



Women farmers in Denmark: An analysis of perceived obstacles and experiences in regards to farm ownership

SLUSE project

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Abstract

In 2020, only 5% of Danish farmland was owned by women whereas 40% of the workforce consists of women. This discrepancy between owners and non-owners among women in agriculture is noteworthy and therefore worth investigating. Therefore, this report aims to answer the following research question: What are the most important factors responsible for the low percentage of women farm ownership in Denmark and how do women farmers perceive and experience these factors? Through our qualitative and quantitative study, we have found that, within the male-dominated Danish agriculture system, a multitude of internal and external factors influence women farmers' perceptions and experiences of obstacles to farm ownership, shaping their wish to own. The main external factors that we have identified are patrilineal farm succession, skill-imbalance, respect, access to capital, gendered labour division and intensification and mechanisation of the sector. The main internal factors include risk adversity, motivations, independence, having children, commitment and sustainability. Although tradition and gender norms still persist, the women from our study feel a gradual change in the sector. Our study serves as a starting point for future research that could investigate the relevance of ownership for women, whether perceived or real, in the context of Danish agriculture's ongoing changes.

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1. Introduction

In Denmark, women are slowly but steadily taking up traditionally masculine professions in many sectors. This trend is also apparent in the farming industry, where the workforce consists of 40% women (Danmarks Statistik, 2020). However, when it comes to actual farm ownership, the number says something different. In 2020, only 5% of Danish farmland was owned by women (Ibid). This number is one of the lowest within the EU, where 30% of farms are owned by women on average (Franic and Kovaciecek, 2019). This discrepancy between owners and non-owners among women in agriculture is noteworthy and therefore worth investigating.

A look through the literature in this field shows that over the past decades, the role and position of women in the agricultural sector, traditionally constructed as a male space, has changed: Women farmers are no longer regarded only as wives, daughters or helpers, but as actors responsible for decision-making, taking on the roles of entrepreneurs or managers (Whitley and Brasier, 2020). Despite this development, women still encounter an array of obstacles to farming, which often discourage their participation in the sector (Sachs et al., 2016).

The presence of capital-intensive barriers to entry, including land cost, equipment, machinery, and buildings, often hinders women from farming (Sachs et al., 2016). Furthermore, several studies in western countries point out that farmland is not accessible to everyone in an equal way, especially in the context of the family farm (Cavicchioli et al., 2018; Lidestav, 2010; Rossier and Wyss, 2008; Shortall, 2006; Shortall, McKee and Sutherland, 2019; Silvasti, 2003). Despite the presence of juridical equal inheriting systems, daughters are generally excluded from the decision about the family-farm succession, and farms are transferred from father to son (ibid). Due to this patrilineal inheritance system and capital-intensive barriers to entry, *“for many women, access to land is directly tied to a male partner”* (Pilgeram and Amos, 2015, p. 17).

Patrilineal farm succession is strongly intertwined with gendered socialisation of the children on the farm (Silvasti, 2003). Due to gender specific expectations of continuing the family tradition, sons are often encouraged in taking part of the farm activities and they acquire farming skills, especially related to field work and machinery, at an early stage (ibid). Women, on the other hand, might not experience the same exposure to education in farming while growing up (ibid). More in general, part of the literature suggests that access to agricultural education and training is often an obstacle faced by women (Charatsari et al., 2013).

As women rarely inherit and own farmland, they tend to be a minority in farming organisations and in general less visible in the public spaces of farming (Shortall, McKee and Sutherland, 2019). Shortall (2001, p.170) points out that *“there is no country where women are well represented in farming organisations”*. The literature on gender and agricultural leadership, although limited, highlights the presence of several obstacles that constrain women’s participation in agricultural organisation (Grace, 1994; Pini, 2002). These constraints are: a strong masculinist culture, self-perception of inadequate skills due to previous gendered experiences and organisational factors of meetings which do not fit with women’s household commitments (ibid).

Women may also face difficulties in being recognized as legitimate farmers (Keller, 2013). Farming has in fact for long been considered as a masculine occupation, associated with strength and technological abilities (Saugeres, 2002; Keller, 2013). When working with a male partner, women are often perceived solely as farmwives and feel that their role and contribution is overlooked (Keller, 2013; Trauger, 2004). Women may also undertake a masculine performance to gain respect within the farming community (Pilgeram, 2007).

This masculine performance can on the other hand also result in hostility from men (Smyth, Swendener and Kazyak, 2018).

The value of owning your own farm is investigated by Horst and Marion (2018, p.5) who argue that “*both non-operating landowners and owner-operators in many ways have the most secure land tenure, and in that way, the most privilege and power. (...) Tenants have a less secure position, in that they have to negotiate a lease on a regular basis, comply with the owners’ demands, typically have little say about the future of the land, and do not build wealth long-term from the land*”. Furthermore, having the decision power on the farm helps to reinforce the identity as a farmer, engage in decision-making, production and investment and ownership of land also leads to access of other resources such as capital, infrastructure, training and networks such as farmers associations boards (Dunne, Sietou and Wilson, 2021). These findings suggest that the low percentage of women farm ownership is negatively impacting women’s empowerment and possibilities.

Even though the above studied literature points towards different disparities and structural patterns, no literature has been found on the obstacles women face in regards to farm ownership in Denmark. In an interview from January 2022, professor in gender, power and diversity from RUC Kenneth Reinicke, when asked about the Danish gender gap in farm ownership, declared that there is too little research on the subject to state anything significant (Røhe, 2022). This statement and the lack of literature on the subject has sparked our interest to understand which factors influence the low percentage of farms owned by women in Denmark.

Research question

What are the most important factors responsible for the low percentage of women farm ownership in Denmark and how do women farmers perceive and experience these factors?

This question is based on the assumption that more women would like to be owners of farms, but that different factors are hindering them from farm ownership.

Danish farming overview

Denmark has historically been a farming nation (Kærgård, 2017). Today the number of farms has decreased dramatically from 208.100 in 1946 to 33.000 in 2020 (Danmarks Statistik, 2020; Kærgård, 2017). Still Denmark’s total area consists of 61% farmland (Pedersen and Møllenberg, 2017). The farms are getting bigger and the production has intensified with increasing specialisation within each sub-sector (Kærgård, 2017). The number of organic farms has steadily increased since the 90s with dairy cows being the predominant type of organic farming, particularly concentrated in Southern Jutland (Pedersen and Møllenberg, 2017). Our study site Tønder is the municipality in Denmark with the largest area of organic production (Landbrugsstyrelsen, 2022).

2. Description of methods and data analysis

2.1. Research design

Due to the low level of research on women farm ownership in Denmark, we have had an exploratory approach, and worked both inductively and deductively to find, describe and explain the patterns connected to our research question (Andersen et. al, 2012). Our study has therefore been composed of multiple methods and both systematical and explorative data acquisition (Figure 1).

The in-depth semi structured interviews, questionnaire, group observation and informal group interview were focused on investigating and comparing women in farming who own and women who don't own to explore and describe the factors influencing women farm ownership. The informant interviews and focus groups were intended to help us understand the landscape around and future of women and farm ownership. The different methods and sources of data enabled us to triangulate our results and further develop the understanding of our research question.



Figure 1: Methods applied to investigate our research question (made with template from 'Visme').

2.2. Interview Methodology

2.2.1. Interviews with women farmers

To get an in-depth understanding of the motivations and obstacles that women farmers face in Denmark, we arranged semi-structured interviews with 7 women farmers.

Setup

We conducted five interviews in person on the women's farms with short farm tours and/or in their homes and two were as video calls due to the unavailability of the interviewees (Table 1 with overview of interviews). The interviews were held in English, if possible, and otherwise in Danish or German.

We used two different interview guides: One was tailored to owners (including co-ownership) (Appendix B) and the other one was slightly modified to fit non-owners (Appendix C). During the interviews, we let the conversation flow freely while still making sure to get the answers to our predefined questions.

List of obstacles

After the first two in-depth semi structured interviews, we developed a list of potential obstacles to farm ownership that women might face (Appendix D). This list also formed the basis for the 8 obstacle questions in the questionnaire (2.5: Questionnaire Methodology). During the following interviews, we first wanted the women to come up with what they see as potential obstacles for women ownership. After this, we presented them our list of obstacles and asked them to elaborate on why they agree or disagree that these obstacles affected them.

Sampling method

We intentionally sampled the interviewees to have both owners, co-owners and non-owners. We further prioritised women farmers living in Southern Jutland in order to conduct in-person interviews. See Table 2 for an overview of the women farmers. We recruited our interviewees through the Facebook group 'De Kvindelige Landmænd', snowball sampling and suggested contacts from professors and other informants.

Table 1: Overview of in-depth semi structured interviews

| Who | Interview format | Interviewers* | Structure | List of obstacles |
|-----------|--|--|-----------------------------------|---------------------------------------|
| Alberte | Visit at her home | Alberte , Mélanie, Giulia | Interview Guide Non-owner | No (formed the basis for the list) |
| Dorthe | Visit on her farm with farm tour | Fiona , Hanna | Interview Guide Owner | No (formed the basis for the list) |
| Charlotte | Visit at her home and farm tour after | Mélanie , Hanna, Fiona | Interview Guide Owner | Yes |
| Ingrid | Visit on her farm with farm tour, then in her home | Fiona, Giulia , Mélanie, Hanna, Alberte | Interview Guide Owner | Yes |
| Berith | Visit at her home | Alberte , Giulia, Fiona | Interview Guide Owner | Yes, including ranking for importance |
| Kristine | Video call | Alberte | Interview Guide Non-owner | Yes (read out loud) |
| Lone | Video call | Hanna , Mélanie | Separate Phone Interview Guide | Yes (read out loud) |

*Names in **bold** were the main interviewers

2.2.2. KB General Assembly

Group observation

Hanna and Alberte were able to attend the first general assembly of 'De Kvindelige Bønder' (hereafter, the women that attended the general assembly will be mentioned as KB women). The nine KB women present at the assembly discussed their association, the formation of the new board and future plans for the association. During this, we took notes, observed their reactions and listened to what they thought was important for their association.

Informal group interview

The women were curious about our project and after the official meeting a casual conversation quickly turned into a group interview with 5 of the women. The interview was loosely based on the interview guide. The women responded and commented on each other's perceptions of the different questions we asked. The group interview was in Danish.

2.2.3. Informant interviews

Semi-structured interviews via video calls were conducted with key informants Ellen Andresen and Anders Frederiksen who are knowledgeable in farming issues, specifically juridical and financial matters (see Table 3). Both the interviewees were selected based on their expertise and their location (Southern Jutland). The informant interviews aimed at gathering information on: (1) role and position of the interviewees within LandboSyd; (2) the process of getting a loan or of acquiring and inheriting a farm from a financial and juridical perspective; (3) perception on women farmers; (4) perception on future changes; (5) their reasoning for low women farm ownership.

2.2.4. Focus group interviews

The focus groups for both the girls (7 in total) and the boys (5 in total) were conducted at the farming vocational school (Gråsten Landbrugsskole) (Table 4). The attendees were recruited through the school administration. We collected information on: (1) their aspirations; (2) their perception on potential obstacles to farm ownership; (3) their perception on the role of women in farming and (4) how they see their farming future. Their perception on obstacles to farm ownership was further investigated presenting the students our list of potential obstacles and asking to rank and make comments on them. The boys got an additional question when we asked them how they thought the girls had ranked the obstacles, giving us their perceptions of their female peers. After the focus groups, both girls and boys ended up in the same room and started discussing the different rankings.

2.3. Interview research sample

Table 2: Interviews with women farmers and KB women

| Interviewee | Role | Age | Farm type and size | Area in Denmark | Grew up on farm | Farm entry method | Education |
|---------------------|-------------------------------------|-------|-----------------------|------------------|-----------------|------------------------------|--|
| Charlotte | Owner + Manager | 51 | 500 sows | Southern Jutland | Yes | Bought from parents | No farming education |
| Dorthe | Owner + Manager | 55 | 150 cows | Southern Jutland | Yes | Bought from parents | University |
| Ingrid | Owner + Manager | 56 | 140 cows | Southern Jutland | Yes | Bought independently | University |
| Berith | Co-Owner | 58 | 22.000 full line pigs | Southern Jutland | No | Married in | No farming education |
| Lone | Co-Owner | 57 | 110 cows | Western Jutland | No | Married in | Farming school |
| Kristine | In the process of becoming an owner | 22 | 160 cows | Western Jutland | Yes | Will buy from parents | Farming school |
| Alberte | Manager | 26 | 1100 sows | Southern Jutland | Yes | Works on an independent farm | Farming school |
| KB General Assembly | Non-owners | 17-28 | Cows or pigs | All over Denmark | Mix | Mix | 8 farming school, 1 no farming education |

Table 3: Informant interviews

| Interviewee | Role | Work | Interview format |
|--------------------|-----------|-----------------------------|------------------|
| Anders Frederiksen | Informant | Financial Advisor LandboSyd | Video call |
| Ellen Andresen | Informant | Juridical Advisor LandboSyd | Video call |

Table 4: Focus group interviews

| Group | Participants | Interview format |
|-------------------|--------------|--|
| Focus group Girls | 7 girls | Focus group discussion including obstacle ranking for their own obstacles |
| Focus group Boys | 5 boys | Focus group discussion including obstacle ranking for their own obstacles and how they think the girls did the ranking |

2.4. Analysis Framework

We developed our framework for the analysis through a continuing learning process: First, we looked at the findings in existing literature (presented in the introduction) to get a preliminary understanding of the topic. Then we made a mindmap of the factors that could influence whether or not women own their own farm (Appendix E). This mindmap was the point of departure for our interview guides. After the first two interviews, we developed a list of eight obstacles to farm owning (Appendix D). The mindmap and the eight obstacles formed the basis for our questionnaire and further interviews.

