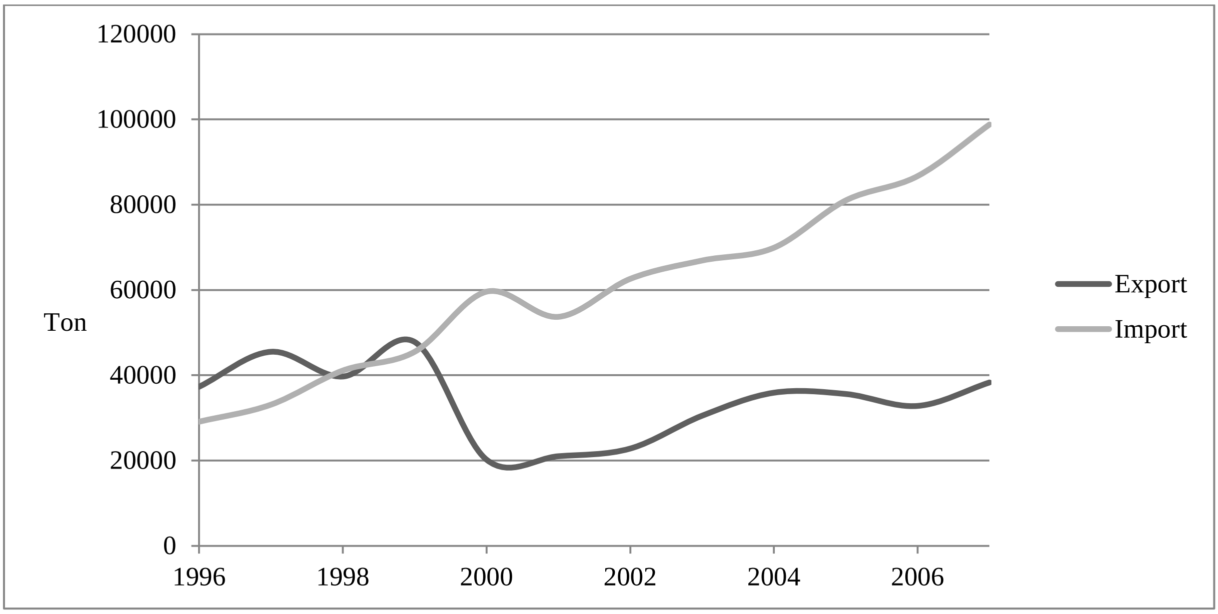

Figure 2. *Import and Export of pork (ton), 1996-2007 (Jordbruksverket, 2014E).*

In 2013, 2.5 million pigs were sent to slaughter in Sweden (SCB, 2014) while in 1990 the number was 3.6 million (Jordbruksverket, 2014B). During 2014 the number of slaughtered pigs actually increased during the first half of the year with 0.9 % compared to the first half of 2013 (Jordbruksverket, 2014A).

The production costs are high in Sweden which reflects on the consumer price. A big part of the pig is also consumed as processed meat and ready to eat food. In these types of products there is not a high demand for a Swedish origin, and the origin can also be hard to find on these types of products (Jordbruksverket, 2014C). Current price that the producers get from different slaughter plants is illustrated in table 1. One third of the Swedish pig producers today think that their profitability is good (Lantbruksbarometern, 2014).

Table 1. Price per kg carcass paid to the producer from different slaughter plants in week 46-47 in 2014 (KLSugglarps, 2014; Dahlbergs, 2014; Dalsjöfors, 2014; Skövde slakteri, 2014)

Slaughter plant, Weight Interval, Meat Percentage	**Price, SEK**
KLS, 70-94.9, 58 %	15.00
Dahlberg, 76-93.9, 58 %	15.00
Dalsjöfors, 75-99.9, 58 %	15.10
Skövde, 75-94.9, 58 %	14.25

Västra Götaland

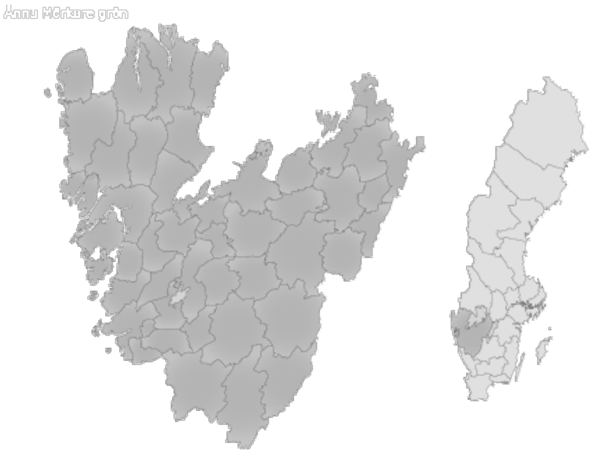

Figure 3. *Västra Götaland (Modified picture from Regionfakta, 2014).*

Västra Götaland (figure 3) is one of the largest counties in Sweden and 1.6 million people live here. 1.8 % of the working citizens are engaged in farming, forestry and fishing, compared to 2.2 % of the residents in the whole country (Västra Götalandsregionen, 2014). The number of pig producing enterprises in the county has decreased. Västra Götaland had 524 pig producing units in year 2007 but in 2014 the number of units was down to 299. The numbers for the whole country at the years 2007/2014 are 3380 and 1863 units (Jordbruksverket, 2014E). The trend in number of pig producing enterprises during the years 1970 to 1994 are illustrated in figure 4. 34 % of the total amount of farmers in Sweden has employees, and in Västra Götaland the proportion is 37 % (Lantbruksbarometern, 2014). Figure 5 illustrate number of pigs in Sweden and in Västra Götaland from 1951 to 2007.

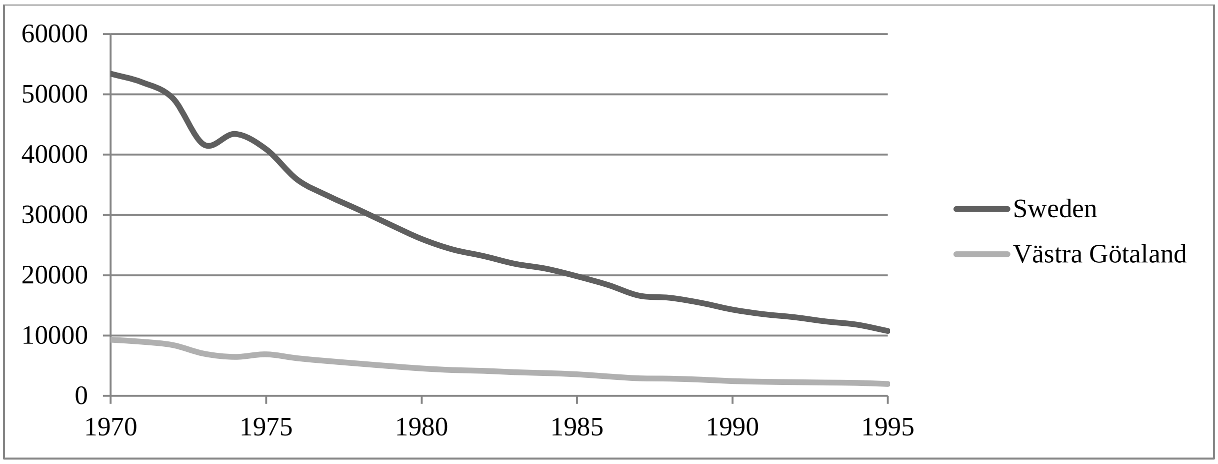

Figure 4. *Number of units with pig production in Sweden and Västra Götaland (Jordbruksverket, 2014E).*

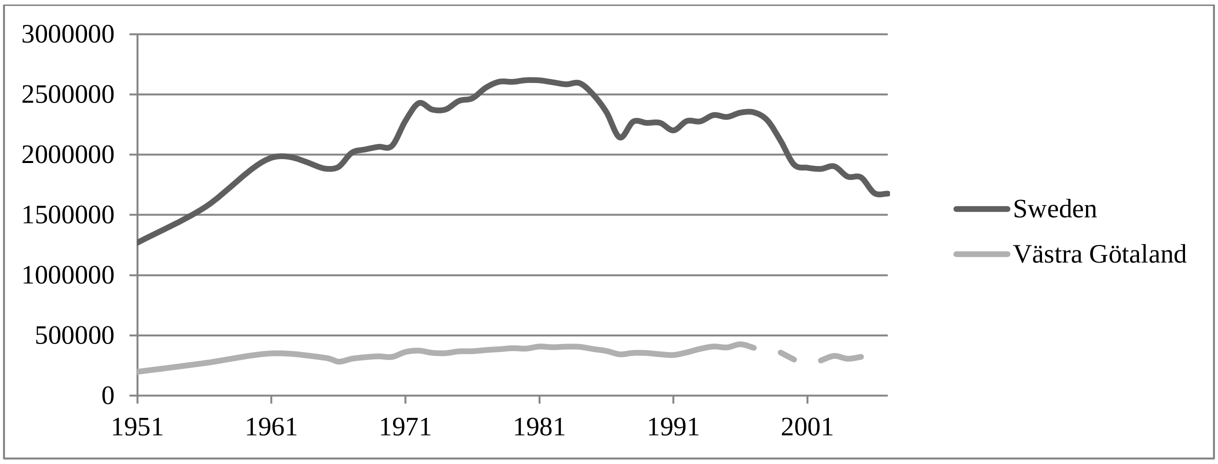

Figure 5. *Number of pigs in Sweden and Västra Götaland from 1951-2007 (Jordbruksverket, 2014E).*

Locally produced pork

In comparison between different types of agricultural productions, the Swedish pig producers had the least interest in selling more locally produced in year 2008. Only 48 % were interested compared to 61 % of the milk producers (Lantbruksbarometern, 2008). The number increased in 2011 when 71 % of the pig producers had that interest (figure 6) (Lantbruksbarometern, 2011). According to a Swedish study, producers which sell locally have consumers in supermarket as the most common way of selling their products (46 %). 27 % are private consumers and 25 % are restaurants and large scale kitchens. However, 80 % of the producers use three or more ways to sell their products (Livsmedelssverige, 2008). Older producers, and producers with larger farms (more land) seem to have less interest in selling locally produced (Lantbruksbarometern, 2011).