Later on, we created our analytical framework (Figure 2) by identifying seven themes that play a major role in enabling or disabling women from owning a farm. These themes are: Motivation, skills, farm succession, finances, risks, private life and respect (Appendix F). Our choice of themes has been with a focus on including anything we found relevant to women's willingness and capability to own with as few overlaps between the categories as possible. Within all these themes, gender norms play an important role in how the women farmers perceive and experience the factors. We also found that ongoing structural changes in Danish agriculture influence women farm ownership in Denmark.

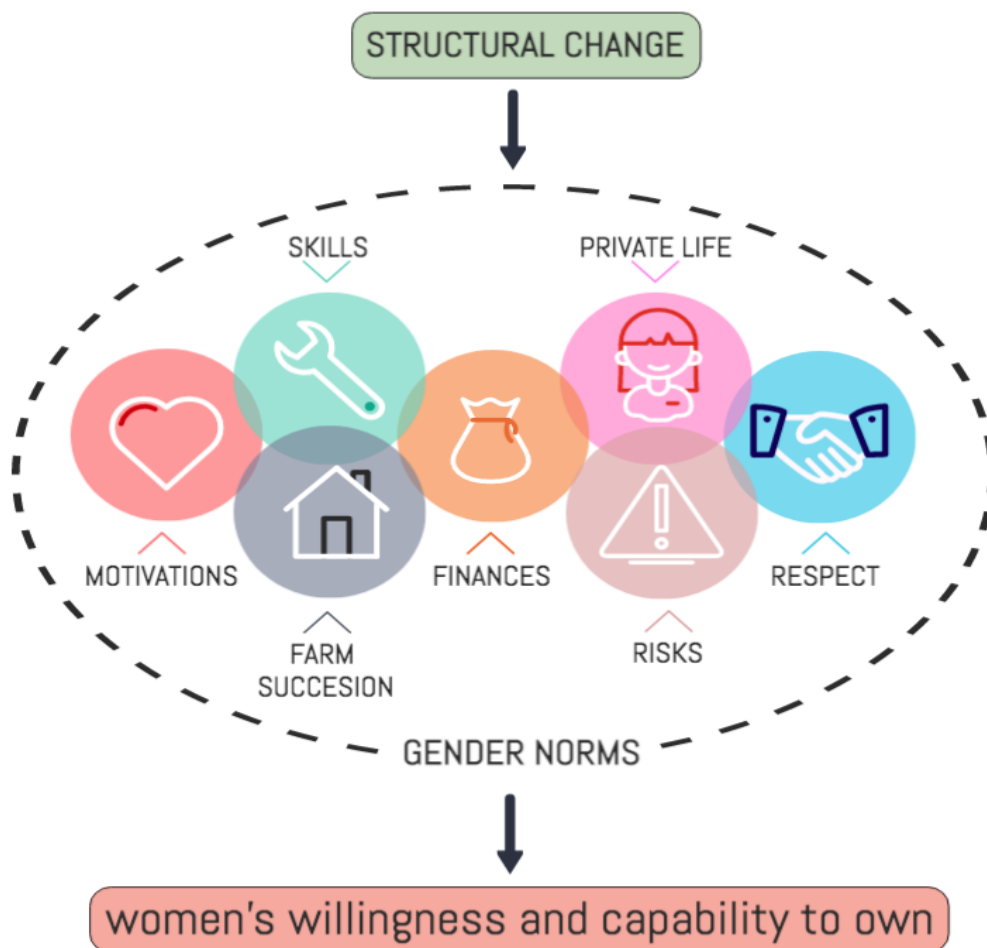


Figure 2: Framework for analysing which and how factors influence women's willingness and capability to own a farm (made with template from 'Visme').

2.5. Questionnaire Methodology

To triangulate our data from the interviews, we made an online questionnaire investigating women farmers in Denmark. The questionnaire contained both closed-ended and open-ended questions. The questionnaire included questions on demography, their motivation for farming, if they worked on or owned a farm, description of the farm and decision power on the farm. If they didn't own a farm, we asked if they wanted to. We then asked them how much they agree or disagree on how the obstacles have affected them (for owners), or would affect them (for non-owners). In the end, we asked them why they think only 5% of farmland in Denmark is owned by women.

Because of the low number of women farm owners in Denmark, we anticipated that it would be hard to gather enough data to do advanced statistical tests. We therefore chose to weigh having more open-ended questions and thus use the questionnaire as a way to conduct 'mini interviews' with more women farmers. The questionnaire was created with Google Forms and distributed through different Facebook groups (Appendix G) and sent to the 7 women we interviewed.

2.6. Questionnaire research sample

Our questionnaire sample consists of 40 women farmer respondents (Table 5). The analysis is based on a grouping of owners and co-owners because the main objective is to compare women who own and women who don't, and the higher number of units in the groups made quantitative analysis possible. This makes a distribution of 30% owners in our sample (Appendix H). This is an overrepresentation compared to our population, where around 17% are owners (Danmarks Statistik, 2020). This overrepresentation was intended since a big part of our quantitative analysis is based on finding tendencies within and between owners and non-owners.

Table 5: Overview of questionnaire sample

| Category* | Sample |
|-----------------------|---|
| Number of respondents | 40 |
| Role | 12 owners 28 non-owners |
| Occupation | 62% Full time farmers or with supplementary job 13% Part time farmers with other job 15% Students 5% Part time farmers with no other job 5% Hobby farmers |
| Age | 18-64 |
| Farm type | 64% Livestock 36% Crops, vegetables and/or fruits |
| Farm practise | 53% Organic 47% Conventional |
| Farm size average | Solo owners: 59 ha Co-owners: 232 ha |

| Category* | Sample |
|----------------------------|---|
| | Non-owners: 307 ha |
| Grew up on a farm | 40% grew up on a farm |
| Farm owners entry method | 75% of owners bought independently 8% through their own family 8% through divorce 8% through co-owner's family |
| Highest achieved education | 43% Vocational school 37% Further education 15% Gymnasium 5% Ground school |

*See Appendix I for category explanation

2.7. Questionnaire data analysis

Through the statistical data analysis tool R (Version 4.1.2), we ran a series of OLS regressions to test possible correlations of some variables (regression equations found in Appendix J).

We wanted to investigate whether there were differences in motivations to be a farmer that influence whether a respondent owns or not. For this reason, we ran regression analyses for each of the motivations (dummy) as our dependent variable and ownership (dummy) as our independent variable.

We also wished to investigate whether owners and non-owners rate the obstacles they have faced or are facing in ownership differently. We ran regression analyses for each of the obstacles (interval) as our dependent variable and ownership (dummy) as our independent variable, adding the control variable of age, and then having children. Controlling for external variables is useful to remove their effects on other variables.

For the results that were statistically insignificant, we decided to only rely on descriptive analysis.

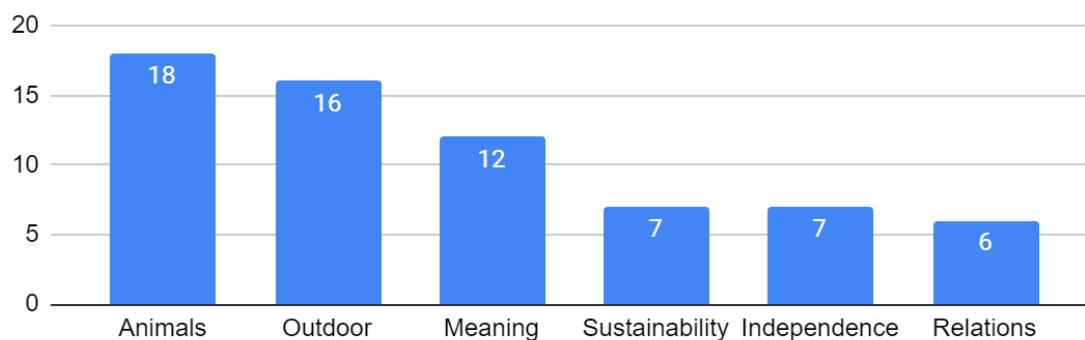
3. Analysis

For each theme in our framework we analyse what our interviewees and questionnaire respondents answered and whether there are differences between owners and non-owners. In relation to this, we present the findings of our focus group interviews.

3.1. Motivation

This theme encompasses the different motivations that women have to be farmers and/or farm owners. The interviewees were driven into farming mainly for intrinsic reasons, like the desire of working with animals and the appreciation for the farming lifestyle. We see the same patterns in the questionnaire: 45% of the women mentioned animals as what motivates them to become farmers (Appendix K & Figure 3).

Figure 3: Number of times motivational factors were mentioned



For the women we interviewed, the main drivers for becoming a farm owner are the desire to be independent and to continue the family farm tradition. In the questionnaire, 18% of the women mentioned independence as motivation to become farmers (Appendix K). Out of these, 86% either already own or wish to own in the future. The wish for independence could therefore be a driver for buying a farm .

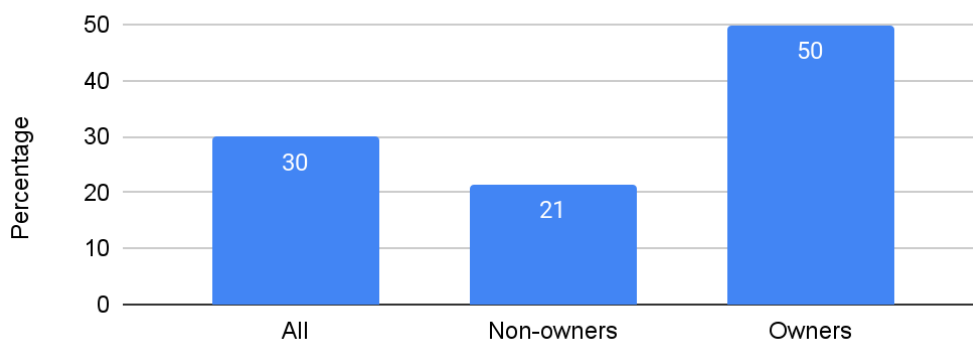
In the questionnaire, we received additional motivations such as enjoying nature and the physical work outside (40%), giving a meaning to their work (30%) and sustainability (18%) (Appendix K & Figure 3). Many are into farming *“to do work that is meaningful”* and to *“create a better agriculture”*.

In the in-depth semi structured interviews, five of the seven women grew up on farms. They mentioned how being involved in the daily farming activities is how their interest started. All three owners grew up on farms and this clearly shaped their wish to become farm owners. In the questionnaire data, only 40% grew up on farms. However, 50% of owners grew up on farms, which could point towards people growing up on farms being more likely to own a farm (Appendix L).

Nevertheless, many respondents (30%) in the questionnaire thought that most women are simply not interested in taking over their family farms (Appendix M). Especially owners (50%) compared to non-owners (21%) mentioned lack of interest as a reason for low women farm ownership in Denmark (Appendix M & Figure 4). According to Ellen Andresen, today, owning a farm is similar to running a big business, which does not interest a lot of women.

A lack of interest was also mentioned in the interviews. Both Charlotte and Berith try not to put pressure on neither their sons nor their daughters to take over the farm, but nevertheless their daughters are not interested. This could show that children might be subject to gendered expectations from friends, other members of the family or the community which shape their interests at an early age. Berith explains that girls are brought up with less confidence than boys, and as a consequence, women doubt their own abilities. *“Boys are told they’re cool and girls that they’re sweet”*, she says. Lone, Charlotte, Ingrid and Berith are aware of this and try to fight back traditional norms in their families.

Figure 4: Lack of interest as the reason for only 5 % of farmland owned by women



3.2. Skills

Upbringing, gender socialisation and education influence skills. The women interviewed who grew up on farms share memories of helping out on the farm, acquiring farming skills from an early age. Kristine talks about how she had her own little milking stool; Alberte remembers that she always followed her father around the farm. All of their memories revolve around animals, whereas their brothers showed more interest in machinery. Ingrid’s brothers got completely different learning experiences than her because her father taught them to drive the tractor and not her. The women who went to farming school mention this skill-imbalance in that the boys already had machinery skills, which made it hard for the girls to learn, especially the girls that did not grow up on farms. This point is also made in the questionnaire. Alberte and the KB women further talked of girls studying crop production that had difficulties finding internships because people did not think they could operate tractors. The gendered perception of farm work therefore directly influences the skills and potentially the self-confidence of women farmers.

3.3. Finances

Regardless of whether someone buys a farm from family or on the free market, large amounts of capital from bank loans and savings are needed. All interviewees think it’s difficult for farmers to get bank loans to buy farms. Similarly, in the questionnaire, many answered that they agree or strongly agree with the statement that getting bank loans is or has been an obstacle for them (41%) (Appendix N). More non-owners than owners agree with this (Figure 5). This may be because the owners possibly acquired their farms when the agricultural economy was better, as many interviewees and our informants mentioned that now is a bad time to buy farms.

Most of our interviewees do not think of this as a gendered obstacle; they said that education and skills are the most important. *“It’s a hurdle for everyone.”*, Lone stated. Dorthe’s bank director didn’t take her seriously because of her university background and accused her of wanting a farm just for fun. However, Dorthe also

added that her gender most likely played a role too. Furthermore, education and skills are to some degree also influenced by gender (see section ‘Skills’).

Some interviewees do perceive banks as discriminatory against women. Berith said that *“As a woman, you need to prove more and work harder”* in order to get a bank loan, as also suggested by two respondents in the questionnaire. One added: *“banks trust men more”*. Our informants Anders Frederiksen and Ellen Andresen explained which factors determine whether banks give loans to new farmers, more specifically education, capital, leadership skills and aspiration for the farm. When asked whether banks discriminate based on gender, they disagreed.

According to many interviewees and Anders Frederiksen, taking over a family farm is easier than buying independently. This is partly due to financial benefits and partly because the bank knows and trusts your family. This can also be seen in the questionnaire, where owners who acquired their farm independently tend to see getting a bank loan as a bigger obstacle than owners who acquired through familiar relations (Appendix O).

3.4. Risks

Most of the women in the interviews were aware of the many risks of owning a farm, especially since the farming economy is subject to large fluctuations and their whole house and family are at stake. *“Business is not just business because the business is also our house.”*, Charlotte said. Alberte’s parents discouraged her from buying a farm because of the high risks. This might be why Alberte herself seemed to be very risk-averse. Dorthé is glad she was not aware of the risks when she bought the farm. Had she known, she might not have chosen to own. *‘You grow with the challenge’* seems to be her motto.

Figure 5: "Banks won't lend me money"

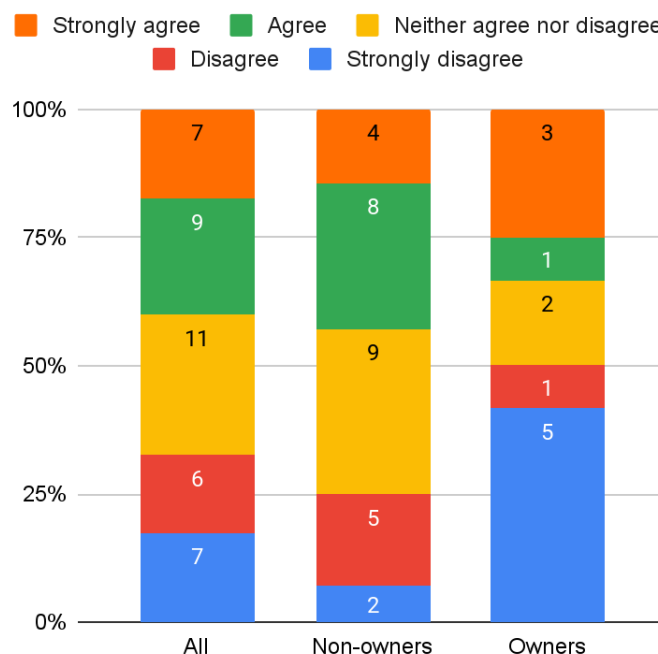
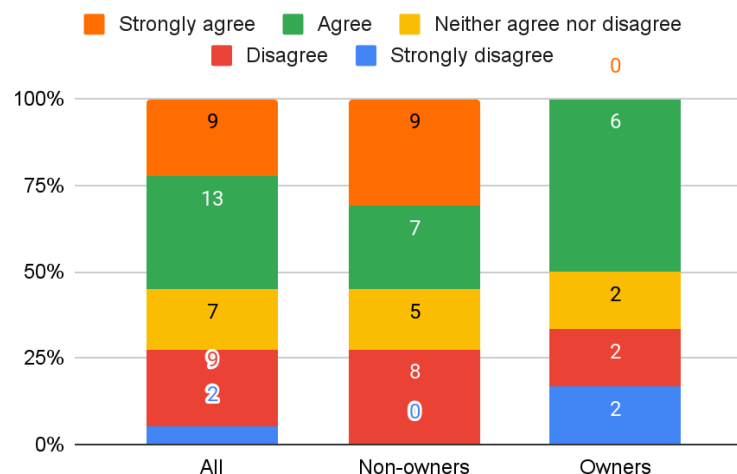


Figure 6: “There’s too much risk involved with buying a farm”



In the questionnaire, 56% of our respondents either agree or strongly agree there is too much risk involved with buying a farm for them (Appendix P). The non-owners especially tended to strongly agree (31%) compared to owners (0%) (Figure 6).

The non-owners seem to be more aware of the risks or weigh the risks higher than the owners do which could be one of the reasons why they don't own a farm. In contrast, the risks don't seem to stop the owner's wish to own.

In general, most interviewees and our informants think that women are more risk averse than men. Anders Frederiksen sees risk as the biggest reason for women not to own farms. A few women from the questionnaire seemed to agree and said that *“men have a higher tendency and willingness to take risks”*. Berith thinks that women might be more interested in being employed on farms rather than owning, since employment imposes less risks. Charlotte and Dorte however clearly differentiated themselves from worrying women, implying that they have more self-confidence and don't shy away from risks.

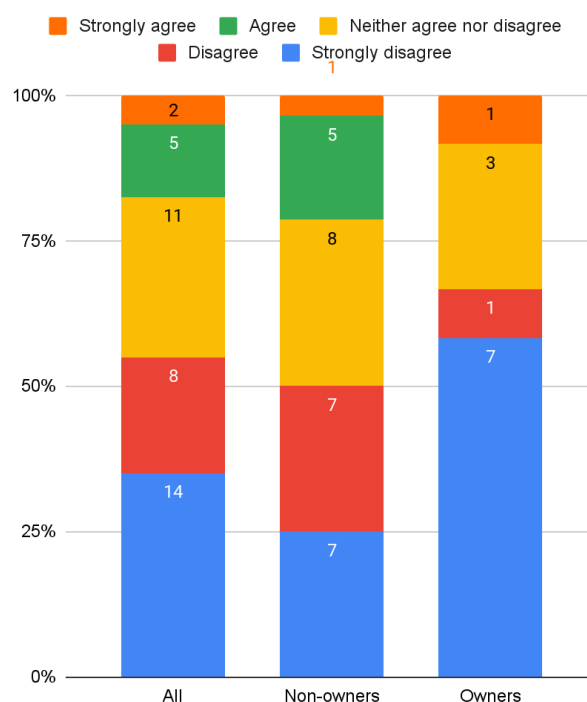
Ingrid, Berith and Lone all agree that risk adversity of women is to some degree tied to gender norms and can be seen as a barrier to farm ownership. They think that women cause their own hurdles because they don't think they can live up to being a farm owner, they don't believe enough in themselves.

3.5. Private life

Being a farm owner requires a lot of time, energy and dedication that can impact private life. Most women in the interviews thought a farm is a great place to raise children. Similarly, 55% of questionnaire respondents either disagree or strongly disagree that having children is an obstacle to owning for them (Figure 7). One woman wrote that living on a farm allows her to *“look after the children at home, even if you also work long hours”*. 22% of non-owners agree or strongly agree that raising children is an obstacle compared to only 8% of owners (Appendix Q). This may be since all owners in our questionnaire have children and already combine farming with family life, while only 39% of non-owners have children (Appendix R).

Almost all women in the interviews see that men should contribute equally to childcare. This is however not the reality. Ingrid wishes she had insisted on equal responsibility for the children but she was stopped by traditional norms: *“It's not really feminine to be a hard person”*. As a result, she did not have the mind space to make investments on her farm. Anders Frederiksen said that one reason why women don't own farms is because the age when people buy farms coincides with when they have kids, implying that women are seen as the main caretakers and therefore are less likely to become farm owners. This ties into the finding that 70% of respondents in the

Figure 7: “It's too difficult to combine with having children”



questionnaire stated that tradition and patriarchy is a reason why few women own farms (Appendix M), for example it is *“traditional that men are farmers and owners and women are assisting wives or employed outside agriculture”*.

Spending enough time with the children when combining children with owning a farm is also important. In fact, Alberte fears ownership would reduce her available time with her future family. The problem is the workload inherent in owning. Charlotte and Kristine mention how delegating responsibility to workers is essential, but a challenge for many. Since ownership comes with a large responsibility and delegation is seen as difficult, this could be a reason for a reduced wish to own a farm for women.

For young women especially, having to dedicate so much time to being a farm owner is a concern since time for private life becomes limited. For many women, the main reason for being employed instead of owning is in fact the need for a healthy work-life-balance.

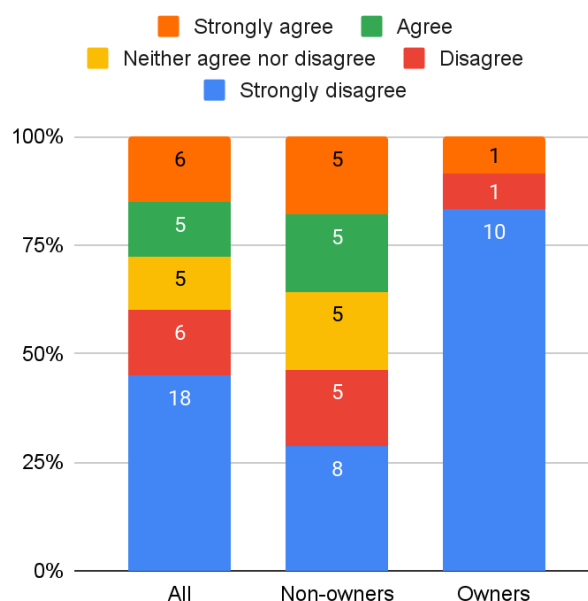
Many of the women, especially non-owners, expressed the need to distance themselves from work in their free time. For owners, it's hard to switch off since there's work everywhere around them. This concern ties in with the time and energy commitment that it takes to be a farm owner. In the questionnaire, 60% of the respondents either disagree or strongly disagree that the large commitment was an obstacle for them (Figure 8). Here we observe a large difference between owners and non-owners: 91% of owners disagree or strongly disagree compared to 47% of non-owners (Appendix S). Our regression analysis shows that the correlation between being an owner and not seeing commitment as an obstacle was indeed statistically significant ($p\text{-value} < 0.1$, $\beta_1 = 0.652$, control: children) (Appendix T). This could mean that non-owners see being a farm owner as too much of a commitment which is why they don't own, while the owners were ready to commit to the farm life.

Regarding partnership, Charlotte and Ingrid mention how important it is for men to have their own thing when the woman is the leader. Ingrid talks about how her partner had issues accepting that he was sometimes perceived as ‘minor’ compared to her due to her status in the associations and community. *“You need a strong man who can handle a strong woman shining”*. In this way the women are aware that performing more masculine, e.g. by owning, might come with a price for their relationships with men.

3.6. Farm succession

Two of the three owners we interviewed took over their parents' farm whereas most owners in the questionnaire bought their farms independently (Appendix U).

Figure 8: “Owning a farm requires more time, energy and commitment than I’m willing to give”



Five out of the seven interviewees said that farm succession is still very gendered, which was confirmed by the KB women and our informants: it's a very strong tradition that sons take over the family farms. Charlotte elaborated that fathers still do not recognise their daughters as potential successors and therefore do not encourage them to farm, whereas the pressure on the sons is higher. Women are thus only likely to take over the family farm if they don't have brothers. Indeed, this was the case for Dorthé and Charlotte, whereas Ingrid's brother took over the family farm and she went to buy hers independently. This is inline with most of the women seeing tradition and patriarchy as the reason why so few women own farms (see section 3.5). However, both Charlotte and Ingrid see it as an advantage that they were not pressured into farming, but could live their youth more freely.

Similarly, the questionnaire respondents were quite divided on whether sons inheriting instead of daughters was an obstacle for them to buy a farm. The owners are especially divided with 25% strongly disagreeing and 25% strongly agreeing (Appendix V & Figure 9). All the owners who strongly agree bought their farms independently, which could indicate that they were affected themselves (Appendix W).

3.7. Respect

Overall, the women interviewed feel respected and accepted within their farming environment. This seems to be important to give them a sense of belonging. This feeling of being respected may explain why 68% of questionnaire respondents disagree or strongly disagree that fear of not being respected as a farm owner was an obstacle for them (Figure 10). Still, 25% of owners and 11% of non-owners agree or strongly agree (Appendix X).

Most of the women mentioned how at the beginning of their farming career, especially women in leadership roles, had to gain the respect of their (co-)workers and the farming community. They felt that this lack of respect was mainly due to their background and potential lack of skills, and in some cases also due to their gender. When Charlotte first took over the farm, she had to

Figure 9: "Sons inherit the farms instead of daughters"

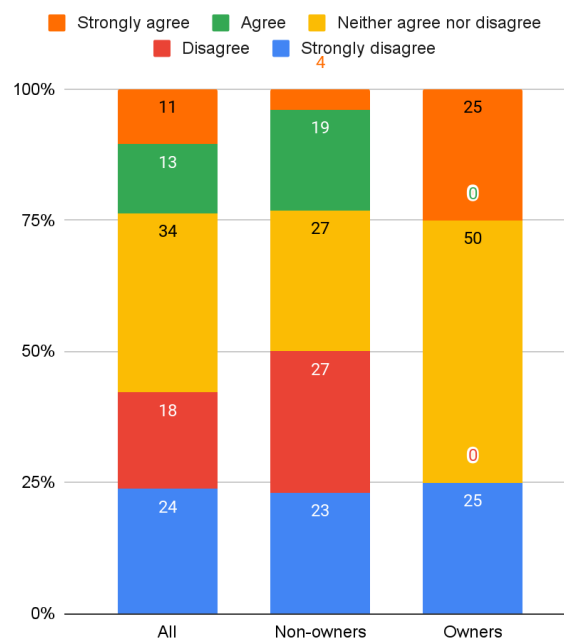
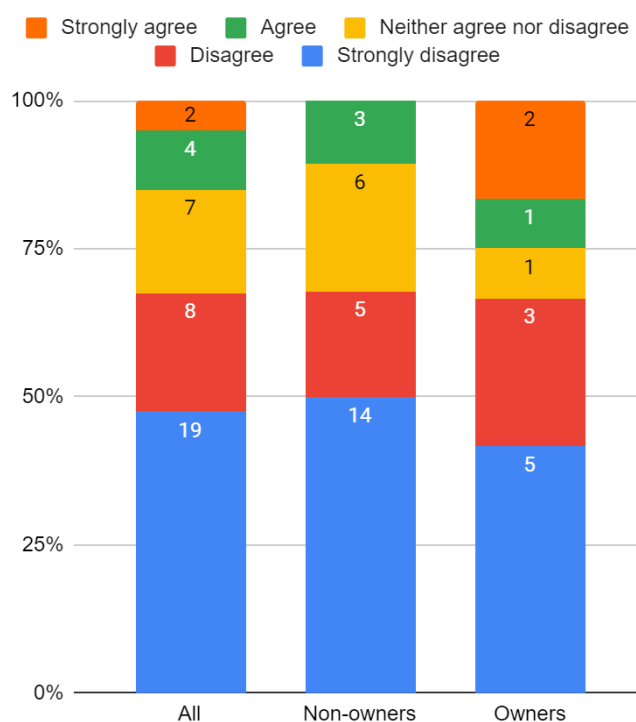


Figure 10: "I don't think I would be respected as a farm owner"



prove herself by showing that she could drive the harvester. On the boards, Lone had to “*play the men’s game*” and not show her feminine side too much. Nevertheless, these women agree that once they could demonstrate having the necessary farming and leadership skills, their background and gender no longer mattered.