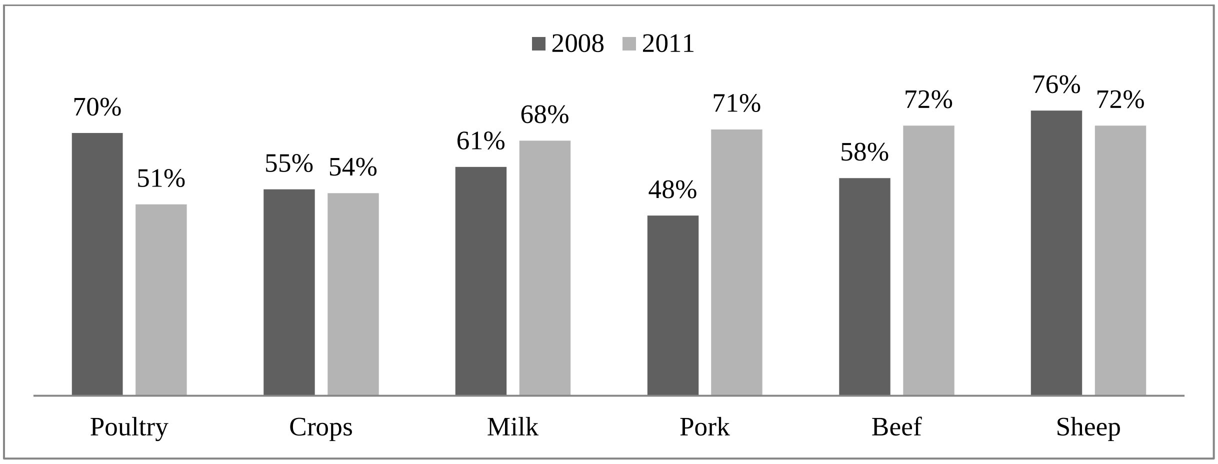

Figure 6. *Proportion of farmers with different type of production which would like to sell more locally produced products (Lantbruksbarometern, 2008; Lantbruksbarometern, 2011).*

Defining local

What local really means differ in the literature. The definitions of locally produced food can vary in general definitions as well as from definitions between individuals. Some reports that it is a question of food miles, while other talk about the establishment of connections between food production and food consumption (Belk *et al.,* 2014).

Geographical distance and how the food is distributed are two ways of defining locally produced food (Hand & Martinez, 2010). Another perception of local food is that it comes from smaller units (Zepeda & Leviten-Reid, 2004). Distance in driving time (6-7 hours most common), and political boundaries like a county, were other suggestions to the definition of local food when participants were asked to define local (Zepeda & Leviten-Reid, 2004). Similar definitions were mentioned of by Hand & Martinez (2010), where the geographic distances could have boundaries like a region, and in a study from the UK in 2007 where local food was specified as food produced and sold in an area of maximum 20-50 mile radius from the consumer (Chambers *et al.,* 2007).

Some thus suggest that local food has no clear distance, instead it is defined as whatever is closest (Zepeda & Leviten-Reid, 2004). But are the definitions important? Hand & Martinez (2010) suggest that it can be important to understand the definition based on if it is valuable to invest in local food systems or not.

Interest in local food

Consumers interest in more sustainable purchases and where their food is produced has increased during the last 10-15 years (Grunert *et al.,* 2004; Verbeke *et al.,* 2010; Bean & Sharp, 2011) as well as their interest in niche products like locally produced food (Darby *et al.,* 2006; Darby *et al.,* 2008; Nie & Zepeda, 2011; Chamberlain *et al.,* 2013). In a recent consumer survey from the Swedish board of agriculture, 61 % of the consumers stated that they bought locally produced food as often as possible. Three years ago the proportion was 45 %, so the interest has increased (Jordbruksverket, 2014F).

People are getting more and more aware of environmental and ethical consequences of the animal production (Verbeke *et al.,* 2010). They also demand more, and are more well-informed when it comes to quality (Papanagiotou *et al.,* 2013). Farmers markets, which are direct marketing between producers and consumers, have also increased around the world (Belk *et al.,* 2014).

Despite an increased interest, short transportation to slaughter, Swedish produced feed and a lot of straw for the animals were all factors which the consumer ranked higher rather than locally produced pork. But when the local produced pork could be traced back to the specific farmer it increased the interest (Anderson *et al.,* 2004).

Why buy local food?

Reasons why consumers buy locally produced food can, like the definition of local, vary a lot. Freshness, support of local business or support a more sustainable way of life can be different reasons (Darby *et al.,* 2006). The major reason to why Swedish consumers choose locally produced food according to Jordbruksverket (2014F) were to support local production, followed by that it's better for the environment and then better for the animals.

Buying local does not only help local business and creates more jobs, it can also give the consumer a feeling of that they support their local community (Denver & Jensen, 2014). The shorter supply chains connected to locally produced food also gives a more direct communication between the consumer and the producer (King *et al.,* 2010; Denver & Jensen, 2014).

In a Finnish study consumers perceptions of local food was explored, and their thoughts was mostly connected with positive associations like short transports, contribution to local economy and freshness. The consumers in this study who lived in a smaller town located closer to production areas considered local food to support local production. They also associated it with support of the economic welfare in the area. On the other hand, consumers who lived in a bigger town, with long distance to areas with production, associated local food more with animal welfare, health and environment. Consumers in both types of towns linked shorter transportations to local food, which in turn was associated with a fresher product and a higher product security (Roininen *et al.,* 2006).

Sustainability and environmental benefits are also connected with locally produced food. The environmental benefits can be the reduced "food miles" associated with local food (Denver & Jensen, 2014). Two ways to increase sustainability through ones purchases can be by buying organic or locally produced food (Bean & Sharp, 2011), since it is for example associated with use of less energy (Darby *et al.,* 2006).

Consumers perceptions of local food have similarities with perceptions of organic food (Denver & Jensen, 2014), but according to Roininen *et al.* (2006) animal welfare aspects are more associated with organic food than local food. It has thus been shown that consumers preferences for locally produced food can be stronger than for organic food (Chamberlain *et al.,* 2013).

Despite what reason consumers have for their purchase of local food there seem to be a common thing that connects all factors; either the intention to contribute to positive performance outcome or to reduce negative outcomes (Hand & Martinez, 2010).

Pork quality

It is important to understand what the consumer wants when it comes to pork since adaption of the product can satisfy the consumers demands (Resano *et al.,* 2011). Pork quality can mean a lot of different things for different people and preferences for different quality aspects vary. Consumers expectations of pork and their actual quality experience can diverge to a large extend (Bredahl *et al.,* 1998). It can also be a strong relationship between the consumers expected quality of pork and their intention to buy pork (Papanagiotou *et al.,* 2013).

The consumers satisfaction with taste has been considered as the main factor which affects the consumers needs (Resano *et al.,* 2011). If consumers experience good quality they purchase the product again (Grunert *et al.,* 2004). It is also the combination of satisfaction with taste and price that is important. It is more likely that more elderly people are satisfied with pork, which is why Resano (2011) mentions that focus maybe should lie on efforts to attract younger peoples needs.

Locally produced food has been considered to have a higher quality and a better taste when compared to national and imported food (Chambers *et al.*, 2007), but Roininen *et al.* (2006) found that intensively produced food has been associated with better quality than local food.

In a Swedish survey consumers got to answer questions regarding their choice and attitudes towards pig production and fresh pork. The Swedish consumers associated type of production with good meat quality. They also associated the terms “farmed nearby”, “from small abattoirs” and “slaughtered on the farm” with good meat quality. However, the study also indicated that consumers negative images of pig production do not always influence their purchase behavior (Ngapo *et al.,* 2004).

What kind of people eat locally produced pork?

According to several studies a typical non pork consuming person is female. The females are also more likely to be living alone (Verbeke *et al.,* 2010; Verbeke *et al.,* 2011). Females that live alone are also the typical consumer who has a low variety in their choice of pork (Verbeke *et al.,* 2010).

Although females are more likely to be the non pork consumers, they are also more likely to buy locally produced products (Jekanowski *et al.,* 2000; Nie & Zepeda, 2011). This was also the case in a study by Chamberlain *et al.* (2013) where consumers that were females, over 37 years and living without children in the household were the consumers that more often preferred locally produced food. Of the Swedish consumers, it is the ones over the age of 55, and especially women, who seem to have the biggest interest in buying locally produced food (Jordbruksverket, 2014F).

The consumers which almost never buy local products are more likely to be males, and these types of consumers are also least likely to ever be regular consumers of local products, and they also have the smallest concern for the environment (Nie & Zepeda, 2011). Despite their lower interest in locally produced food, men eat pork more often than women. People with a lower income, obese people and people in more urban areas eat processed pork more frequently, while those who live in areas where there are more pig production close by consume fresh pork more frequently. The people who eat a wide variety of pork products and eat it frequently are often overweight, males and less educated (Verbeke *et al.,* 2010).

A study made amongst consumers in Indiana, U.S.A, tried to identify which factors that influenced consumers choice when it came to purchasing locally produced products. In this case products produced in the state. The study showed that the longer a consumer had lived in the state the more willing they were to buy locally produced agricultural products (Jekanowski *et al.*, 2000). The interest can also differ between consumers depending on where in Sweden they live. People who live in the northern parts of Sweden had a more positive attitude towards local food (Jordbruksverket, 2014F).

The difficulties with consumers surveys is that people sometimes answer on the basis of how they want to act, or how they wish they act, but they do not always act in that way when it comes to purchasing (Anderson *et al.*, 2004; Grunert, 2006).

Consumers willingness to pay more for locally produced food

Two out of three Swedish consumers are willing to pay extra for Swedish products. There are 14 % more of the consumers who are willing to pay more for Swedish products in 2014 comparison to year 2011 (Jordbruksverket, 2014F). Some consumers also have a willingness to pay a premium for locally produced food (Darby *et al.*, 2006; Hu *et al.*, 2012; Denver & Jensen, 2014). Consumers in South Carolina were willing to pay an average of 23 % extra for locally produced animal products compared with products from another state (Carpio & Isengildina-Massa, 2009). In a Swedish market investigation in 2004 the value of locally produced pork from the consumers point of view was investigated. The results showed that consumers willingness to pay increased if the pigs were slaughtered locally (five mile radius), or in a mobile slaughter plant. If the pork only were from the province (Värmland) where the study was made, it did not increase the willingness to pay extra as much as if the animals were slaughtered locally, or if it could be traced down to the specific farmer. Traceability to the province was thereby valued less than traceability to the farmer. Compared to transportation of the pigs to a larger slaughter plant, consumers were much more willing to pay extra for pork from pigs slaughtered in a mobile slaughter plant or a local slaughter plant (five mile radius) (Anderson *et al.*, 2004).

A higher age and a higher income can increase the willingness to pay extra for locally produced food. Women are more willing to pay extra compared with men (Carpio & Isengildina-Massa, 2009), and they were also more willing to pay extra for pork from pigs slaughtered in local slaughter plants or mobile slaughter plants. Women could pay 24.95 SEK more per kg, and the men 14.96 SEK, for pigs slaughtered at a local slaughter plant. Consumers younger than 50 years old seem to be more willing to pay more for pork from local slaughter plants than older consumers, 26.00 SEK compared to 15.9 SEK (Anderson *et al.*, 2004).

Despite that the Swedish consumers are willing to pay a premium for locally pork a huge number of the consumers buy imported pork because of the cheaper price (Lind, 2007). Roininen *et al.* (2006) found that a negative association to local food is the price which was considered to be too high. However, organic food has been suggested to be considered as more expensive than local food (Denver & Jensen, 2014). Locally produced food was also considered more expensive by the consumers when compared to national food and imported food (Chambers *et al.*, 2007).

Material and Methods

Two surveys were conducted, one for consumers of pork (attachment 1) and one for pig producers (attachment 2). The questions were suggested by the county administrative board (länsstyrelsen), and were adjusted to work in a questionnaire. The language was held simple and was adjusted in order to suit the respondents answering the questionnaire. The questions were also held neutral without trying to put an angle on the questions (Trost, 2001).