Although feeling accepted in general, several women mentioned problems encountered with workers from Eastern Europe who do not recognize their leadership role. Furthermore, the farming business still seems to have a gendered perspective on farm ownership. For example, when Dorte speaks to farming companies or associations on the phone, she is often referred to in plural as if she was running the farm with a husband. Many other interviewees have similar experiences.

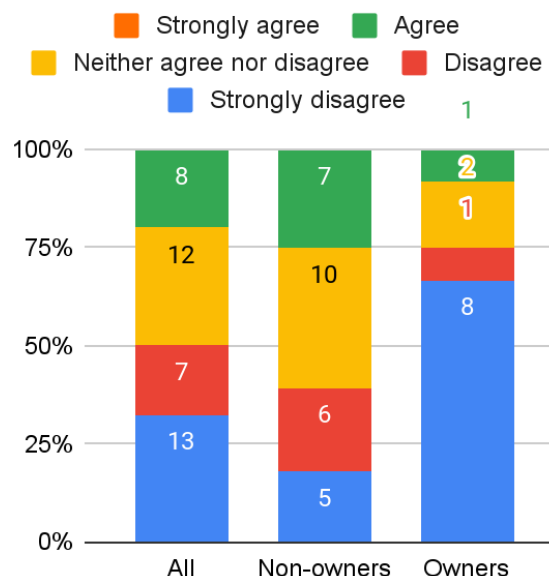
The experience of women being secondary in the farming sector seems to be reinforced by the limited number of women on boards. Ingrid and Berith explained that the few women that are members usually join as farmers’ wives and often do not feel comfortable speaking out. Furthermore, according to Ingrid, integrating women in boards is often merely a matter of image, without genuinely seeking gender equity. Charlotte and Lone think that men don’t strive to include more women because they feel uncomfortable when women show their emotions. To counteract this, they try to be less feminine, which is not always easy. At a board meeting, Charlotte’s voice once cracked because she was getting emotional due to the low prices for piglets: “*I get annoyed when I get this emotional voice.*”

For Alberte and the KB women one of the biggest challenges to women farmers is in fact not being understood by men in their working life, which is why they founded the KB association to create a community for women farmers to share their experiences.

3.8. Structural changes

All our interviews touched upon the increasing specialisation and size of farms in Denmark. This raises a question regarding the future position of women within these structural changes characterising the agricultural sector. Different scenarios have been depicted from the interviews: On the one hand, young women tend to prefer small-scale and diversified farming, which is why a trend towards large-scale and specialised farms might not be appealing to them. As a questionnaire respondent told us: “*Many women, like myself, are more interested in working with land, nature and animals than with industry and efficiency.*” When asked about reasons for the low percentage of women farm ownership in Denmark, 13% of respondents mentioned farm structure (Appendix M). Therefore, there might be a need for more small-scale farms. However, when asked whether there were too little farms to buy, none of our interviewees saw this as an obstacle. In contrast, 25% of non-owners from our questionnaire agree that this is an obstacle for them, while only 8% of owners do (Appendix Y & Figure 11). The correlation between owning and not seeing the availability of farms as an

Figure 11: “There are no farms to buy”



obstacle was statistically significant ($p\text{-value} < 0.1$, $\beta_1 = 0.619$, control: age and children) (Appendix Z). This difference may be due to the reason mentioned in the section 3.3: that owners bought their farms in the past under a different economic landscape when more farms might have been available and cheaper, while non-owners see this as a present obstacle.

On the other hand, the above-mentioned structural changes might represent an opportunity for more women to enter the farming sector in management roles. According to Ingrid, as agribusinesses acquire more farms, more space for leadership roles is opening up for women. Anders Frederiksen even suggested that women may be more attracted to investor-owned farms which require managers. Therefore, women could potentially take important positions within the farming industry and contribute towards its development, especially in the prospect of the green transition. According to Lone, *“women tend to think more about nature and the future for their children”*, and are thus more interested in sustainable agriculture; Anders Frederiksen mentioned that women, especially from the new generation, are *“highly interested in the green change”*, a trend that is reflected in the number of women in organic farming schools (Troelsen, 2013).

3.9. Traditions are changing

Both young and older women think the problem of few women owning farms is not only gendered but also generational. Most of the KB women think that the inequality will even out as more women educate themselves in farming and more of the *“old farts”* die off. Furthermore, most women see that gendered farm succession is slowly changing. This is confirmed by Ellen Andresen, who thinks the patriarchal standards of the old men who only let their sons take over the farm will die out slowly. 13% of questionnaire respondents also mentioned that things are changing, and more and more women are entering the field of agriculture (Appendix M).

3.10. Overall patterns and factors

The main factors we have found to be responsible for the low percentage of women farm ownership in Denmark are presented in Figure 12.

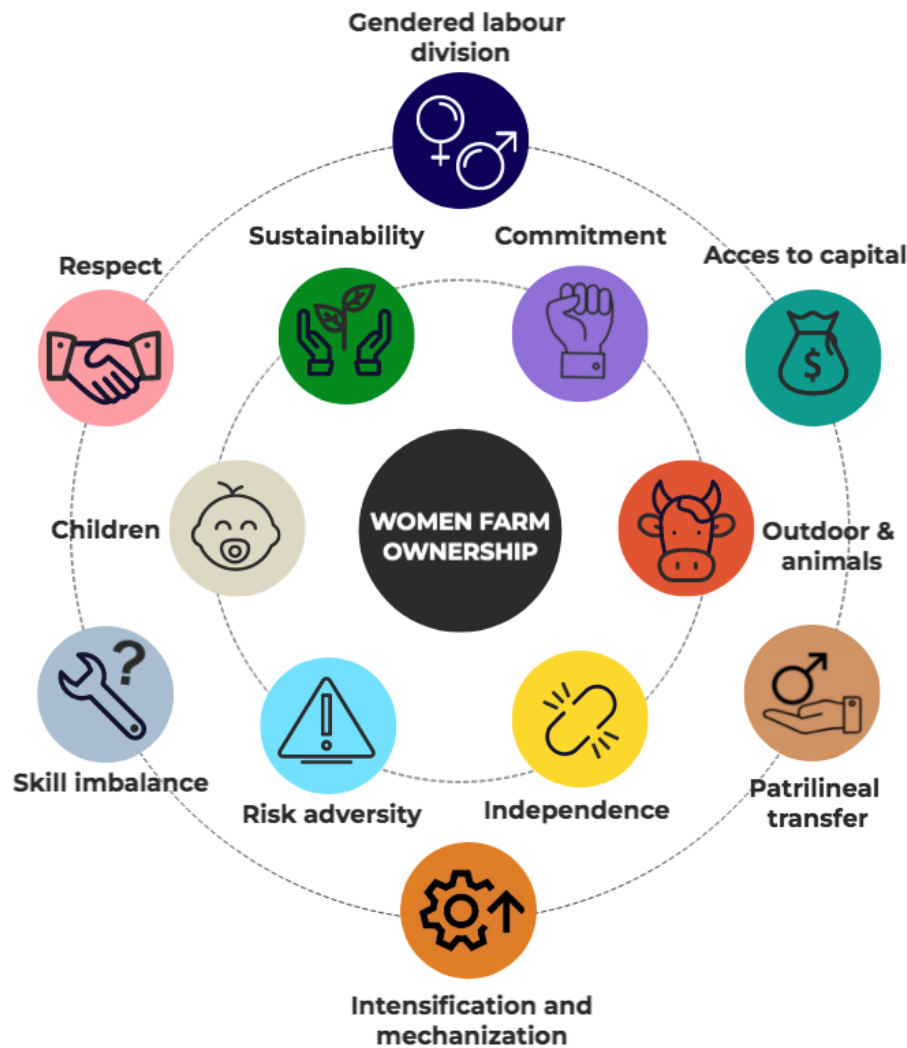


Figure 12: Summary of factors influencing women's perception of farm ownership. The inner circle represents internal factors whereas the outer circle represents external factors (made with template from 'Visme')

3.11. Young perspectives

The two focus group interviews with young boys and girls from Gråsten Landbrugsskole gave us insights into the new generation's perception on women in farming. In many ways, the students mentioned the same things as the women farmers. However, in some aspects there's a clear difference between the two generations, especially in the importance they gave the challenges.

The boys agreed with 4 out of 8 obstacles (banks, partner, risks and children, see Appendix D) Also, they thought that all challenges would have a bigger influence on the girls. The girls however did not identify with facing the challenges and see themselves as the first generation of women to have the same opportunities as men. At the same time, they see themselves as "boy girls" and find it liberating not to do culturally feminine performances such as "girl talk".

In terms of motivation, all participants think that girls prefer to work with animals whereas boys have a love for machinery starting with their first word being 'tractor'.

In accordance with Ellen Andresen who said women are less interested in business, one girl doesn't want to own a farm because she lacks "*the business gene*". Similarly, while farming schools see an increase in female students, the management training remains dominated by boys.

In contrast to the women farmers' experiences, the girls say that nowadays, girls and boys are taught the same skills in their childhood. They also think that patrilineal farm succession is very "*old fashioned*". However, similar to Charlotte and Ingrid, the girls mention that they are relieved of not feeling the same pressure as boys to take over the family farm, which contradicts their feeling of being treated equally.

All students see the financing to buy a farm as a challenge. However, the girls seemed a lot less doubtful than both the boys and the women farmers. For the boys, having a high enough capital to get a loan is the biggest obstacle to farm ownership. When talking about risks, the girls say they don't see any gender differences. However, later on, they state that girls are more hesitant whereas boys "*just do it*". The boys think that, probably because of the risks, girls would prefer not to be sole-owners.

The girls and boys see farm ownership as a big commitment, but not as an obstacle. There is however a difference in how they deal with the commitment: The biggest problem the boys see is that the partner also has to be committed. The girls don't agree with this at all. If a partner is not willing to live the farm life "*he is out*". The girls are more worried about reaching a healthy work-life-balance, which the young non-owner women also mentioned. They say it's hard to take time off, since they worry about the farm: "*Are the calves alive when I get home?*". They see delegation of tasks as a solution, also for raising children. Having children is not per se an issue: "*If you want it, you solve it*". Interestingly, the girls ranked the obstacle of combining farm ownership with children as the least important, whereas the boys imagined this would be the biggest obstacle for girls.

In contrast to the women farmers, a lack of respect isn't seen as an issue. The girls think that this is a problem of the older generation. However, when talking more about this, the girls started telling stories similar to the women farmers: They talked about how they had to prove themselves to their male bosses and other men.

To conclude, the young generation of women farmers state that they don't see many challenges to farm ownership, especially not gender-specific ones, whereas their stories clearly include gender issues. It seems that the girls want to distance themselves from struggling, discriminated women farmers and look into the future with optimism and self-confidence: "*Things are changing*".

4. Broader discussion

According to our findings, the problem of only 5% of the farmland in Denmark being owned by women starts with the ongoing tradition of patrilineal farm succession. Since farm succession comes with financial benefits and financing is a big obstacle to farm ownership, taking over a family farm facilitates the entry into farm ownership. Consistent with the literature on gendered farm succession (Cavicchioli et al., 2018; Lidestav, 2010; Rossier and Wyss, 2008; Silvasti, 2003), our findings show that sons are often the preferred successors, meaning that daughters are excluded from the possibility to take over their parents' farms, which may also explain why women tend to not be interested in owning.

As scholars have found in earlier studies (Rossier and Wyss, 2008; Silvasti, 2003), we find that specific gendered socialisation not only influences women's possibility and willingness to own a farm, but also their skills to do so. The gendered upbringing, perception of farm work and expectations thus have implications all along the way from schooling to getting a bank loan to being a respected woman farm owner. These findings are backed up by Trauger et al. (2008) who argues that the farm educations are very much tailored towards boys and their skill level acquired from an early age.

The skill-imbalance may further explain why some women do not trust in their own skills, feel less respected and show less self-confidence. This lack of confidence could be a reason why women are reluctant to own or to take leadership roles within farmers' associations and boards, as also suggested in the literature (Grace, 1994; Pini, 2002). These internalised obstacles might also be correlated with the tendency of women to be risk averse. This may imply that the less they believe in themselves, the more risk averse and the less likely they are to want to own a farm. Hence women's risk attitude may be an important determinant in their decision to own.

Owning a farm is seen as a large commitment by all women; however, the non-owners women that don't own see this commitment as an obstacle to ownership while owners and the women that wish to own don't see it as a problem for themselves. Similar trends apply for achieving a healthy work-life balance and for combining ownership with family responsibilities.

When asked directly about the obstacles, the women and girls tended to disagree with themselves being affected. However, later on, they told stories about being discriminated against at work, at the bank, in school and in the community. The women owners further perceived themselves as more courageous and more committed to owning compared to 'the other women' who are more risk averse and don't believe in themselves. They seemed to be proud of being less feminine and having taken the risk to own. This is backed up by Pilgeram (2007) who argues that farm women act tough to differentiate themselves from the feminine performance and hence feminine women. Pilgeram (2007) further argues that this renunciation of the feminine performance reinforces the hegemony of the masculine and its connotation to agriculture. On the other hand, from the interviews we found that performing more masculine might sometimes be hard for men to accept. This is backed up by Smyth, Swendener and Kazyak (2018) who argue that women who perform more masculine are met with hostility from some men. In this way women are caught in a complicated situation: They act more masculine to be accepted in a male dominated sphere, but are at the same "punished" for performing less feminine.

The strategies adopted while navigating the male-dominated arena of farming in Denmark differ between owners and non-owners. On the one hand, the owners tend to gain respect from their male-peers by participating in traditional farming organisations and boards. A higher presence of women on boards is advocated by them to reach more gender equality in the sector. However, as the literature also points to

(Shortall, McKee and Sutherland, 2019), since women rarely own farms, their access to and presence within association boards is limited. On the other hand, the non-owners don't strive to become part of these boards, potentially because they don't feel that their voices can be heard. KB is an example of a community based on feminine values, which can be seen as a counter reaction to the masculine performance among women farmers that Pilgeram (2007) describes.

Danish agriculture is undergoing large changes with different implications for women farmers. On the one hand, structural changes will probably influence women's positions in farming and the number of women farm owners. Women might be less interested in farm ownership since the farms are moving away from what they tend to prefer, i.e. smaller farms with closer contact to animals, and require increasing business skills, which especially younger women farmers seem to be less interested in. In contrast, the increase in investor-owned farms might also give way to more women in management roles, therefore increasing the position of women farmers. The green transition happening in agriculture might also lead to more women interested in farm ownership or farming in general, since both in our data and in the literature we found that women tend to be interested in sustainable, environmentally friendly farming (Ball, 2019).

All women in our study seem optimistic and agree that things are changing. Traditions are becoming less prominent, gender inequalities are levelling out and women are increasingly invested in having a say in the farming community. This might point towards a transition not only in farm structure, but also in farming culture in general. This can partly be seen in our findings, since a lot of gendered issues that the women farmers face are not perceived as problematic by the young female generation. Despite this optimistic view on women in farmers, the girls still experience situations that are influenced by gender norms. This however does not imply that things aren't changing. They might just be changing at a lower pace.

5. Discussion of methods and our experiences

Our findings have been influenced by our methods. Therefore, it is important to discuss the strengths and weaknesses of the chosen methods.

Analysis Framework reflection

Continually developing our analytical framework meant that we had meaningful discussions on how to understand the information we were gathering and the framework ended up being very helpful in structuring our analysis. At the same time, the continuing process of developing the framework has been time consuming. Basing the analysis on an existing framework might have been a faster way to analyse our data and could have provided other analytical insights.

Interviews with women farmers

Sampling

The way we selected our interviewees (especially through Facebook) meant that we mainly interviewed women farmers that were already to some degree aware of the issues that women face in farming. This might mean that we have an underrepresentation of women in farming who are less aware of their gender, and that we weren't able to paint the full picture of their experiences and perceptions.

A further limitation is the correlation with age and ownership. We didn't succeed in finding young owners or old non-owners. This has biased our results since age might be a more important factor than ownership.

We ended up not including in-depth semi structured interviews with men but getting their perspectives through a focus group interview. We are aware of the fact that the structure and culture of Danish farming is embedded in heteropatriarchy. Still, our project is not a comparative study. We were interested in women's experiences and perspectives on farming, and how these are influenced by tradition and gender norms, which can be well understood without also interviewing men. The comparativeness lies within the internalised standards imposed by society.

Location

Where the interviews were held was decided by the women farmers. It was important to us that the interviews - if possible - were held in their own environments to make them feel comfortable. Furthermore, by being on their farms or in their homes, we gained more insights into their way of living and farming than we would have otherwise. Our initial idea was to include extensive farm walks to experience what the farms were like and observe what was happening. However, instead of thoroughly concentrating on the farm itself, we were more focused on the interview we had planned. This meant that we did not ask any questions or take notes about what we were seeing on the farms which might have provided us with valuable insights.

Being inside and having coffee with the women created more of a feeling of 'hygge'. There were no interruptions and it was easy for us to record the interview while taking notes. Standing outside the stables enabled the women to be in their normal working environment; however, the interviews got interrupted by things happening on the farm, recordings were sometimes unclear and taking notes while standing caused some difficulties.

The two video call interviews were a lot shorter but therefore also more concise as the in-person interviews. It did allow the interviewees to be in their home environment, but we felt that talking to a computer led to more distanced conversations and we missed out on a lot of additional information.

If we repeated this study, we would ensure to have the same procedure for all interviewees, i.e. both see their homes and their farms. Further, we would include extensive farm walks and take notes on what happens around the farms and in the women's homes.

Interviewers

Throughout the fieldwork we interviewed our respondents in different group formations. In general we tried to be a maximum of three people per interview. Being more interviewers at once caused the main interviewer to be hesitant to take the lead. This meant that we sometimes didn't take the interview in the desired direction. On the other hand, being more people enabled more brain power at once and therefore more nuanced questions. We also found that observing the others interviewing was very informative and a great way to reflect on our interview styles.

Two of our group members spoke Danish which was extremely advantageous to contact people and to set up meetings; they unfortunately had an extra workload due to this. But many interviewees agreed to speak in English, meaning that everyone could understand and later transcribe the interviews. Having at least one Danish speaker present per interview allowed the respondents to fall back to Danish whenever they struggled to find words in English.

Interview guides

We used interview guides to make sure we got the answers to the questions we wanted to ask. We did however not follow the exact order of the conversations but rather let the conversation flow more freely.

We experienced troubles asking sensitive questions since we did not want to offend or upset the women in any way. We felt torn between letting the women decide about what to talk about and making them feel heard, and making sure we could ask our questions, even if they deviated from the conversation flow.

List of obstacles

Since the list of obstacles was developed after the first two interviews, we did not get the answers for each of the obstacles from the first two interviewees. We could however analyse their answer to nearly all of the obstacles. Nevertheless, this means that some questions differentiated between the interviews.

Furthermore, the list did not cover all potential obstacles but only the ones that we found were the most relevant. This choice is based on the two women and our preliminary understanding of women farm ownership. Therefore, showing the list to our interviewees could have influenced their opinions. However, we did try to get their own thoughts first and presented them the list at a later point. Also, a lot of what they said spontaneously was related to the obstacles on our list.

Dissonance between statements and reality

As discussed in our analysis, the experiences the women told us were not always in concordance with how they saw themselves as women farmers, especially related to potentially being affected by gender discrimination. To explore this further, it would be valuable to follow the women for a longer period of time and learn about their daily life. We would thereby thoroughly analyse how they express themselves, what impression they want to give from themselves and how we as external viewers experience them. This extensive collection of data through conversations and observations would allow us to be able not only to analyse their *gender* discourse, as in what they talk about in relation to gender, but also their *gendered*

discourse, meaning discourses where the gender aspect is not verbalised but still have an impact (Pedersen and Kjærgård, 2004).

KB Assembly: Observation and informal group interview

The observation of the assembly was not exactly relevant for our project. Nevertheless, an advantage of attending is that we got familiar with the women and expressed enthusiasm about their work. The following informal interview thus might have been positively affected by their impression of us. On the other hand, there is also a risk that they just told us what they thought we wanted to hear to please us. The women in KB are already very aware of the gender issues in farming, and therefore choosing them as ‘neutral’ participants in our study might be a shortcoming. The dynamic of a group interview in which all are from the same segment might also distort the individual answers, since it’s not always easy to oppose the popular opinion.

Focus groups

Although at first our focus group interviews were structured, we saw how gradually letting the conversation as well as the structure flow made them more comfortable to speak up, and also led to interesting interactions.

The students seemed to hold preconceived ideas about either our study or our personal opinions/values, since they seemed cautious of what to tell us. Because of this, there may have been a social desirability bias, meaning that they might have softened their answers to some of our questions according to what they thought we might judge them on.

We chose not to include the focus groups in the main analysis since, as students, they have not yet experienced or faced some of the obstacles we have identified. Therefore, combining them with more experienced women farmers might have biased our analysis. Furthermore, since our focus groups had male students, it would not make sense to compare them with the women farmers we interviewed and surveyed due to the purpose and scope of our study. However, the perspectives of the students were valuable to get a sense of what the future generations think of ownership, gender differences and overall future changes in agriculture in Denmark.

Informant interviews

The informants were able to provide us insights into how farm acquisition works from a financial and juridical perspective and allowed us to triangulate the answers received from the women farmers.

The informants were not experts on women farmers specifically, since they counsel all farmers in general of which the majority are men. For this reason, they seemed a bit biased in their answers. It was hard to ask them indirectly whether they, their colleagues or the banks were discriminatory against women due to social desirability bias, and discrimination in this context may also be implicit. Due to this, we were not able to confirm nor fully deny whether banks discriminate based on gender.

Although the informants explained well how the system of ownership works, talking with researchers working on this topic would have provided better guidance into how gender norms should be explored in the context of farming and ownership.

Questionnaire

The two main challenges with our questionnaire data was the low number of respondents, and the possible unrepresentativeness of our sample compared to the population, due to the high degree of self-sampling in the Facebook groups (Thomsen, 2012).

This means that we cannot automatically generalise the results from the questionnaire to all women farmers in Denmark. The number of respondents also means we had such a low number of owners and co-owners that we had to merge them to be able to do meaningful quantitative analyses. Because of this, we cannot see if there are any differences between the two groups that could influence our statistical analysis.

Even after merging owners and co-owners, we still had a low number for the owners which may have affected the statistical tests we have run, and an explanation as to why only few had statistically significant results, despite the visually different distributions of answers between the groups.

Before distributing the questionnaire we forgot to include a question on where the respondents live, which would have made it possible for us to look at whether our sample was geographically representative. We also didn't include the option of answering 'don't know' in the barriers questions; this is especially problematic for non-owners that may not have encountered or reflected on the obstacles beforehand, so they may have chosen the middle-option instead, hereby inflating this option. The respondents did however have the option of not answering which a few of them used.

By using both a questionnaire and interviews we were able to add more nuance to women's perception of the different obstacles. For some themes, the interview data was backed up by the questionnaire data, for others we found contradictions. These contradictions can stem from the fact that nuances are easily lost in one-way questionnaire communication. We also had a hard time giving the questionnaire the same weight as the interview data, since being present with the farmers gave a much stronger impression than looking at graphs. We think that truly answering our research question requires physical presence and connecting with the respondents, for which a questionnaire is not a suitable approach. However, the questionnaire did allow us to reach out to more and different women during the time span of our field work in Tønder.

Potential biases

Finally, we have to recognize our potential bias. We are five young women studying in Copenhagen, who started this project with assumptions regarding why only 5% of the farmland is owned by women. We are aware of the fact that our own identities, personal experiences, values and beliefs may influence the collection and interpretation of data. We tried to reduce the interviewer bias and limit the presence of leading questions by phrasing the questions carefully. However, especially in the in-depth semi-structured interviews it was difficult to not reveal our own opinions or to not problematise the low number of women farmland owners. We also often asked directly if there were gendered issues in farming. Although the information elicited from these questions were valuable, they would have been more significant if brought up spontaneously from the interviewees. However, we tried to minimise our bias in the interpretation of data by developing a process of group reflection on and discussion of the interviews. Furthermore, we support the results of our study with direct quotes, both from the interviews and the questionnaire.

Our experiences with the project group work

Getting to try out different methods gave us some invaluable experiences that will benefit us for future research. It also provided us insights into how research problems are approached and gave us a better understanding of advantages and shortfalls of certain methods as well as of the wide array of ways that collection or analysis of data can be biased.

Our group process was overall smooth sailing, as everyone's opinion was valued and heard. When a disagreement would arise, we all tried to understand the different points of views, and attempted to reach compromises as long as all parties were satisfied with the outcome. In the field, we each got to try to lead an interview. For the first few interviews, the preparation as well as the start of interviews were a bit messy as we did not really know in what ways we should prepare for the interview beforehand. This was resolved when we got used to conducting interviews.

The variety in our backgrounds did not cause any problems; on the contrary. We utilised the background and prior knowledge of everyone throughout data collection, data analysis and report writing. Due to time constraints, we did not always have time to share our expert knowledge, so we relied on the fact that each of us was good at what we did when dividing the tasks.

6. Conclusion

Our study shows that, within the male-dominated Danish agriculture system, a multitude of internal and external factors influence women farmers' perceptions and experiences of obstacles to farm ownership, shaping their ability and will to own. When asked directly, most women in our study did not think the obstacles affected them majorly. To them, ownership can be attained with determination, depending on your risk attitude and your will to commit, no matter your gender. And yet, we have identified indirect or direct links of how gender norms and expectations interact with other factors to create different outcomes in women's ownership.

The most prevalent factor we found is tradition. Traditional patrilineal farm succession and gendered upbringing affect the women's skills, wish and opportunity to own. Perceived or real skill-imbalances might contribute to unequal education, limited access to loans and a lack of respect. Additionally, the tendency to risk adversity and lack of self-confidence and other factors, such as having time for private life and family duties and the wish for independence also influence the decision and ability to own or not. For the women actually owning, navigating the male-dominated sector requires them distancing themselves from these insecurities and perform more masculine.

Although our methods were suitable to grasp the context and intricacies of our topic, bigger samples for our methods would have provided us with a better understanding of our population of interest, allowing us to draw more concrete conclusions. Nevertheless, our findings can serve as a starting point for future investigation of what exactly women's ownership of farms means to women and the sector in general. This is especially relevant as lack of ownership or will to own may influence the women's role and presence in the farming community.

Perspectives on and access to ownership may also evolve in the future as the agricultural sector is currently undergoing structural changes with different possible outcomes for women farmers' role in the sector and their will to own. Although tradition and gender norms still persist, women from our study feel a gradual change in the sector. However, we cannot conclude in what direction the situation will evolve. Future research should investigate the relevance of owning for women in the context of Danish agriculture's ongoing changes, as ownership might not be the only pathway that can potentially contribute to women's role in the sector.