Locally produced pork in this study is defined as pork produced and sold in the county of Västra Götaland.

Questionnaire to consumers of pork in Västra Götaland

Questionnaires together with a short description of the study were placed in two supermarkets nearby the entry of each supermarket. One was located in a smaller community (Högsäter), and the other was located in a town (Uddevalla). In the description of the study the consumers were asked to leave the questionnaire in a folder that was placed next to the questionnaires. The number of collected surveys was checked at different occasions in order to keep track over the total number. The data from the surveys were arranged in Excel sheets to be statistically analyzed.

Questionnaire to pig producers in Västra Götaland

Initially the idea was to perform personal interviews with pig producers and two test interviews were made by phone. This helped to check the time length on the interview as well as the relevance on the questions. Due to problems in getting contact information to the producers, time issues and because of requests from some producers that they preferred to write down their own answers, the questionnaire were sent out as letter instead.

All the contact information to the producers should initially have been provided by the county administrative board. Unfortunately this contact information could later not be given which resulted in that more time was needed to be spent on getting in contact with the producers. After a number of calls and emails some contact information to the producers were gathered. From a list over members in *Västra Sveriges grisproducenter,* 28 producers were selected and were sent a letter, and the remaining producers addresses were collected by searching after their information online or by getting their addresses or phone numbers by other producers which were contacted. A total of 65 letters were sent out, and two personal interviews were made. The letter which was sent out contained information regarding the study and the questionnaire. A pre stamped envelope was also attached so the producers did not have to pay anything themselves when they returned the questionnaire.

The information from the surveys was arranged in an Excel sheet as soon as they arrived. Most of the questions were multiple choice questions, but some questions had open answers. Some of the open questions required to be categorized to be able to be analyzed (table 2).

Friedrichs (2008) compendium about qualitative analysis were read for inspiration and help in that aspect. The categorization was made when all the answers were gathered in order to see which types of answers that were given. The answers did not vary that much from each other which made it easier to categorize them, but for the few answers that did not fit into any category they were simply categorized as *Other*. From some of the questions the answers from the producers were presented as quotes.

Table 2. Categorization of questions

Question	**Categories**	**Example on a answer**
2.2	Economic reasons	"Because we don't get paid enough"
	Retirement	"My age"
2.3	Negative vision/Do not see any possibilities	"I had an optimistic view on the production until one year ago, now it is negative"
	Positive vision/Sees possibilities	"It has got possibilities, but it needs to be more adjusted to the market"
	Other (could not be categorized)	"The profit needs to be higher"
8.4	Further education after high school	"Agronomist"
	High school as highest education	"Gymnasium"

Statistical Analysis

Data from the surveys were analyzed with the program Statistical Analysis Systems (SAS, SAS Inst. Inc., Cary, NC) version 9.2. Descriptive statistics were conducted by using Procedure Means and Procedure Freq. Most of the data was on a binominal scale (0/1). Some of the data were made binomial to be able to look at possible differences or associations using Chi2-test (χ^2- test) or Fisher´s Exact test, testing the hypothesis that the proportion of variable *x* is independent of variable *y*. The p-value determines if a hypothesis should be rejected or not. If the p-value is significant ($p<0.05$) the hypothesis which claims that no difference exist should be rejected. This means that there is a significant between the analyzed variables. The data included only one continuous variable, consumers age, and for this variable an analysis of variance was conducted to be able to analyze differences between ages. Table 3a, 3b and 3c describes the analyzed variables.

Table 3a. Analyzed variables for the consumers with Chi2-test

Chi2-test - Consumers

Variable *x*	**Variable *y***
Men ↔ Women	Always buy locally produced pork ↔ Buy pork occasionally
Högsäter ↔ Uddevalla	Always buy locally produced pork ↔ Buy pork occasionally
Men ↔ Women	Believe in a better future for the pig producers ↔ Thinks that the future for the producers will be worse
Högsäter ↔ Uddevalla	Believe in a better future for the pig producers ↔ Thinks that the future for the producers will be worse
Always buy locally produced pork ↔ Buy pork occasionally	Believe in a better future for the pig producers ↔ Thinks that the future for the producers will be worse
Men ↔ Women	If they mention the factor ↔ If they don't mention the factor. (Includes all of the different factors mentioned which would affect their purchase of locally produced pork (*Cheaper*, *Labeling*, *Availability*, *Taste* and *Other*)).
Högsäter ↔ Uddevalla	If they mention the factor ↔ If they don't mention the factor. (Includes all of the different factors mentioned which would affect their purchase of locally produced pork (*Cheaper*, *Labeling*, *Availability*, *Taste* and *Other*)).

Table 3b. Analyzed variables using analysis of variance

Analysis of variance - Consumers age

Mean age of those that always buy locally produced pork ↔ Mean age of those that buy locally produced occasionally

Mean age of those that believe in a better future for the pig producers ↔ Mean age of those that think that the future for the pig producers will be worse

Table 3c. Analyzed variables for producers using Chi2-test

Chi2-test - Producers

Variable *x*	**Variable *y***
Sell locally – Do not sell locally	Believe that they still will have their production left after five years ↔ Do not believe so
Sell locally – Do not sell locally	Positive view of the future ↔ Negative view of the future
Sell locally – Do not sell locally	Bad/Really bad view of their profitability ↔ God/Neither good or bad view of their profitability
Sell locally – Do not sell locally	Have other productions ↔ Do not have other productions
Sell locally – Do not sell locally	Work full time with their production ↔ Work part time with the production
Sell locally – Do not sell locally	Have employees ↔ Do not have employees
Sell locally – Do not sell locally	Have further education after high school ↔ Have high school as highest education
Sell locally – Do not sell locally	Do not believe/Don't know regarding if the animal protection laws are too strict ↔ Believe that the laws are too strict
Sell locally – Do not sell locally	Do not believe/Don't know regarding if altered animal protection laws could increase the profitability ↔ Believe that altered laws can increase profitability
Positive view of the future – Negative view of the future	Bad/Really bad view of their profitability ↔ God/Neither good or bad view of their profitability

Since there were few observations in some categories they were added together in order to get a more reliable Chi2-test (χ^2- test). Categories added in the analysis of the questionnaire for the producers are illustrated in table 4.

Table 4. Categories in different questions that was added together before statistical analysis

Question	**Added Categories**
Question 2.1	The answer *No* and *Don't know* were added together and compared to the answer *Yes*.
Question 3.1	The answer *Bad* and *Really Bad* were added together, and *Good* and *Neither God or Bad* were added and the two categories were compared to each other.
Question 7.1	The answer *No* and *Don't know* were added and compared to the answer *Yes*.
Question 7.2	The answer *No* and *Don't know* were added and compared to the answer *Yes*.

Results – Consumer

Age and Gender

103 consumers answered the survey, 54 from the supermarket in the smaller community, Högsäter, and 49 from the supermarket in the town, Uddevalla. The proportion of men and women from the different locations is described in figure 7. The average age was 47.5±16.7 (x±Std) in Högsäter and 41.8±10.1 in Uddevalla. The average age for the women was 44.3±13.9 and 45.5±14.6 for the men.

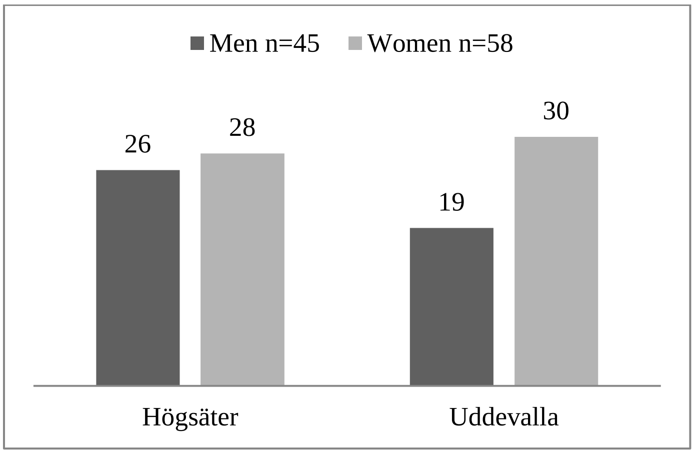

Figure 7. *Number of men and women that answered the survey from the two locations.*

Purchase of locally produced pork

In total, 43 % of the consumers always bought locally produced pork. The distribution of the consumers purchase from the different locations is illustrated in figure 8. There was no significant difference in average age between the respondents who always (47.7±2.2) (x±SE) or occasionally (43.2±2.3) bought locally produced (p=0.162).

A higher proportion of men than women chose to always buy locally produced pork (figure 9). Of those who always or occasionally bought locally produced pork, there was a significant difference between these proportions between men and women (χ^2- test, p=0.001). There was no significant difference between the consumers from the two locations when it came to if they always or occasionally bought locally produced pork (χ^2- test, p=0.417).

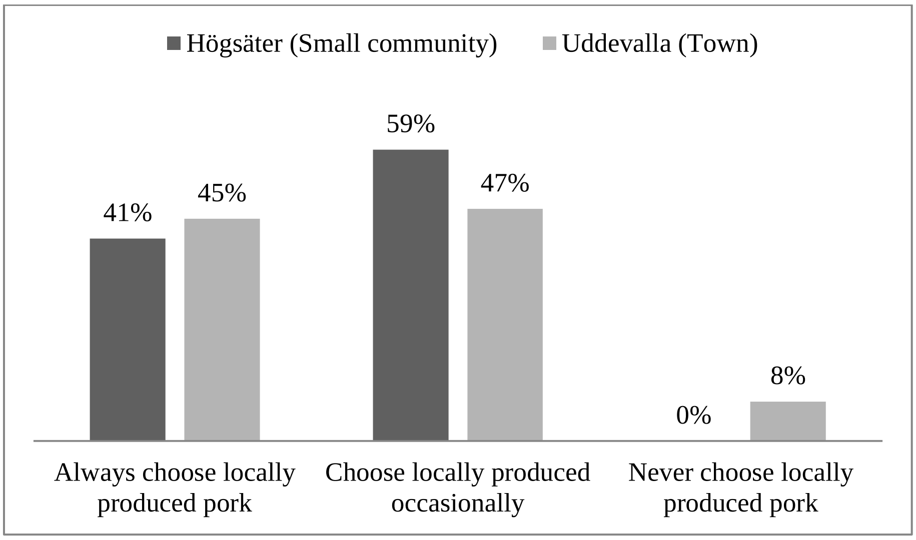

Figure 8. *Distribution of the consumers purchases in the different locations.*

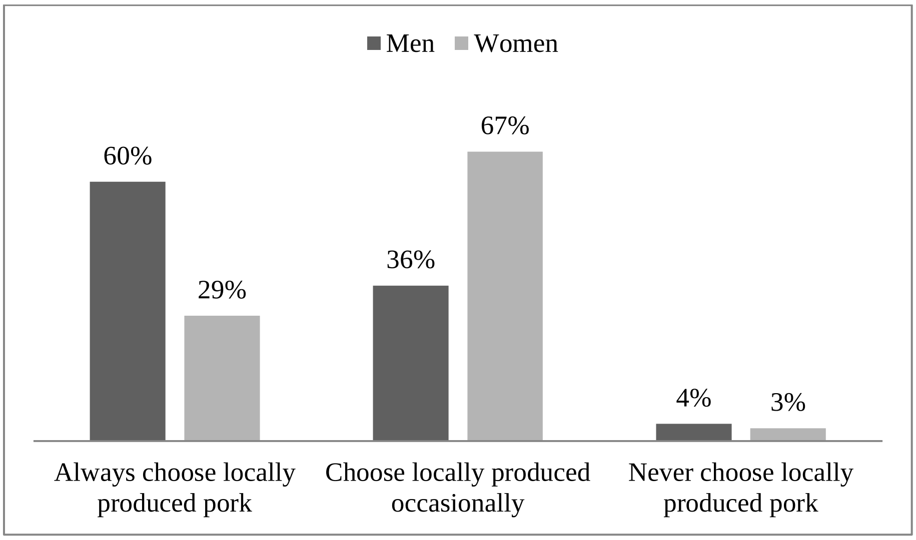

Figure 9. *Distribution within gender of consumers purchase of locally produced pork.*

Consumers thoughts of the future for the pig producers in Västra Götaland

In total, 34 % of the consumers believed in a better future for the pig producers, whilst 39 % thought that it would be worse. The distribution of the opinion about the future between the consumers from the different locations is illustrated in figure 10. There was a tendency of significant difference between consumers thoughts about the future for the pig producers in Västra Götaland between the different supermarkets (χ^2- test, p=0.089). 62 % of the consumers that believed in a less fortune future for the pig producers were from Högsäter and 38 % from Uddevalla. There was no significant difference (χ^2- test, p=0.404) between the consumers thoughts about the pig producers future between consumers that always or occasionally bought locally produced pork.

There was no significant difference (χ^2- test, p=0.279) between men and women when it came to if they believed in a better or worse future for the pig producers in the county of Västra Götaland (figure 11).

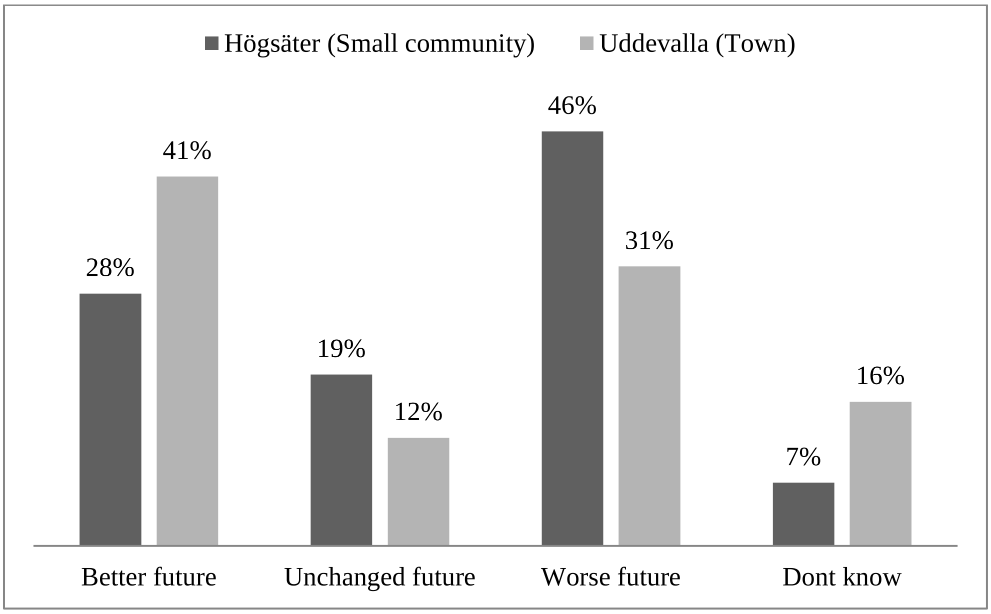

Figure 10. *Consumers thought about the future for the pig producers in Västra Götaland, in the two different locations.*

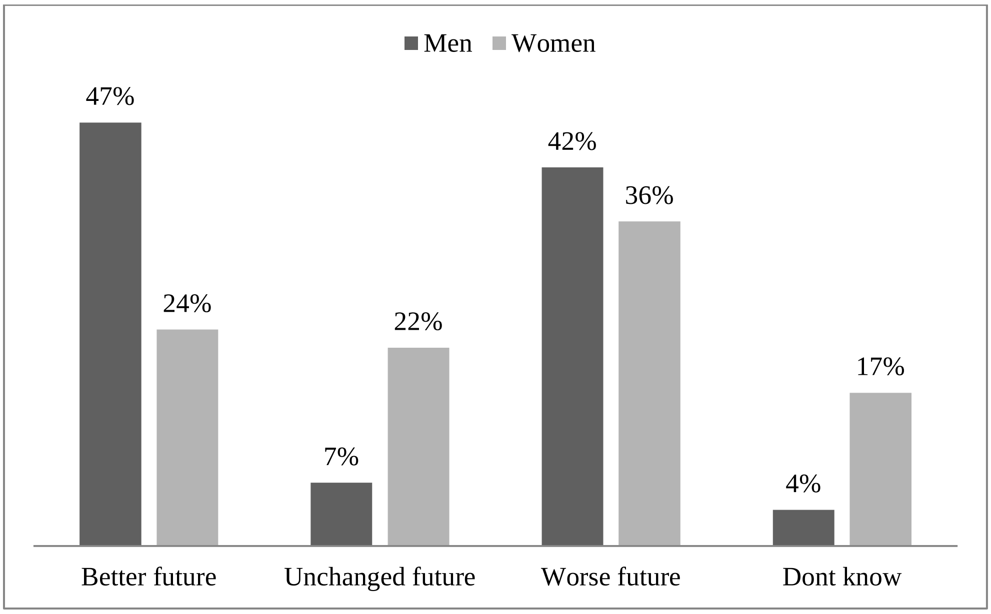

Figure 11. *Distribution of what men and women thought about the future for the pig producers in Västra Götaland.*

Average age of the consumers which believed in a better future for the pig producers was 47.9±2.3 (x±SE) years and average age of those which believed in a worse future was 43.0±2.2 years, but this difference was not significant (p=0.120).

Factors which affect purchase of locally produced pork

The most common factor influencing purchasing of locally produced pork mentioned was *Availability* (65 out of 103), followed by *Labeling* (59 out of 103) and *Cheaper* (32 out of 103). The consumers were allowed to choose more than one factor. There were significant differences between the two locations concerning the proportion of consumers who choose *Cheaper*, *Labeling*, *Availability* and *Other* as a factor (χ^2- test, p=0.0001, p=0.0009, p=0.026 and p=0.0002) (figure 12). For the factor *Taste* there was no significant difference between the locations (χ^2- test, p=0.343). The most common factor mentioned by women was *Availability*, and the most common factor mentioned by men were both *Availability* and *Labeling* (figure 13). There was a significant difference between men and women when it came to the factor *Other* (χ^2- test, p=0.003), but no significant differences were found between men and women for the other factors (*Cheaper* p=0.705, *Labeling* p=0.991, *Availability* p=0.267, *Taste* p=0.372).

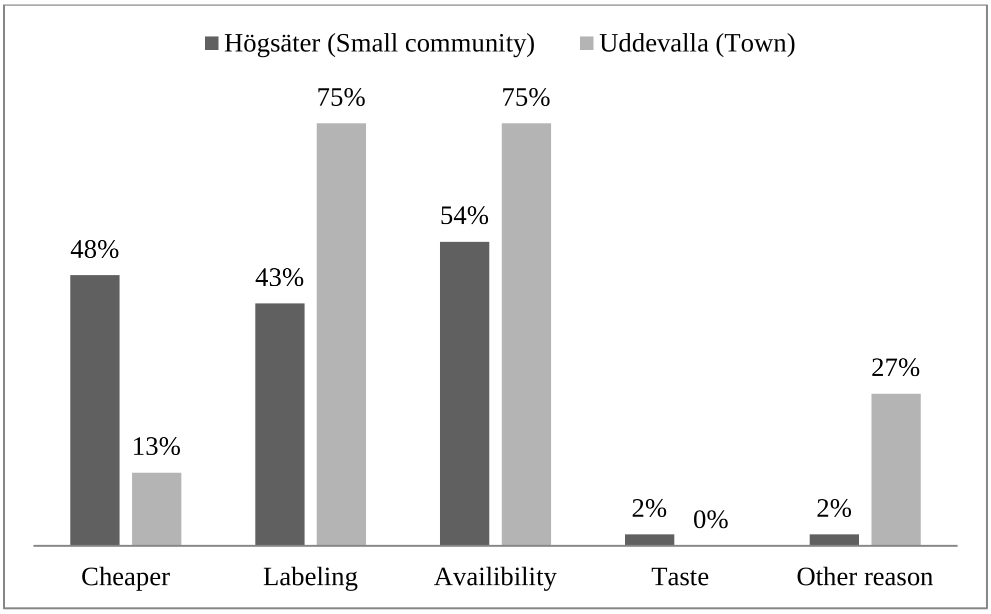

Figure 12. *Factors which influence willingness to purchase locally produced pork, in the two locations.*

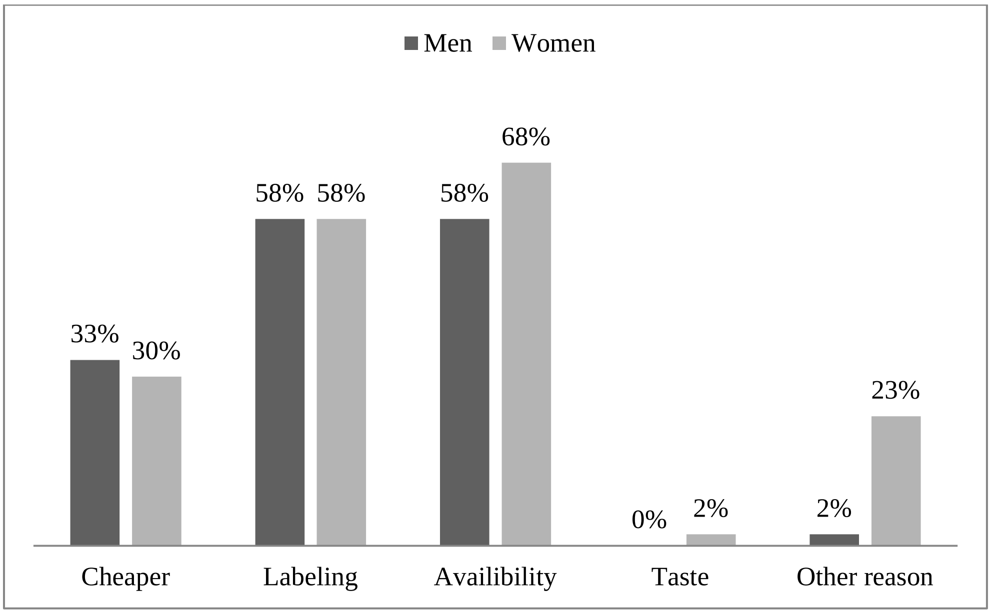

Figure 13. *Factors which influence the willingness to purchase locally produced pork, by gender.*

Result – Producer

Age and Gender

A total of 33 producers answered the survey out of the 65 letters that were sent, 27 out of the 33 producers were men. Average age for all the producers were 50.8 years and average age of the men was 51.3 years. Four women answered the survey, and their average age was 47.5. In two cases gender was not able to be determined through the survey.