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Appendix

Appendix A: Overview of applied methods

| Method | Respondents | Number of participants |
|------------------------------------|--|------------------------|
| In-depth semi-structured interview | Women farmers | 7 |
| Group observation | Women farmers from KB General Assembly | 9 |
| Informal group interview | Women farmers from KB General Assembly | 5 |
| Focus group | Female students | 7 |
| | Male students | 5 |
| Questionnaire | Women farmers | 40 |
| Informant interviews | Financial Advisor LandboSyd | 1 |
| | Juridical Advisor LandboSyd | 1 |

Appendix B: Semi-structured interview guide for owner/co-owner

Farm life

Who lives on the farm?
How long have you been living here?
What type of farm is it?
What is your relationship to the farm? (Owner/manager?)
How long have you been farming?

Motivation

What motivated you to choose farming as your career?
Have you always wanted to be a farmer?
Why did you choose to specialise in (crops, dairy etc...)?

Skills

How did you acquire your farming skills?
Did you grow up gaining farming skills?
Do you think men acquire their farming skills from other sources?

Access to farm ownership

How did you acquire a farm? (Inherited, partner, bought)
Did you have to move to acquire the farm? If so, how was this for you?
Before you owned a farm, what did you experience as challenges to become a farm owner?

If bought from family relations ("inherited"):

What were the reasons for you taking over the farm?
How was the process for you taking over the farm?
Did any of your siblings also want to take over the farm?
Was it always clear for you that you wanted to take over the farm?
Did you feel like it was harder for you to acquire the farm as a woman?

If co-owning w. partner / other person:

Did you want to own a farm just as much as your partner?
Would you have bought the farm without your partner?

If bought independently:

Did you always know that you wanted to buy a farm?
How was the process of buying the farm?
How was the economy in acquiring a farm?
Did you feel like you were evaluated for credit differently because you're a woman?

Labour division (farm and household)

Is there a division of labour on your farm, what does that look like? Who does which tasks?
Is your work equally important to the farm operation?

Risks

Do you think there are risks connected to buying a farm (which)?
Did these risks worry you?

Support

How did your family/friends react to you buying a farm?
Did your family / partner / friends / community support you?
Did you have a role model/mentor when buying the farm?

Questions if living/working with a man

What did your partner think of you becoming a farm owner? (skip if answered above)
Did your partner also want to become a farm owner?

Questions if not living with partner

Did you at any point feel like you needed a partner to buy the farm?
Do you think that men see it as a problem that you own a farm by yourself?

Dream farm

Is the farm you own your dream type of farm?
Was it easy to find the farm you wanted?
Do you in general think that women dream of other farm types than men?

Community

Do you feel accepted in the farming community?
Can you tell me about a time when you became aware that you were a woman in a field with a lot of men?
Do you feel like your gender affects how the other in the community sees you?

Gender

Do you think your life would look differently if you were a man?

Women only own 5% of farmland.

Why do you think that is?

- Is it because women don't wish to own (and why so?)
- Is it because it is harder to become an owner as a woman (and why so?)

What do you think could or should be done to reduce the challenges for women to become farm owners?

(Present and discuss list of potential obstacles to farm ownership when it fits in the interview)

Appendix C: Semi-structured interview guide for non-owners/managers

Farm life

Who works on the farm?
How long have you been working here?
What type of farm is it?
What is your relationship to the farm? (Owner/manager)
How long have you been farming?

Motivation

What motivated you to choose farming as your career?
Have you always wanted to be a farmer?
Why did you choose to specialise in (crops, dairy etc...)?

Skills

How did you acquire your farming skills?
Did you grow up gaining farming skills?
Do you think men acquire their farming skills from other sources?

Access to farm ownership

Do you wish to own a farm?

If wish to own: Have you tried to get access to farmland?

If yes → What happened? What did you experience as challenges for you to become a farm owner?

If not → What are the reasons why you have not tried yet to become a farm owner?

If no wish to own: What are the reasons that make you not want to become a farm owner?

What are the challenges for people to get access to a farm?
Do you think that there are challenges that are particular to women in trying to become farm owners?

Risks

Do you think there are risks connected to buying a farm (which)?
Do these risks worry you/stop you from buying a farm?

Support

How do you think your family/partner/friends/community would react to you buying a farm?
- Will they support you?
Do you have a role model/mentor among farm owners?
What do you see as benefits in not owning your own farm?
Disadvantages?

If in a relationship

What do you think your partner would think of you becoming a farm owner?

Does your partner also want to become a farm owner?

→ **If yes**, do you imagine that you will co-own?

Do you think there would be a division of labour on your farm, what would that look like? Who does which tasks? (elaborate on farm work, family work and finances).

Is your work equally important to the farm operation?

→ **If no**, what are the barriers that you see in owning a farm by yourself?

What would the role of your partner be on the farm?

Do you think it might be a problem for your relationship?

Questions if not in a relationship

Do you feel like you would need a partner to buy the farm?
Do you think that men would see it as a problem if you owned a farm by yourself?

Community

Do you feel accepted in the farming community?
Can you tell me about a time when you became aware that you were a woman in a field with a lot of men?
Do you feel like your gender affects how the other in the community sees you?

Gender

Do you think your life would look differently if you were a man?

Women only own 5% of farmland. Why do you think that is?
-Is it because women don't wish to own (and why so?)
-Is it because it is harder to become an owner as a woman (and why so?)

What do you think could or should be done to reduce the challenges for women to become farm owners?

(Present and discuss list of potential obstacles to farm ownership when it fits in the interview)

Appendix D: List of eight obstacles

The following 8 phrases with potential obstacles were used in three ways:

- in the questionnaire in form of 8 questions where the respondents had to state whether they agree or disagree (scale 1-5) with the statements
- in the interviews in form of a list where the interviewees could comment on the 8 different statements
- in the focus groups where both focus groups had to rank the obstacles presented according to their relevance / importance

Bankerne vil ikke låne mig penge
(the banks won't lend me money)

Der er ingen gårde at købe
(there are no farms to buy)

Der er mange risici forbundet med at eje
(there's too much risk involved with buying a farm)

Sønner overtager gårde i stedet for døtre
(sons inherit the farm instead of daughters)

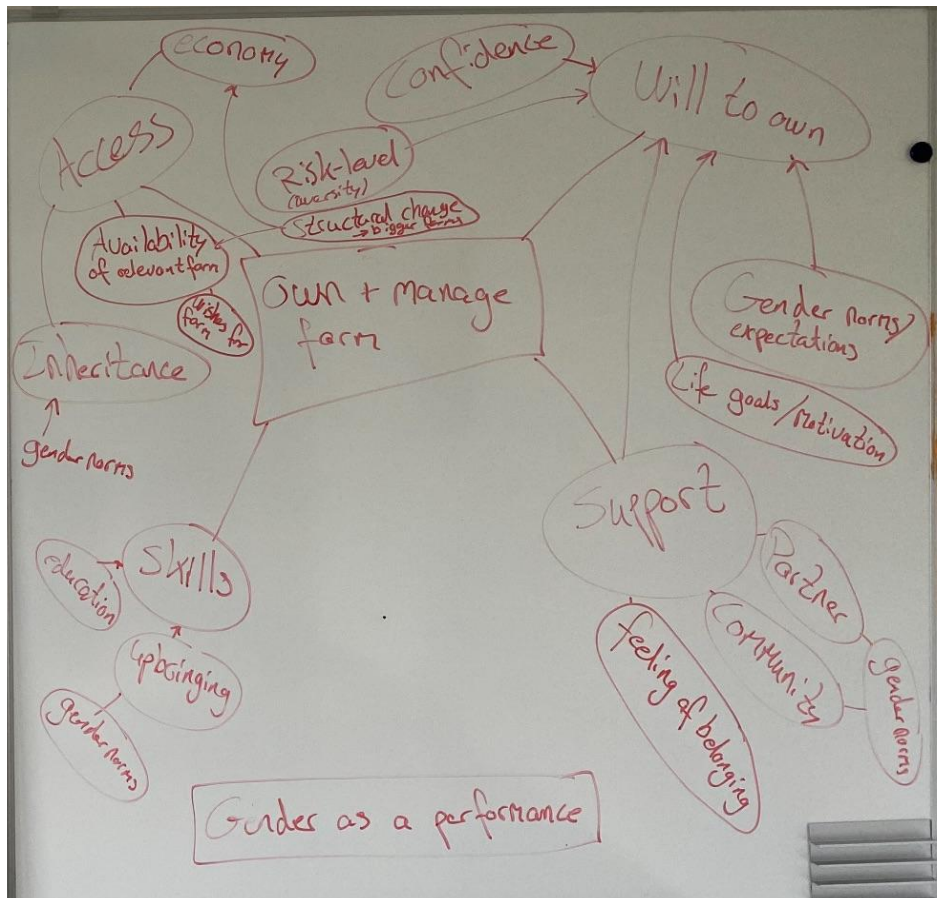
Det er svært at forene med at få børn
(it's too difficult to combine with having children)

Min partner vil ikke synes, det er en god idé
(my partner/family doesn't like the idea)

Jeg tror ikke, jeg ville blive respekteret som landbrugsejer
(I don't think I would be respected as a farm owner)

At købe en gård kræver mere tid, energi og forpligtelse, end jeg er villig til at give
(Owning a farm requires more time, energy and commitment than I'm willing to give)

Appendix E: Mind Map of factors



Appendix F: Explanation of the themes of the analysis framework

| <i>Theme</i> | <i>explanation</i> |
|--|--|
| Motivations | What motivates women to go into farming? What motivates women to become farm owners? |
| Skills | What skills do women acquire throughout their life, through upbringing up to when they start working? What type of education do they tend to go to? How do their skills and education help or constrain them in acquiring a farm? |
| Finances | How do women gain access to capital (i.e., bank loans)? What are the financial risks to consider when buying a farm? Are the risks the same for all women? |
| Risks | What are the different risks that come with being a farm owner, and are they real or perceived, or both? Are women deterred from owning due to the risks? Are women risk averse? |
| Private life | Does being a farm owner take up a lot of time and energy? How do women balance private life and running their farm? How compatible is family life with farm life? Does having children and taking care of them impact women's willingness to own? Do gendered divisions of labour persist? |
| Farm succession | How prevalent is the tradition of patrilineal farm succession? Are daughters encouraged to take over family farms? |
| Respect | Do women farmers feel respected by others in the farming community? Are women in leadership roles respected by their workers or their peers? How does the perception or actual level of respect play a part in will to own? |
| Structural Changes | How are current and future structural changes within the Danish agricultural sector affecting women's role in the sector? How is that impacting the relevance, whether perceived or real, of farm ownership for women? |
| Gender Norms | Are traditional gender norms still prevalent, and if so, how are they impacting women's will own or access to farms? Are gender norms internalised by women and/or others? |
| Women's willingness and capability to own | Do all women wish to own? If not, what makes some women wish to own, and do the obstacles influence the willingness to own? |

Appendix G: Questionnaire

The questionnaire was distributed in the following facebook groups: 1) Landbrugs Gruppen, 2) Landbrugsgruppe, 3) Landbrugsgruppen, 4) De kvindelige landmænd and 5) Regenerativt småskalalandbrug DK.

Questionnaire

Welcome! We are a group of students from Københavns Universitet working on a research project in farming for a university course. We would like to investigate the different barriers for women to owning and managing farmland in Denmark. This is why we would like to reach out to you women farmers and would greatly value your participation in our study. The survey will take you about XX minutes to complete.

This survey is voluntary, anonymous and can be stopped at any point in time. By answering the survey you consent to have your answers used in our study.

You can reply in the language that fits you the best. All questions will be in both Danish and English.

Consent:

I have read and understood the study information, and voluntarily participate in the survey.

- Yes
- No (→ Questionnaire ends)

I. Demographic questions:

Q1.1: What is your age?

- (number) years

Q1.2: What gender do you identify with?

- Female
- Male (→ Questionnaire ends)
- Other

Q1.3: What is the highest education level you have attained?

- Ground school
- Vocational school (farming school included)
- Gymnasium
- University (Bachelor or Master)
- Other: Please specify: _____

Q1.4: Do you have children?

- Yes
- No

II. Relation to farming

Q1.6: What is your background in farming?

- I grew up on a farm
- I became involved in farming later in life
- I became involved in farming because of my partner
- Other: Please specify: _____

Q1.7: How long have you been working in farming?

- 0-4 years
- 5-9 years
- 10-20 years
- +20 years

Q1.8: What motivated your choice to become a farmer?

Answer: _____

Q1.5: What is your relationship to farming now?

- I work on a farm and live on that farm
- I work on a farm but do not live on that farm
- I do not work on a farm but live on a farm (→ Questionnaire ends)
- I study farming (→III. Not owner)
- Other: Please specify: _____

III. Working on the farm

Q3.1 How would you describe yourself:

- I am a full time farmer and I do not have another job
- I am a full time farmer and I have a supplementary job(s)
- I am a part-time farmer and do not have another job
- I am a part-time farmer and I have another job(s)
- Farming is a hobby for me
- Other: Please specify: _____

Q2.3: What is the size of the farm you work on (cultivated area)?

- (size in ha)

Q2.6: What type of farming production is performed on the farm?

- Conventional agriculture
- Organic agriculture
- Other: Please specify: _____

Q2.4: What is the main production of the farm?

- Crops
- Livestock
- Vegetables and/or fruits
- Other: Please specify: _____

Q2.5: If you have animals (livestock), which and how many?

Please write how many animals you have on the farm and which type. For example: 100 dairy cows, 100 laying hens

- _____

Q2.2: Who is the main decision-maker/manager of the farm?

- Me
- I co-manage the farm with someone
- My partner
- My boss
- Other: Please specify: _____

Q2.7: Are you the owner of the farmland?

- No (→IV. Not owner)
- Yes, I own the land by myself (→V. Owner)
- Yes, I own the land together with my partner/others (→VI. Co-ownership)

IV. Not owner

Q4.1: Do you wish to own your own farmland?

- Yes
- No

Q4.2: 8 questions on barriers

What do you experience as challenges for you to become a farm owner?

Please state how much you agree with the following statements.