Locally Produced

22 out of 33 producers sold to some extend their meat as locally produced. Of those who did not sell their pork as locally produced everyone answered that they would like to sell it as locally produced. The most frequent reasons for why they didn't sell their pork as locally produced despite that they stated that they wanted to:

"Nothing, we are a group that works on this and we are in the making of starting"
"It should be in a bigger scale so it does not get to be so much work for just one person"
"Because I only have piglets"
"I do not have enough time or interest, because it takes a lot of work"

Some of the arguments that the producers would give to the consumers when it comes to buying locally produced pork was:

- Safety
- Good for rural development
- Good for the environment
- Creates jobs in the rural areas
- Low use of antibiotics
- Good animal welfare
- Shorter transportations
- You could have control over where it come from
- You have the opportunity to meet the farmer and visit the farm
- No MRSA

Thoughts of the future

Production 5 years ahead

In total, 22 of the producers believed that they still will have their production left five years ahead. Six producers answered that they did not think that they will have their production left in five years, two out of these answered that it was because of retirement and the other four said it was because of economic reasons. Four of the producers were uncertain if they still would continue their production after five years, and they all mentioned economic reasons for that. Some also mentioned that future investments are necessary and that it will be a problem to afford that.

No significant difference was found between producers who sell as locally or not concerning their believe if they still will have their production after five years (χ^2- test, p=0.555). The distribution of the producers answer to the question if they still will have their production after five years is illustrated in figure 14.

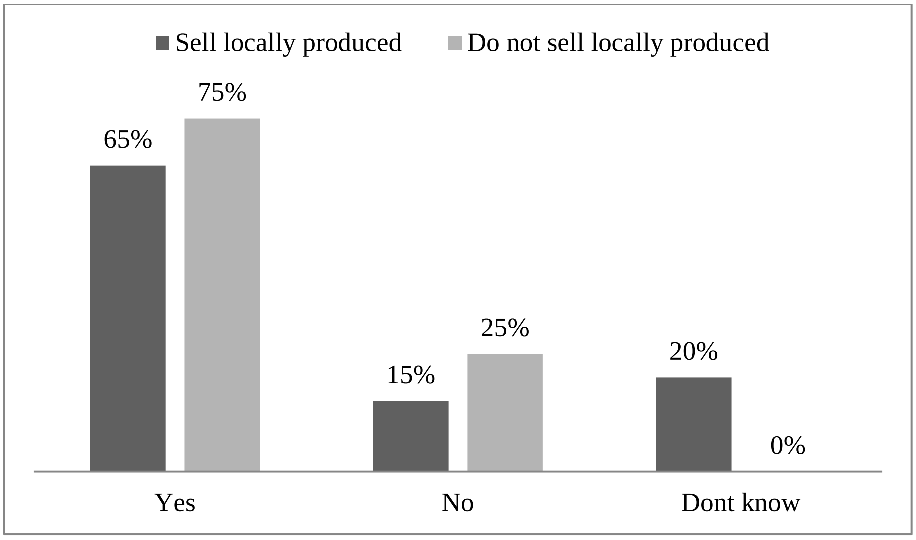

Figure 14. *The producers answer to the question if they still will have their production after five years ahead.*

The producers view of the future of the Swedish pig production

14 of the producers had a positive view of the future for the Swedish pig production. There was no significant difference (χ^2- test, p=0.699) in the producers views of the future for the pig production, despite if they sold their meat as locally produced to some extend or not. Distribution of the producers thoughts about the future for the Swedish pig production is illustrated in figure 15.

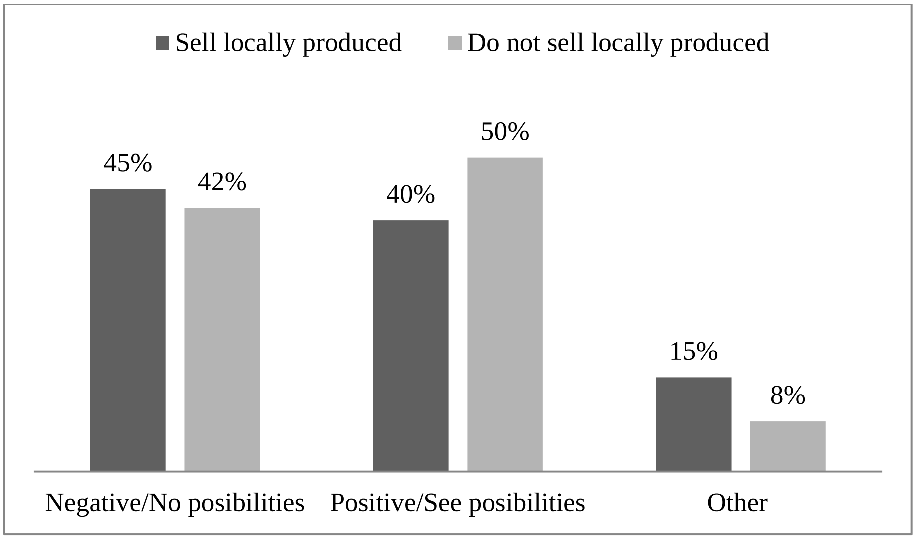

Figure 15. *Producers view of the future for the Swedish pig production, by those that sell as locally produced and those who not.*

Profitability

Two out of the 33 producers thought that their profitability was good. No significant difference (χ^2- test, p=0.305) was found between the producers that sold their meat as locally produced or not and their thoughts about their profitability. Distribution of the producers answers regarding their profitability is illustrated in figure 16. There was no significant difference between the producers that had a negative or positive point of view of the producers future when it came to their estimated profitability (χ^2- test, p=0.686). The producers comments regarding what they think influence their profitability, and the challenge in remaining their profitability are illustrated in table 5.

Table 5. The producers comments regarding their profitability

The producers comments on what they think affects their profitability	**The producers comments on the challenge to remain their profitability**
They do not get paid enough	To really get paid for all the costs
They need to spend a lot of time on each pig	To get paid for all the parts of the pig
The consumer are not willing to pay enough for Swedish pork	Top try to get as many weaned piglets as possible
The feed is expensive	To keep the costs for the feed low
The buildings are expensive	To produce pigs with a high growth rate
The piglet production is too expensive	To keep up the production results
The balance between the costs for the production and the payment for the meat	To try to keep the cost for the piglets as low as possible
An unfair competition against imported meat with lower costs	To balance between costs vs. payment
	To keep the animals healthy

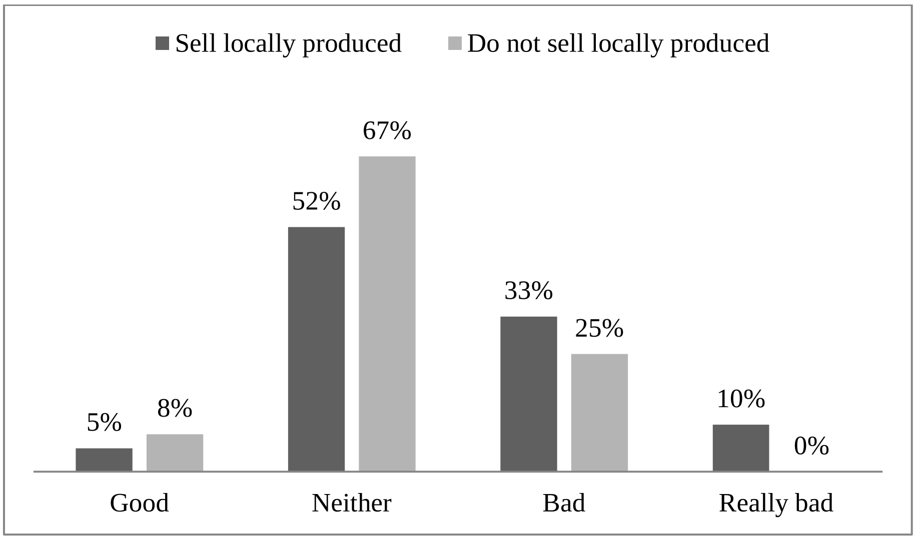

Figure 16. *The producers opinions on their profitability.*

Production

14 producers had farrow-to-finish production, 15 had specialized slaughter pig production and four had specialized piglet production. Average number of sows in integrated production was 171 sows. The smallest farm had 100 sows, and the largest 300 sows. Average number of slaughter pigs in specialized slaughter pig productions was 1425 pigs (pig places). The smallest farm had 520 places for slaughter pigs, and the largest had 2500 places. No average numbers of sows or piglets could be read from specialized piglet production.

In total, 57 % of the producers which sold their meat as locally produced to some extent had specialized production with slaughter pigs (figure 17).

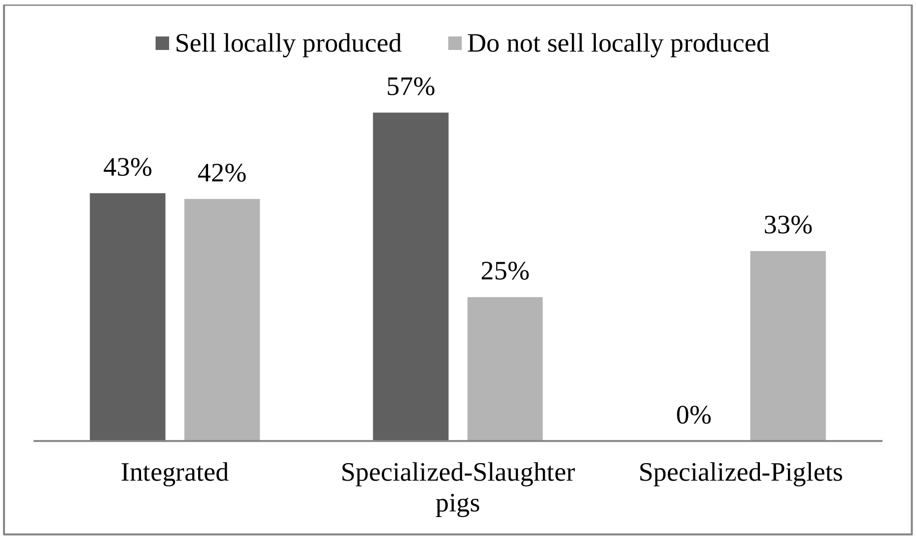

Figure 17. *Percentage of producers who sell locally produced or not, by production system.*

Other productions

4 out of 33 producers made their living only from pig production. 85 % of the producers which sold their pork as locally produced, and 92 % of those that didn't, had at least one more type of production (figure 18). No significant difference was found between the proportions of producers which sold locally or not and if they had another production or not (χ^2- test, p=0.581).

Organic production
None of the respondents had organic production

Feed
The majority of the producers grew to some extent their own feed for the animals.

Vaccination
No one vaccinated their pigs to avoid boar taint.