(Strongly disagree, disagree, neither agree nor disagree, agree, strongly agree)

- Bankerne vil ikke låne mig penge (the banks won't lend me money)
- Der er ingen gårde at købe (there are no farms to buy)
- Der er for mange risici forbundet med at eje (there's too much risk involved with buying a farm)
- Sønner overtager gårde i stedet for døtre (sons inherit the farm instead of daughters)
- Det er svært at forene med at få børn (it's too difficult to combine with having children)
- Min partner/familie synes ikke det er en god idé (my partner/family doesn't like the idea)
- Jeg tror ikke, jeg ville blive respekteret som landbrugsejer (I don't think I would be respected as a farm owner)
- At købe en gård kræver mere tid, energi og forpligtelse, end jeg er villig til at give (Owning a farm requires more time, energy and commitment than i'm willing to give)

(→ go to VII. Women farmers in Denmark)

V. Owner (by themselves)

Q5.1: How did you acquire the farm?

- I took over the farm of my family
- I took over the farm of my deceased partner
- I bought it independently from family relations
- Other: Please specify: _____

Q5.2: Why did you want to become a farm owner?

Q5.3: How was it for you to become a farm owner?

- Very easy
- Relatively easy
- Neither easy nor hard
- A bit hard
- Very hard

Q5.4: 8 Questions on barriers:

(see 4.2)

VI. Co-ownership

Q6.1 Who do you co-own the farm with?

- My partner
- A family member from my parents' generation (uncle/aunt etc.)
- A family member from my own generation (brother/sister/cousin etc.)
- A family member from my children's generation (son/daughter/etc.)
- Non-family members

Q5.1: How did you acquire the farm?

- I took over the farm of my family
- I took over the farm of my partner's/co-owner's family
- We bought it independently (no family relations)
- Other: Please specify: _____

Q5.2: Did you **both want to acquire the farm?**

- Yes
- No, it was my wish
- No, it was my partner's /co-owner's wish (→Q5.4)

Q5.3: Why did you want to become or agree to become a farm owner?

Q5.4: How was it for you to become a farm owner?

- Very easy
- Relatively easy
- Neither easy nor hard
- A bit hard
- Very hard

Q5.7: 8 Questions on barriers

Q5.8 Do you think co-owning has helped you overcome these barriers?

- Yes (→Q5.8.1)
- No

Q5.8.1 How do you think co-owning has helped you overcome those barriers?

VII. Women farmers in Denmark

Q7.1: In Denmark, 81% of farmland is owned by men and 5% is owned by women.

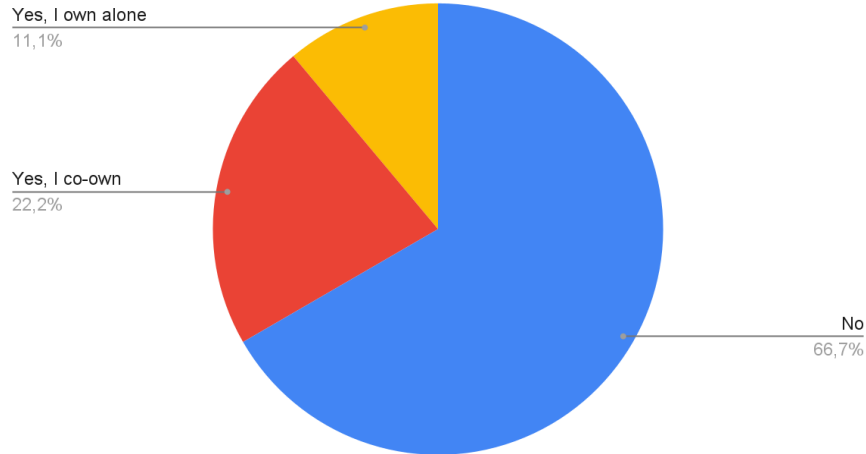
Why do you think women only own 5% of the land?

Thank you for participating in our survey – your answers are very valuable to us. If you're willing, please share this survey with other women farmers. The link to share is: [redacted]

If you have any questions regarding the survey or our study, please don't hesitate to contact us: rvn221@alumni.ku.dk
Thank you very much!

Appendix H: distribution of owners

Do you own the farm?



Appendix I: Explanation of variables in questionnaire

| <i>Category</i> | <i>Questionnaire sample</i> |
|-----------------------------------|--|
| Role | Whether respondent own, co-own or don't own |
| Occupation | Whether they work full time, part time and/or if they have additional jobs |
| Age | Age of respondents |
| Farm type | What is the main production of the farm they own or work at |
| Farm practise | If the farm they work at or own is organic, conventional or both |
| Farm size average | Size of the farm they own of work on in ha |
| Grew up on farm | Upbringing: whether they grew up on a farm or got interested in farming later in life or through their partner |
| Farm owners entry method | How they acquired their farm |
| Highest achieved education | Highest level of education they have received a diploma for |

Appendix J: Regression analysis equations

Regression Analysis

$$Y_i = \beta_0 + \beta_1 X_i + control_i + \varepsilon$$

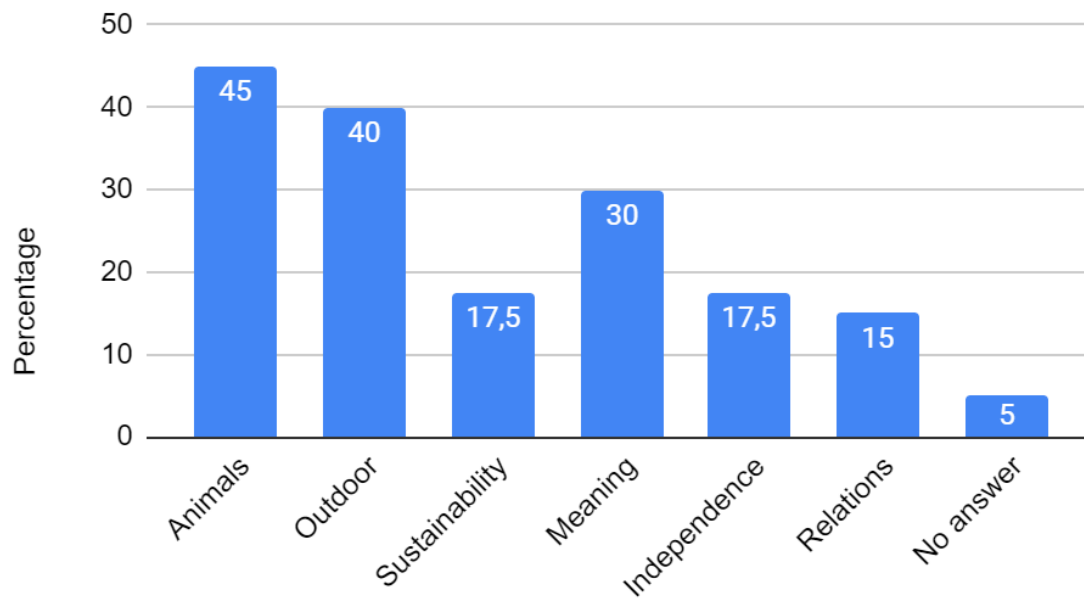
- Y_i : dependent variable → obstacle variable (refer to list of eight obstacles)
- X_i = Ownership
- β_0 = intercept
- $control_i$ = Age and/or Children
- ε = error

$$Y_i = \beta_0 + \beta_1 X_i + \varepsilon$$

- Y_i : dependent variable → Ownership
- X_i = independent variable → motivations variable (sustainability, animals, independence, outdoors, meaning, family relations)
- β_0 = intercept
- ε = error

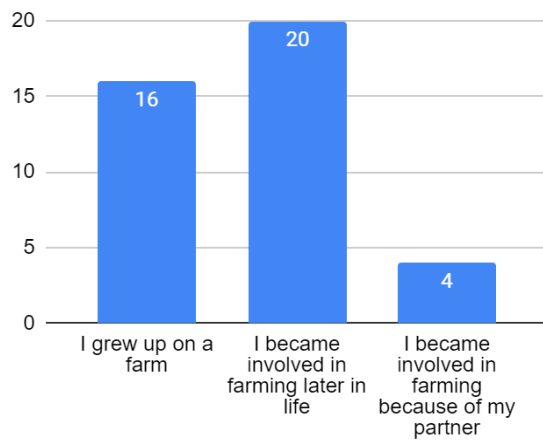
Appendix K: Motivations of being a farmer in questionnaire

Motivation - All

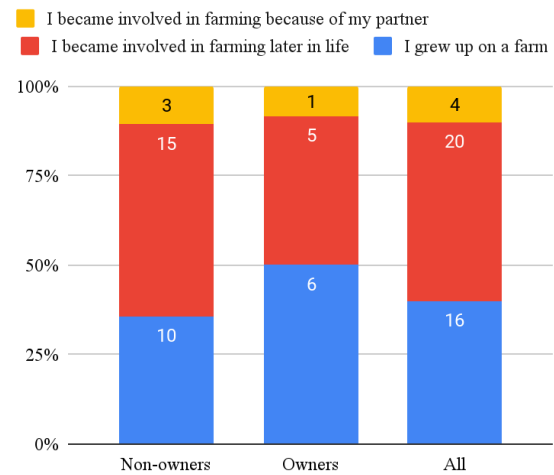


Appendix L: Table of variable background from questionnaire

Background

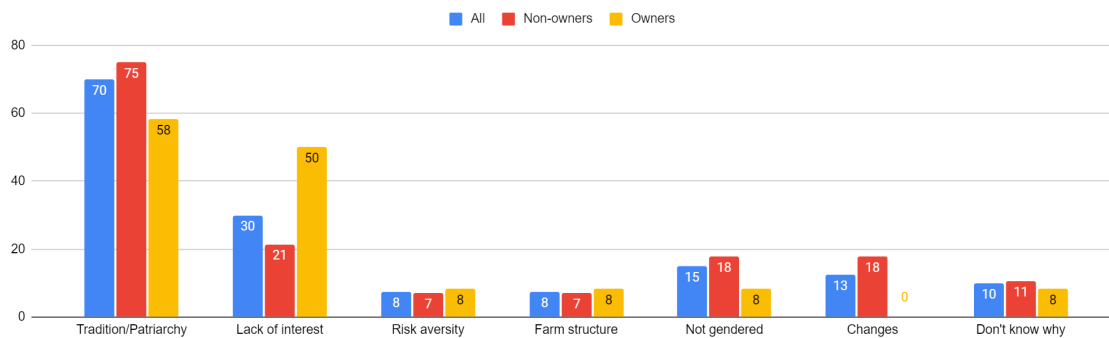


How the women became involved in farming



Appendix M: Why do women own only 5% of farmland responses questionnaire

Why 5% - Percentage of women mentioning factors



Appendix N: Bank loans obstacle from questionnaire

%:

| Banks Percent | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|---------------|-------------------|----------|----------------------------|-------|----------------|
| All | 18 | 15 | 28 | 23 | 18 |
| Not owning | 7 | 18 | 32 | 29 | 14 |
| Owning | 42 | 8 | 17 | 8 | 25 |

Appendix O: Cross tabulation of owners acquiring the farm and banks obstacle rate from questionnaire

| How did owners acquire the farm | Average score for “Banks won’t lent me money” |
|---------------------------------|---|
| Independent | 3,1 |
| Through relations | 4 |

Appendix P: Risk obstacle from questionnaire

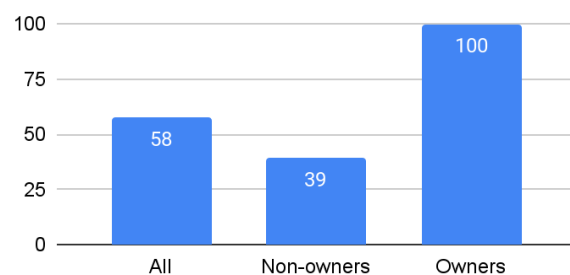
| Risk Percent | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|--------------|-------------------|----------|----------------------------|-------|----------------|
| All | 5 | 23 | 18 | 33 | 23 |
| Not owning | 0 | 28 | 17 | 24 | 31 |
| Owning | 17 | 17 | 17 | 50 | 0 |

Appendix Q: Children obstacle from questionnaire

| Children Percent | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|------------------|-------------------|----------|----------------------------|-------|----------------|
| All | 35 | 20 | 28 | 13 | 5 |
| Not owning | 25 | 25 | 29 | 18 | 4 |
| Owning | 58 | 8 | 25 | 0 | 8 |

Appendix R: Percentage that had children from questionnaire

Percentage that has kids



Appendix S: Commitment obstacle from questionnaire

| Commitment | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|-------------------|--------------------------|-----------------|-----------------------------------|--------------|-----------------------|
| Percent | | | | | |
| All | 45 | 15 | 13 | 13 | 15 |
| Not owning | 29 | 18 | 18 | 18 | 18 |
| Owning | 83 | 8 | 0 | 0 | 8 |

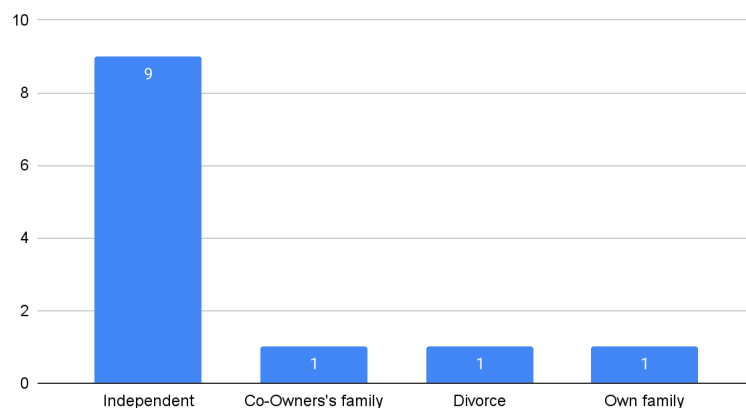
Appendix T: OLS Regression Table between ownership dummy variable and commitment obstacle

Regression Table: Ownership and Commitment Obstacle

| Dependent variable: | | | |
|-----------------------------------|----------------------|----------------------|---------------------|
| | Commitment_all | | |
| | (1) | (2) | (3) |
| Owning_dummy | 0.726** (0.287) | 0.527 (0.351) | 0.652* (0.352) |
| Age | | 0.013 (0.013) | |
| Children | | | 0.123 (0.326) |
| Constant | 2.107*** (0.157) | 1.698*** (0.445) | 2.059*** (0.204) |
| Observations | 40 | 40 | 40 |
| R2 | 0.144 | 0.166 | 0.147 |
| Adjusted R2 | 0.121 | 0.121 | 0.101 |
| Residual Std. Error | 0.833 (df = 38) | 0.833 (df = 37) | 0.842 (df = 37) |
| F Statistic | 6.389** (df = 1; 38) | 3.675** (df = 2; 37) | 3.194* (df = 2; 37) |
| Note: *p<0.1; **p<0.05; ***p<0.01 | | | |

Appendix U: Background data on owners acquiring farms

How did the owners acquire their farm?



Appendix V: Sons inherit obstacle questionnaire

| Inheritance Percent | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|----------------------------|-------------------|----------|----------------------------|-------|----------------|
| All | 24 | 18 | 34 | 13 | 11 |
| Non-owners | 23 | 27 | 27 | 19 | 4 |
| Owners | 25 | 0 | 50 | 0 | 25 |

Appendix W: cross table inheritance obstacle with how owners acquired farm questionnaire

| Inheritance and how the owners acquired | How the owners acquired |
|--|------------------------------------|
| Strongly agree | 3 Independent |
| Neither | 4 Independent, 2 through relations |
| Strongly disagree | 2 Independent, 1 through relations |

Appendix X: Respect obstacle questionnaire

| Respect Percent | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|------------------------|-------------------|----------|----------------------------|-------|----------------|
| All | 48 | 20 | 18 | 10 | 5 |
| Not owning | 50 | 18 | 21 | 11 | 0 |
| Owning | 42 | 25 | 8 | 8 | 17 |

Appendix Y: No farms to buy obstacle questionnaire

| No farms Percent | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|-------------------------|-------------------|----------|----------------------------|-------|----------------|
| All | 33 | 18 | 30 | 20 | 0 |
| Not owning | 18 | 21 | 36 | 25 | 0 |
| Owning | 67 | 8 | 17 | 8 | 0 |

Appendix Z: OLS Regression Table between ownership dummy variable and availability of farms obstacle

Regression Table: Ownership and Lack of Farms Obstacle

| Dependent variable: | | | |
|-----------------------------------|---------------------|---------------------|---------------------|
| | No_farms_all | | |
| | (1) | (2) | (3) |
| Owning_dummy | 0.524* (0.263) | 0.631* (0.325) | 0.619* (0.336) |
| Age | | -0.007 (0.012) | -0.009 (0.018) |
| Children | | | 0.078 (0.434) |
| Constant | 2.143*** (0.144) | 2.364*** (0.411) | 2.405*** (0.477) |
| Observations | 40 | 40 | 40 |
| R2 | 0.094 | 0.102 | 0.103 |
| Adjusted R2 | 0.071 | 0.054 | 0.029 |
| Residual Std. Error | 0.763 (df = 38) | 0.769 (df = 37) | 0.780 (df = 36) |
| F Statistic | 3.964* (df = 1; 38) | 2.112 (df = 2; 37) | 1.382 (df = 3; 36) |
| Note: *p<0.1; **p<0.05; ***p<0.01 | | | |

Gendered differences in farming management practises and related outcomes in Jutland, Denmark

*Thematic Course:
Interdisciplinary Land Use and Natural Resource Management*

Block 3, 2022

Authors: Hanna, Alberte, Mélanie, Giulia and Fiona

Supervisors: Dorette, Kristine and Torben

1. Introduction

Over the past decades, there has been increasing participation of women in historically male-dominated industries. Trends towards a higher representation of women have also been documented in the agricultural sector, traditionally constructed as a male space. Official statistics point towards a resurgence of female

farmers in several Western countries, with their number steadily increasing and their role and identity changing (Sachs et al., 2016; Franic and Kovacicek 2019; Whitley and Brasier 2020). Women farmers are no longer regarded only as wives, daughters, or helpers, but as actors responsible for decision-making, taking on the roles of managers or entrepreneurs (Whitley and Brasier 2020).

Despite being sparse, the literature on female farmers in developed countries suggests that women's approach to farming differs from men in terms of management and decision making (Schmidt, Goets and Tian 2021; Ball 2020). Women tend to run smaller farms and to be more risk-averse than men (Ball 2020). Furthermore, they are more likely to engage in diversified and value-added agriculture with an orientation towards direct markets channels, organic farming, sustainable agriculture practices, food processing and on-farm tourism initiatives (Ball 2020; Schmidt, Goets and Tian 2021). Part of the literature also noted that female farmers' decision-making is not exclusively oriented towards profit and productivity, but also considers animal welfare, community well-being and environmental concerns (Ball 2020).

Danish agriculture remains a traditionally male-oriented industry and very little research has been produced on female farmers, their approach and attitudes, constraints faced, perspective and aspirations (Oldrup 1999; Pedersen and Kjærgård 2004). When asked about the Danish gender gap in farm ownership in an interview from January 2022, professor in Gender, Power and Diversity from RUC Kenneth Reinicke declared that there is too little research on the subject to state anything significant (Røhe, 2022). Despite the low visibility, women contribute to the agricultural industry and are also showing a growing interest in the field, demonstrated by the increasing number of female students enrolled in agriculture schools (Danmarks Statistik, 2020).

With the trends showing a change in the roles of women in agriculture and a potential increase in the number of women managing farms, differences in management practices would very likely have an effect on the surrounding farming culture, politics, associations and local communities. The objective of this paper is therefore to investigate whether there is a difference between male and female farmers' approaches and management practices in Jutland, Denmark. With this, we hope to lay the groundwork for future studies on the role of women in agriculture in Denmark. This could have implications for promoting an increase of women in managerial roles in Danish agriculture.

Our research questions are therefore:

- Are there gendered differences in approaches to farming and farm life in Jutland?
- If so, do these gendered differences have an effect on farm management practices and local community engagement?
- If not, what might be reasons for not finding any gendered differences in approaches to farming and farm life in Jutland?

2. Methodology

Our study will be composed of both systematical and explorative data acquisition. We will conduct structured and semi-structured interviews, informal conversations and aim to keep an exploratory mindset throughout our field work in order to keep an open mind to finding patterns or trends we did not expect to encounter.

2.1 Case studies

For an in-depth understanding of potential gendered differences in farming, we will perform 6 case studies on specifically selected farms in Southern Jutland. We aim to select 3 farms that are managed by women farmers and pair them each with a male-managed farm similar in size, production type and location. It is important that the farmers we select are in charge of managing their farm and are the main decision makers, hereafter just called “farmer”.

The pairing of two similar farms that differ mainly in the gender of their managers should enable us to make direct comparisons and potentially find gendered differences in farming practises. For the case studies, we will split up into 2 teams of 2 and 3 people, respectively, each group with one driver and Danish speaker.

Farm walk

During the two-week field trip, we wish to visit these 6 farms to get a better understanding of how they farm and what might be important to them. To get a first impression, we will ask the farmer to show us around the farm and will take notes about what he or she tells us and what we observe during the farm walk. We will also ask case-specific questions throughout the farm walk and aim to stay open-minded and curious.

If time allows, we will bring a GPS device on the farm walk to track the route of the walk. Taking a GPS tracker will also allow us to mark specific spots or areas on the farm that could be relevant in our data analysis. Furthermore, the positions of our soil samples will be marked (see below “Soil samples and soil analysis”).

Semi-structured interviews

After the farm walks, we will conduct in-depth semi-structured interviews with the farmers in a more formal setting. The interview questions will dig deeper into their farming practises, their decision making process, their farming economics and other activities they might have on the farm or in the local community.

Soil samples and soil analysis

One part of our study is to find out whether potential gendered differences in farming practices might translate into differences in soil quality on the farm.

Since farmers know their soils best, we aim to ask about their soils on the farm walk. More specifically, we will then ask soil-related questions to the farmer, for example what they regard as “good” or “bad” soil and whether they perform specific practices to improve their soils. We would like the farmers to show us in which 3 locations they regard their soil as the best. In these 3 locations indicated by the farmer we will take soil samples and map their locations with GPS.

Per location, we aim to take 3 core soil samples and mix them thoroughly in a bag to get an average sample. Furthermore, we will take one soil sample per location for bulk density. This will add up to 3 soil sample bags (1 per “good soil” location, each composed of 3 core samples) and 3 bulk density samples per farm, leading to a total of 18 soil sample bags and 18 bulk density soil samples.

Soil samples will be stored under cooled conditions until analysis in the lab at Copenhagen University.

The soil samples will be analysed for microbial activity, carbon content and nitrogen (namely nitrate and ammonium) content. The bulk density of the soil will be calculated with the bulk density samples.

Data analysis

Already during the field trip, data collected on the 6 farm visits will be analysed for patterns that might point to gendered differences in farming practises.

2.2 Phone surveys:

In order to validate potential gendered patterns in farm practises found in the 6 farms of the case study, we will conduct structured phone surveys with 20 to 30 farmers in Jutland (to identify most possible women farmers). Apart from collecting answers about the general socio-economic characteristics of the farmer and physical characteristics of the farm, we will ask questions targeted to validating the trends we found.

The two Danish speakers Hanna and Alberte will be conducting the phone questionnaires. If necessary, the German speaker Fiona will add more phone interviews performed in German.

The answers given on the phone will be added into a survey tool directly. If some participants do not wish to answer the questions over the phone, we will give them the opportunity to fill out the questionnaire online via the same survey tool. We will however indicate which answers were given over the phone and which ones were entered online.

2.3 Focus group

Informal group interview with the three case study women:

After a preliminary analysis of the data acquired during farm visits and phone interviews, we will perform a focus group interview with the three case study women if possible. The aim would be to create a casual atmosphere where the women together will reflect upon, how/if their practises differentiates from men farmers and if it's something they think about. Particularly, we would ask about possible trends that we found in our data.

If they are willing, the setting would be a cooking session or afternoon coffee and cake, that would make the conversation about food and farming very natural. In this casual only-women setting we will hopefully discover aspects of gendered farming we would not in the solo interviews on the farms.

Focus group at Gråsten Farming School

If the gathering with the three women farmers is not possible, we will perform a focus group interview with 3-6 women from Gråsten farming school. The aim of the interview will also be to make the female students reflect upon their practises as women and if they differentiate from the ones of men. The interview will be performed at the school. The interview could be followed by or begun with them showing us around the school and us asking ice-breaker questions.

2.4 Sampling method:

Farm visits

For the 6 case studies, we plan on contacting the LandboSyd farming association to get guidance on which farmers we should contact. Our aim is to first find 3 women farmers that are willing to participate in the study. The choice of farm will be based on which women are most willing to participate and show us their farm.

We will then ask the 3 selected women-farmers whether they know of any farm in the area that is similar or comparable to their own farm regarding farm size, production type and location. If they don't know of any similar farms, we will go back to contacting LandboSyd for help.

Phone surveys

For the phone surveys, we aim to find 20-30 male and female farmers that are willing to participate in our questionnaire. We will look for contact details of farmers in Tønder municipality or surroundings in various farming registers. Depending on how much information we can find for each farm and how many farmers are

willing to participate, we will make a random selection from the register data that allows us to have a sample with both male and female managed farms and a broad range of production types.

Focus groups

For the focus groups, we will interview the three women farmers or contact the Gråsten Farming School to find students who are willing to participate in a focus group session.

2.5 Data preparation

Data that was collected on paper will be continuously digitised and supplementary notes will be added if possible.

If necessary, the data collected during farm visits and various interviews will be translated from Danish or German into English.

2.6 Data analysis

Qualitative data

In the analysis of the qualitative data from the farm visits, semi-structured interviews and focus groups, we will be working inductively and theory forming by first identifying broad concepts, ideas, behaviours, and phrases in the data and assigning labels to them. Second, we will use these labels to structure the data. Third, we will identify trends and patterns that might indicate if there are gendered differences in approaches to farming and in management practises.

Quantitative data

With the data collected in the phone (or online) questionnaire, we plan on quantifying socio-economic characteristics of the farm owners, economic indicators, household characteristics and physical characteristics of the different farms. The data will be analysed in Excel or the programming software R depending on the amount of respondents we got.

More specifically, we aim to analyse the data for any trends found in our qualitative dataset.

2.7 Time schedule

| Timeline | Mon | Tue | Wed | Thu | Fri | Sat | Sun |
|-----------------------------|---------------------------------------|---|---|----------------------------------|---------------------------|------------------------------------|------------------------------------|
| Week 1: 28.02. - 06.03.2022 | | | | | | | |
| Case studies | Preparation for farm visits | Farm visits Helle Andresen | Farm visits* | Farm visit Charlotte Daus | Farm visits* | Preliminary data analysis | Preliminary data analysis |
| Phone survey | | | | | | Refine survey based on farm visits | Refine survey based on farm visits |
| Focus group | | | | | | | |
| Rest | Visit to Tønder + area (all) | | | | | Leisure/party evening (all) | Presentations (morning) (all) |
| Week 2: 07.03. - 11.03.2022 | | | | | | | |
| Case studies | | | Farm visit Ingrid van den Helgen | | | | |
| Phone survey | Conduct survey | Conduct survey | Conduct survey | Conduct survey | Preliminary data analysis | | |
| Focus group | Refine questions based on farm visits | Refine questions based on farm visits (and survey?) | Focus group | Focus group | Preliminary data analysis | | |
| Rest | | | | | Leave at lunch | | |

* Farm visits: Informal conversation during farm walk + in-depth semi-structured interview + soil sampling + GPS data

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