Employment, Employees and Education

18 of all the producers worked full time with their pig production. 57 % of the producers which sell locally, and 50 % of the producers who did not sell locally, worked full time with their pig production (figure 18). Reasons to why the producers did not work full time with the production seemed to be that they worked with their other productions, or that they did not manage full time work because of physical obstacles. Another reason was low profitability and that that the number of pigs only was enough for a part time job. There was no significant difference between those producers that sold locally or not and if they worked full time or not (χ^2- test, p=0.692).

23 of all the producers had employees. 71 % of the producers which sold locally, and 75 % who did not sell locally, had employees (figure 18). No significant difference was found between the proportion of producers that sold locally or not and if they had employees or not (χ^2- test, p=0.825).

28 of all producers had some kind of education further than high school. 83 % of the producers which sold as locally produced, and 92 % of those who did not sell locally, had some kind of education further than high school (figure 18). There were no significant difference between the proportion of those that sold locally or not and if they had education further than high school or not (χ^2- test, p=0.511).

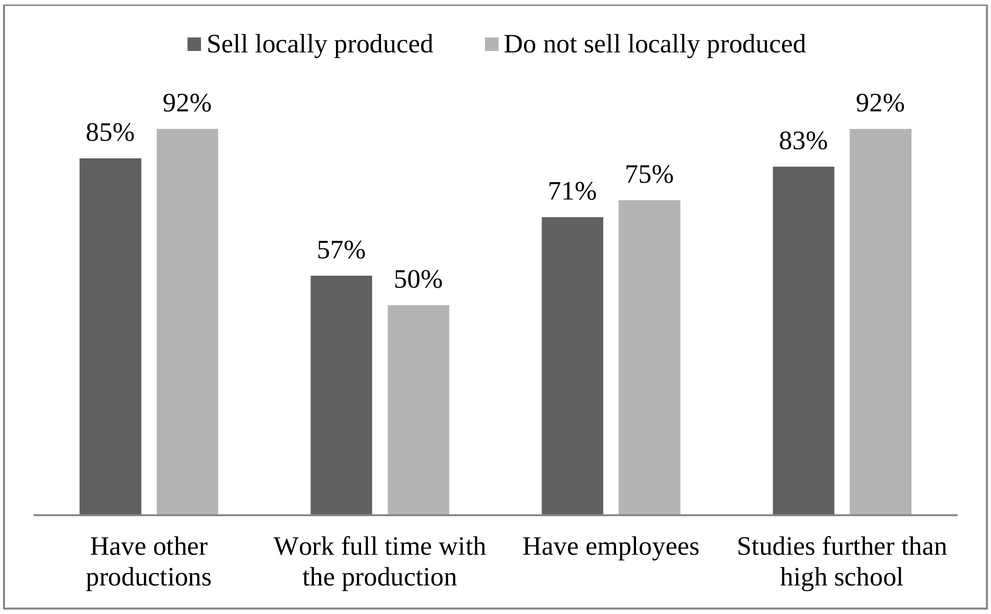

Figure 18. *Proportion of producers in different categories that sell/not sell locally produced pork.*

Slaughter

30 % of the producers would like to send their animals to a slaughter plant which is located closer to the producer. Table 6 shows which slaughter plant the producers sent their animals to. 82 % of the producers mentioned the *price* as one factor which determined which slaughter plant they chose to send their animals to, and 33 % of the producers mentioned *a good relation*. The *distance to the slaughter plant* was another factor which was mentioned, and 15 % producers mentioned it. They could mention as many factors as they wanted.

Table 6. Which slaughter plant the producers sent their animals to

Place of slaughter	Number of producers
KLS	17
Dahlberg	9
Skövde	5
Dalsjöfors	1
Scan, Dahlberg, Skövde	1
Total number of producers	33

Animal protection laws

Of all the producers, 12 thought that the Swedish animal welfare laws were too strict and 16 did not think that the laws were too strict. 12 also thought that they could have a better profitability if the laws were changed and 11 producers did not believe that such a change would give a better profitability. There was no significant difference between producers that sold their meat as locally produced or not when it came to if they thought that the animal protection laws were to strict (χ^2- test, p=0.492) or if they thought that altered laws could increase their profitability (χ^2- test, p=0.643).

Discussion

The purpose with this study was to provide helpful information regarding attitudes on Swedish pig production and to give answers to some questions regarding locally produced pork. It should also contribute to a description of the pig production in the county of Västra Götaland. Consumers and their thoughts regarding locally produced pork are discussed in the first part of the discussion, and producers in the second part, followed by a conclusion and suggestions to further research.

Consumer

Age and Gender

A total of 103 respondents answered the survey and the distribution of consumers that answered the survey from the different locations was even (54 and 49) as well as the distribution of men and women. The average age was also similar between men and women, but the average age seemed a bit high. It would have been interesting to have more answers from younger consumers. This could have made it possible to categorize the consumers by age, and make comparisons between them. With the present distribution of the ages that is not possible, but differences in average age between those who always or occasionally bought locally were analyzed and no significant differences were found. Previous studies indicate that females over 37 or over 55 years old buy locally produced food more often (Chamberlain *et al.,* 2013; Jordbruksverket, 2014F), so it would have been interesting to see if that was the case here as well. Reason to why younger consumers did not answer the survey to the same extend as older consumers did could be that they simply don't have the time or interest to answer paper surveys. If the survey were sent out electronically, maybe more of the younger consumers would have answered.

Purchase of locally produced pork

In total, 43 % of all the consumers stated that they always bought locally produced pork, although this proportion is smaller than in previous studies (61 %, Jordbruksverket, 2014F) this number can still be questionable. Maybe they really do always buy locally produced when it comes to fresh meat, but do they always choose locally produced when it comes to products like sausage and ready to eat food? Since the origin can be hard to find on theses type of products (Jordbruksverket, 2014C) and since consumers does not always purchase what they claim they do (Anderson *et al.,* 2004; Grunert, 2006), the true proportion can possible be lower.

There was not a big difference between the consumers from the different locations when it came to if they always bought locally produced pork. Since it can be possible that consumers from smaller and bigger communities can have different perceptions of why they buy locally produced (Roininen *et al.,* 2006) it could have been possible that consumers from one of the locations bought locally produced more often, but that was not the case in this study.

Significant difference (χ^{2-} test, p=0.001) were however found between men/women that always or occasionally buy locally produced pork. It seemed to be more men than women who always bought locally produced pork. Previous studies have suggested the opposite, that women more often prefer locally produced (Jekanowski *et al.*, 2000; Nie & Zepeda, 2011; Chamberlain *et al.*, 2013; Jordbruksverket, 2014F). In fact, Nie & Zepeda (2011) concluded that the consumers which almost never bought local products were more likely to be men. However, in the studied sample more often men than women always chose locally produced pork. It seemed however that women were more representative when it came to the answer that they bought locally produced pork occasionally. Could it possibly be the case that women are more honest in their answers? Or are they simply more aware of what they buy, and know that they choose other type of pork products occasionally. Or are the men answering based on how they actually want to act at every purchase instead on how the really act?

Thoughts of the future for the pig producers in Västra Götaland

Overall it was the same proportion of consumers that believed in a better future as it was for those who believed in a worse future. It appeared to be no differences in the consumers thoughts based on if they always or occasionally bought locally produced. The consumers thoughts about the future for the pig production in Västra Götaland were similar between men and women and between average age of the consumers, but there was a tendency (χ^2- test, p=0.089) in difference between the consumers from the different locations. It seemed like consumers from the smaller community, Högsäter, were less optimistic when it came to the future for the pig producers in Västra Götaland. It is possible that these consumers live more nearby areas with pig production which might have had an impact on their thoughts. Because it could be more likely that they personally know or have witness pig producers that had to be closed down.

Factors affecting purchase of locally produced pork

When the consumers choose factors which would make them always chose locally produced pork, the factor *Availability* was the most common, 65 consumers out of 103 chose that factor. *Availability* in this case was specified as “it is available at whenever you intend to buy pork”. This means that over half of all the consumers in this study seem to think that there isn’t enough locally produced pork available. Since the survey was conducted in supermarkets it is probably that in these kinds of stores they would have wanted to have more locally produced pork available. If consumers easily can buy locally produced pork in their local supermarkets, this could probably increase the sale. This would also gain the producer since supermarkets was the most common way of selling their products (Livsmedelssverige, 2008).

There were significant differences between consumers from the different locations when it came to different factors. The factor *Cheaper* seemed to be of a bigger importance for the consumers from the smaller community. Could it be due to that consumers which live in a city maybe earn more money and might therefore more easily afford to spend money on niche products?

Labeling was a factor more mentioned by the consumers from the town. Are there maybe more alternatives in bigger supermarkets located in a town so it is harder to distinguish the locally produced products? It might not be an equally desired factor by the consumers from the smaller community due to that consumers from smaller communities, which live more nearby pig production, might be more familiar with what kind of locally labels there are, and can maybe more easily see and recognize what pork that is locally produced. Either way, it is important to have a clear label which the consumers can remember and really connect to locally produced pork.

Availability was mentioned by 75 % of the consumers from Uddevalla and 54 % of the consumers from Högsäter. This difference could depend on a number of factors. It can be possible that consumers from the smaller community have more access to locally produced pork. It could also indicate that locally produced pork is more available in supermarkets further away from a bigger town, or that other factors are more important to consumers in a smaller community, or simply because that there can be differences in the selection of locally produced pork between different supermarkets. Although there was a difference between locations regarding the factor *Availability* it was still the most common mentioned factor amongst the consumers from the smaller community as well. This really emphasis the importance in having enough of the products available in the supermarkets.

Availability was also the most common factor mentioned by women, and men mentioned *Availability* and *Labeling* to the same extend. Except for the factor *Other* there was no differences in mentioned factors between men and women. Carpio & Isengildina-Massa (2009) and Anderson *et al.* (2004) both found that willingness to pay extra for locally produced products can differ between men and women, where women are more willing to pay extra than men. This could mean that the factor *Cheaper* probably could differ between genders in this case, but it didn’t. The factor *Cheaper* came on the third place over factors mentioned by the consumers which would make them buy locally produced pork every time. Denver & Jensen (2014) found however that local food was associated with a high price, but the consumers in this study seem to find other factors than the price more important.

Locally produced food has previous been considered to taste better in comparison to both national and imported food (Chambers *et al.,* 2007), and Swedish consumers have also associated the term “farmed nearby” with good meat quality (Ngapo et *al.,* 2004). Despite this, *Taste* seemed to not be an important factor amongst the consumers in this study.

Although it was interesting to see what factors the consumers chose, the question maybe could have been asked in a different way. The alternative that they got to choose from in the question could maybe have been left out. Would the consumers have answered the same factors if they didn’t get any options to choose from? And would it maybe have been more interesting to have asked why they choose locally produced pork or why they don’t?

Producer

The producers got to answer several questions and some of the questions were not analyzed or will not be discussed in this paper (see attachment 2), instead these answers will be summarized and forwarded to the county administrative board in Västra Götaland. For some of the questions the results are presented in this paper, but will not be discussed as much as other questions due to that they are not the main focus of this paper.

There were few producers in the study which resulted in uneven distribution between the producers in different categories. There should be at least five observations in each of the categories that are analyzed by the help of Chi2-test, but in several tests for the producers there were less than five which made it difficult to get reliable results when it comes to be able to see if one variable is independent of another variable. However, the study provides a description over the producers which could be used in further work. The number of participants could possibly have been higher if the contact to them were made in an earlier stage of the study.

Age and Gender

The majority of the producers were men, and the overall average age of the producers was 51 years, which seems similar to Lantbruksbarometern (2014) where 57 % of the pig producers in Sweden are 51-60 years old. It would have been interesting to be able to compare men and women, and young and old producers in this study to see if they have different beliefs, since for example older producers seem to have less interest in selling locally produced (Lantbruksbarometern, 2011). But since there were few participating producers this was not possible.

Locally produced

It would have been desirable to have found some numbers over how much of the produced pork in Sweden (or in Västra Götaland) that is sold as locally produced, or how many pig producers that sell their meat as locally produced to some extent, but no such statistics were found. Over half of the producers in this study sold locally but expected proportion was maybe 30 % at the most, so this was unexpected. Although the interest in selling local has increased amongst the pig producers (Lantbruksbarometern, 2011) it was also unexpected that every producer who did not sell locally wanted to do so. Reasons for why they didn’t were related to different things, from the fact that they only had piglet production to that they thought that it’s taking a lot of time and work which can be hard to cope with by themselves. Cooperation with other producers, which is already done today, could therefore help to ease the work with locally produced pork.

The arguments from the producers to why consumers should buy locally produced pork were similar to explanations that consumers gave themselves in previous studies. Better for the environment and the animals and support of local production were mentioned as reason by consumers (Jordbruksverket, 2014E), as well as that it creates more jobs and support the local community (Denver & Jensen, 2014). All of these arguments were also mentioned by the producers. When the consumers have previously mentioned all the same arguments, this suggests that the consumers really know what they might contribute to when they buy locally produced.

Thoughts of the future

Approximate two thirds of the producers believed that they still would have their production left after five years, while one third answered *No* or *That that they did not know*. This number was a bit higher than 25 % that thought that they will decrease or end their production in the next three years according to Lantbruksbarometern (2014). Retirement were mentioned as one reason for not thinking that they will have their production left after five years, which is not surprising since the producers average age is quite high. But economical reasons were also mentioned.

Profitability

Only two out of 33 producers described their profitability to be *Good*. An unfair competition against imported meat, expensive buildings and that they didn't get paid enough were different comments to what they think affects their profitability. The challenges in remaining current profitability were for example to really get paid and to keep the costs low. Producers with a low profitability can be able to struggle with investments needed to develop their production. There are a lot of economic matters involved in many aspects in the production of locally produced pork which really need to be discussed further, but no further discussion about that will be held here. Comparisons were simply made between those that sold locally produced or not and their view about their profitability.

Production

To have gotten a more realistic comparison between the producers which sold their pork as locally or not, the producers which had specialized production with piglets should have been taken away from the calculations. Now the comparisons involve those producers as a part of those that don't sell locally. None of those producers sold any meat from their production as locally produced, however, all of those producers wanted to do so, which could be an indication of that they possible want to increase their production to integrated production.

The most common production system amongst all the producers was specialized production with slaughter pigs, but there were not a lot of producers which made their living only at pig production. Crop and forest productions were most frequently mentioned as other productions. However, it would have been interesting to separate those who made their living only at pig production with those who had other productions to compare their thoughts, but there were not enough answers to do that.

None of the producers had organic production. Organic production can be seen as more expensive than locally produced food (Denver & Jensen, 2014), but animal welfare aspects seem to be more associated with organic food compared to locally produced (Roininen *et al.*, 2006). Could a possible combination of organic and locally produced pork attract more consumers and thereby increase the sale?

Almost every producer grew their own feed for the animals, and no one vaccinated their pigs in order to avoid boar taint. Since there were similar answers from all the producers in these questions, no further analysis were possible.

Employment, Employees and Education

Only half of the producers worked full time with the pig production, because of other productions, profitability, not enough pigs and physical obstacles. 23 of the producers (71 %) had employees which seem like a high number since 37 % of all the farmers (all different productions) in Västra Götaland had employees according to Lantbruksbarometern (2014). 28 out of 33 producers had some kind of education further than high school.

Slaughter

Approximate one third of the producers would have wanted to send their pigs to a slaughter plant located more nearby the production site. However, the most important factor mentioned which determined which slaughter plant they sent their animal to was *Price* (82 %) compared to *Distance to slaughter plant* (15 %).

Animal protection laws

Our Swedish animal protection laws are suggested to be more animal friendly in comparison to some other countries laws, which also could be a possible factor to that the Swedish pork is more expensive to produce. However, the largest proportion of the producers did not think that our laws were too strict, but a slightly higher percentage of the producers believed in a better profitability if the laws were altered in comparison to those that did not believe that.

Comparison between producers who sell locally produced pork or not

The main purpose with this study was to try to find differences between producers which sold their pork as locally produced or not. But since it was an uneven distribution between the producers which sold locally or not, and few participating producers overall, it was difficult to get enough data to analyze, and no significant differences were found and the given results only can be considered valid for the sample that was studied. For instance no significant difference were found when it came to if they believed that they will have their production left after five years, or if they have a higher education, or what they thought about their profitability. Because of this, it is difficult to tell if locally produced pork is a factor which affects the producers views regarding different aspects of their production. Further research is necessary to be able to say if that is the case

Conclusion

Higher proportion of the men compared to the women always chose locally produced pork, but no differences between genders were found when it came to factors which affected their purchase or in their thoughts about the future for the pig production in Västra Götaland. There was a tendency that consumers thought of the future differed between the different locations, those from the smaller community were more skeptical. There was also a significant difference between locations when it came to which factors that affected the consumers purchase were *Availability* and *Labeling* were more common mentioned by consumers from the town, and the factor *Cheaper* were more mentioned in the smaller community.

No significant differences in the producers views regarding different aspects of their production (for example their future and profitability) were found between producers which sold their pork as locally produced or not. The study thus provided a smaller description of the producers which possible could be used in future work.

Suggestions for further research/work

Suggestions for further research that evolved from this study

- *Availability* was the most common factor mentioned by the consumers which could make them buy locally produced pork every time they purchase pork. It is important that locally produced pork is an available alternative every time the consumers intend to buy pork because if it's not available they cannot buy it. To avoid this problem, work can be done to make sure that there is enough locally produced pork available in the supermarkets. Research can be made on how much locally produced pork that is needed to fulfill the consumers requests.

- All of the producers that did not sell locally produced mentioned that they wanted to do so. By helping those producers that are interested in locally produced to find each other, and open for possibilities to cooperate on this can help share the work load. However, since one study mentioned that if pork could be traced back to a specific farmer that could increase their interest in locally produced pork (Anderson *et al.*, 2004). If the farmer is a part of a larger cooperation, specific traceability might not be possible. Despite if they want to work together with others or not, it is important to be able to give them support and advices throughout the process. Help can also be given to them in order to try to get them a mentor which already sells locally produced.

- The average age on the producers are high, and hopefully a new generation is going to take over the production, but will and can they take over? What are their thoughts and ideas about locally produced pork and what would it take for a younger generation to take over and develop the pig production, as well as develop locally produced pig production?

- Animals slaughtered at local slaughter plants and mobile slaughter plants could increase the consumers willingness to pay extra for locally produced pork (Anderson *et al.*, 2004). Mobile slaughter plants can therefore possible be a factor for improvement, and something to develop further.

References

Anderson, C., Lagerkvist, C. J., Carlsson, F., Hannerz, N., Lindgren, K., & Frykblom, P. (2004). *Värdering av griskött på en lokal marknad-ur ett konsumentperspektiv*. Technical Report 325, JTI-Institutet för jordbruks-och miljöteknik.(in Swedish).).

Bean, M., & Sharp, J. S. (2011). Profiling alternative food system supporters: The personal and social basis of local and organic food support. *Renewable Agriculture and Food Systems*, *26*(03), 243-254.

Belk, K. E., Woerner, D. R., Delmore, R. J., Tatum, J. D., Yang, H., & Sofos, J. N. (2014). The Meat Industry: Do we think and behave globally or locally? *Meat Science*.

Bredahl, L., Grunert, K. G., & Fertin, C. (1998). Relating consumer perceptions of pork quality to physical product characteristics. *Food Quality and Preference, 9*(4), 273-281.

Carpio, C. E., & Isengildina-Massa, O. (2009). Consumer willingness to pay for locally grown products: the case of South Carolina. *Agribusiness*, *25*(3), 412-426.

Chamberlain, A. J., Kelley, K. M., & Hyde, J. (2013). Comparing Consumer Preferences for Locally Grown and Certified Organic Produce in the Mid-Atlantic Region of the United States. *HortTechnology*, *23*(1), 74-81.).

Chambers, S., Lobb, A., Butler, L., Harvey, K., & Bruce Traill, W. (2007). Local, national and imported foods: a qualitative study. *Appetite*, *49*(1), 208-213.

Darby, K., Batte, M. T., Ernst, S., & Roe, B. (2006). Willingness to pay for locally produced foods: A customer intercept study of direct market and grocery store shoppers. *American Agricultural Economics Association*, 1-31.

Darby, K., Batte, M. T., Ernst, S., & Roe, B. (2008). Decomposing local: a conjoint analysis of locally produced foods. *American Journal of Agricultural Economics*, *90*(2), 476-486.

Denver, S., & Jensen, J. D. (2014). Consumer preferences for organically and locally produced apples. *Food Quality and Preference, 31*, 129-134.

Dransfield, E., Ngapo, T. M., Nielsen, N. A., Bredahl, L., Sjödén, P. O., Magnusson, M., & Nute, G. R. (2005). Consumer choice and suggested price for pork as influenced by its appearance, taste and information concerning country of origin and organic pig production. *Meat Science*, *69*(1), 61-70.

Friedrich, A. L. (2008). Intervjumetodik, kvalitativa analyser och rapportering av kvalitativa undersökningar. Kompendium. Uppsala universitet.

Grunert, K. G. (2006). Future trends and consumer lifestyles with regard to meat consumption. *Meat Science*, *74*(1), 149-160.

Grunert, K. G., Bredahl, L., & Brunsø, K. (2004). Consumer perception of meat quality and implications for product development in the meat sector—a review. *Meat science, 66*(2), 259-272.

Hand, M. S., & Martinez, S. (2010). Just what does local mean. *Choices*, *25*(1), 13-18.

Hu, W., Batte, M. T., Woods, T., & Ernst, S. (2012). Consumer preferences for local production and other value-added label claims for a processed food product. *European Review of Agricultural Economics*, *39*(3), 489-510.

Jekanowski, M. D., Williams, D. R., & Schiek, W. A. (2000). Consumers' willingness to purchase locally produced agricultural products: an analysis of an Indiana survey. *Agricultural and Resource Economics Review*, *29*(1), 43-53.

King, R. P., Gómez, M. I., & DiGiacomo, G. (2010). Can local food go mainstream. *Choices*, *25*(1), 4.

Lind, L. W. (2007). Consumer involvement and perceived differentiation of different kinds of pork–a Means-End Chain analysis. *Food quality and preference*, *18*(4), 690-700.

Ngapo, T. M., Dransfield, E., Martin, J. F., Magnusson, M., Bredahl, L., & Nute, G. R. (2004). Consumer perceptions: pork and pig production. Insights from France, England, Sweden and Denmark. *Meat Science*, *66*(1), 125-134.

Nie, C., & Zepeda, L. (2011). Lifestyle segmentation of US food shoppers to examine organic and local food consumption. *Appetite*, *57*(1), 28-37.

Papanagiotou, P., Tzimitra-Kalogianni, I., & Melfou, K. (2013). Consumers' expected quality and intention to purchase high quality pork meat. *Meat science*, *93*(3), 449-454.

Resano, H., Perez-Cueto, F. J., de Barcellos, M. D., Veflen-Olsen, N., Grunert, K. G., & Verbeke, W. (2011). Consumer satisfaction with pork meat and derived products in five European countries. Appetite, 56(1), 167-170.

Roininen, K., Arvola, A., & Lähteenmäki, L. (2006). Exploring consumers' perceptions of local food with two different qualitative techniques: Laddering and word association. *Food quality and preference*, *17*(1), 20-30.

Trost, J. (2001). Enkätboken (2: a uppl.). *Lund: Studentlitteratur*, *5*.

Verbeke, W., Pérez-Cueto, F. J., Barcellos, M. D. D., Krystallis, A., & Grunert, K. G. (2010). European citizen and consumer attitudes and preferences regarding beef and pork. *Meat Science*, *84*(2), 284-292.

Verbeke, W., Pérez-Cueto, F. J., & Grunert, K. G. (2011). To eat or not to eat pork, how frequently and how varied? Insights from the quantitative Q-PorkChains consumer survey in four European countries. *Meat science*, *88*(4), 619-626.

Zepeda, L., & Leviten-Reid, C. (2004). Consumers' views on local food. *Journal of Food Distribution Research*, *35*(3), 1-6.

Internet

Dahlbergs. 2014. Nya avräkningspriser vecka 47. http://www.dahlbergs.nu/prislista/prislista_2.pdf [2014-11-23]

Dalsjöfors. 2014. Avräkningsnotering Vecka 46. http://www.dalsjoforskott.se/leverantorer/images/uploads/Avrakningsprislista_v46_2014_Nya.pdf [2014-11-23]

Faostat. 2014. Faostat3.fao.org [2014-08-23]

Handlingsplan – för att öka svensk grisproduktion, 2014. http://www.lrf.se/Documents/140609Handlingsplan%20f%C3%B6r%20att%20%C3%B6ka%20svensk%20grisproduktion.pdf [2014-10-11]

Jordbruksverket. 2013A. Rapport 2013:2. Köttkonsumtionen i siffror – Utveckling och orsaker. http://www.jordbruksverket.se/download/18.39da9f0113cb389bda880001123/Ra+2013_2.pdf [2014-08-23]

Jordbruksverket. 2014A. Animalieproduktion. Års- och månadsstatistik – 2014:07. JO 48 SM 1409. http://www.jordbruksverket.se/webdav/files/SJV/Amnesomraden/Statistik%2C%20fakta/Animalieproduktion/JO48SM1409/JO48SM1409_ikortadrag.htm [2014-09-13]

Jordbruksverket. 2014B. Animalieproduktion. Års- och månadsstatistik – 2014:09. JO 48 SM 1411. http://www.jordbruksverket.se/omjordbruksverket/statistik/statistikomr/animalieproduktion.4.67e843d911ff9f551db80004608.html [2014-10-15]

Jordbruksverket. 2014C. Handel med griskött. Uppdaterad 2014-06-11. http://www.jordbruksverket.se/amnesomraden/handel/kottmjolkochagg/handelmedkottmjolkochagg/handelmedgriskott.4.3a3862f81373bf24eab80001818.html [2014-07-28]

Jordbruksverket. 2014D. Marknadsstatistik griskött 2014. http://www.jordbruksverket.se/download/18.37e9ac46144f41921cd1fa25/1402484552270/Marknadsstatistik_grisk%C3%B6tt.pdf [2014-08-16]

Jordbruksverket. 2014E. Statistikdatabas [Several different occasions]

Jordbruksverket. 2014F. Sverige- det nya matlandet. En undersökning om svenskarnas matvanor och attityder till mat. http://www.jordbruksverket.se/download/18.724b0a8b148f52338a35f71/1414683576200/Rapport_matvanor_2014.pdf [2014-08-13]

KLSugglarps. 2014. Avräkningsnotering gris vecka 47. http://www.klsugglarps.se/aciro/bilddb/objektvisa.asp?idnr=fAtHIYCBqO3J15x9A9nqXSZYmvTtnlbtn66be5rJTBA0QiXqna3PSEmNAtU7 [2014-11-23]

Lantbruksbarometern. 2008. 3 831 svenska bönders uppfattningar och förväntningar om konjunkturen. LRF Konsult, Swedbank. http://www.lrf.se/PageFiles/7014/LantbruksbarometernTotal2008.pdf [2014-11-05]

Lantbruksbarometern. 2011. 3690 svenska bönders uppfattningar och förväntningar om konjunkturen. LRF konsult, LRF, Swedbank och Sparbankerna. https://www.swedbank.se/idc/groups/public/@i/@sc/@all/@kp/@foretag/documents/article/cid_225262.pdf [2014-11-05]

Lantbruksbarometern. 2014. 1000 svenska bönder om konjunkturen. LRF konsult, Swedbank och Sparbankerna. http://www.swedbank.se/idc/groups/public/@i/@sc/@all/@kp/documents/presentation/cid_1347808.pdf [2014-11-05]

Livsmedelssverige. 2008. De lokala matproducenterna och dagligvaruhandeln: Kartläggning- hinder och möjligheter- förslag. http://pub.epsilon.slu.se/11030/7/bjorklund_h_etal_140310.pdf [2014-09-23]

Regionfakta. 2014. Västra Götalands Län – Fakta och perspektiv. http://www.regionfakta.com/Vastra-Gotalands-lan/ [2014-11-05]

SCB. 2014. Statistiska Centralbyrån. Animalieproduktion – Års-och månadsstatistik – 2014:07. Sveriges officiella statistik. Statistiska meddelanden. JO 48 SM 1409 http://www.scb.se/Statistik/JO/JO0604/2014M07/JO0604_2014M07_SM_JO48SM1409.pdf [2014-08-15]

Skövde slakteri. 2014. Notering gris, ungsugga och sugga Vecka 47. http://www.skovdeslakteri.com/filer/Gris_plus_47.pdf?un=1544 [2014-11-23]

Västra Götalandsregionen, 2014. Fakta Västra Götaland. http://www.vgregion.se/upload/Regionutveckling/Publikationer/FaktaVG/Fakta_klickbar_text_grafer_web.pdf [2014-11-11]

Attachment 1 – Consumer survey

1. Kön och ålder:

☐ Man ____ år

☐ Kvinna ____ år

2. Köper du någon gång närproducerat fläskkött?

☐ NEJ, aldrig

☐ JA, vid några tillfällen

☐ JA, alltid, i den mån det finns tillgängligt att köpa

3. Vad hade krävts för att du endast skulle köpa närproducerat fläskkött?
(det är tillåtet att kryssa i flera alternativ)

☐ Att det skulle vara billigare

☐ Att det skulle vara mer tillgängligt (vilket innebär att det finns att köpa vid de tillfällen som man tänker köpa det)

☐ Bättre märkning av köttet (vilket innebär att det framgår tydligt att det är närproducerat)

☐ Att det hade smakat bättre

☐ Annat ____

4. Avslutningsvis, hur tror du framtiden ser ut för grisproducenterna i Västra Götalands län?

☐ Oförändrad jämfört med hur den är nu

☐ Sämre än vad den är nu

☐ Bättre än vad den är nu

☐ Vet ej

Attachment 2 – Producer Survey

1. Frågor kring närproducerat fläskkött

1.1. Säljs fläskkött från din gård som närproducerat i någon grad?

☐ JA (hoppa till fråga 1.3.)

☐ NEJ

1.2. Om du ej säljer kött som närproducerat idag, skulle du vilja sälja ditt kött som närproducerat?

☐ JA

- Vad är det då som hindrar dig från att sälja ditt kött som närproducerat?

☐ NEJ

- Vad är det då som avgör att du inte är intresserad av att sälja ditt kött som närproducerat?

1.3. Om du skulle argumentera för varför konsumenter ska köpa närproducerat fläskkött, vad skulle då vara ditt argument?

2. Frågor kring synen på framtiden inom grisproduktionen

2.1. Tror du att du kommer att ha kvar din grisproduktion om 5 år?

☐ JA (hoppa till fråga 2.3.)

☐ NEJ

☐ Vet ej

2.2. Om du ej tror att du kommer att ha kvar din grisproduktion, vad tror du är anledningen till att du inte kommer att ha kvar den?

2.3. Vad har du för syn på framtiden på den svenska grisproduktionen överlag?

3. Frågor kring lönsamhet

3.1. Hur skulle du beskriva lönsamheten från din grisproduktion idag?

☐ Mycket Bra

☐ Bra

☐ Varken bra eller dålig

☐ Dålig

☐ Mycket dålig

3.2. Vad anser du vara den största faktorn som påverkar din lönsamhet?

3.3. Vad anser du vara utmaningen i att behålla en bra lönsamhet?

4. Frågor kring produktionen

4.1. Vad har du för produktionssystem?

4.2. Har du någon annan form av produktion vid sidan av grisproduktionen?

4.3. Är din grisproduktion ekologisk?

☐ JA

☐ NEJ

4.4. Hur många djur har du?

4.5. Odlar du eget foder till djuren i någon grad?

☐ JA

☐ NEJ

4.6. Vaccinerar du dina grisar mot galtlukt?

☐ JA

☐ NEJ

5. Frågor kring sysselsättningen

5.1. Vad har du för sysselsättningsgrad i grisproduktionen (heltid/deltid)?

5.2. Om du jobbar deltid med grisproduktionen, vad hindrar dig från att vara heltidsarbetande?

5.3. Har du några anställda inom grisproduktionen?

☐ JA

☐ NEJ (hoppa till fråga 6.)

***5.4. Om du har anställda inom grisproduktionen, vad har de för sysselsättningsgrad?**

***5.5. Om du har anställda inom grisproduktionen, är de kvinnor eller män?**

6. Frågor kring slakten

6.1. Till vilket slakteri skickar du dina djur?

6.2. Skulle du vilja skicka dina djur till ett slakteri som ligger närmare?

6.3. Vad är det som främst avgör vilket slakteri som du skickar djuren till?

7. Frågor kring djurskydd

7.1. Anser du att djurskyddsreglerna gällande gris idag är för hårda?

☐ JA
☐ NEJ
☐ Vet ej

7.2. Tror du att ändrade djurskyddsregler (tex sänkt avvänjningsålder) kan öka lönsamheten?

☐ JA
☐ NEJ
☐ Vet ej

8. Avslutande frågor

8.1 Kön och Ålder

☐ Man ____ år
☐ Kvinna ____ år

***8.2 Civilstånd?**

***8.3 Antal barn i hushållet?**

8.4 Utbildningsnivå?

*** = Questions that only will be summarized and presented for the county administrative board (länsstyrelsen)**