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Modern 'Land Girls'

A study of the challenges in modern family farming, entrepreneurship and parenthood in Northern Savonia, Finland

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Abstract: Female entrepreneurs have been reported to choose self-employment for a variety of reasons, such as the flexibility of combining work and childcare. However, paradoxically female entrepreneurs may face double-bind situation where they are responsible for their business and are primary care givers of the family. Family farming is considered to be a very masculine occupation and the rural agricultural communities differ from their surrounding society on many levels. Those differences may be rooted in the surrounding understanding of society and gender regimes and the decision system farming families, specifically female farmers employ in their daily lives. This paper aims at inspecting the issue utilising two approaches. Firstly, the composition of farmers in Northern Savonia in eight different years in a 25 year period are examined in order to identify differences in labour incomes for male and female farmers. This is done to understand the environment of family farming and changes in the recent history that have led to current situation. Secondly, a thematic analysis based on a questionnaire and 9 interviews from farmers in the same area is conducted to investigate the perceptions of male and female farmers on the topic of gender equality of the occupation. The results of this thesis do not contradict earlier findings, and it seems that male and female farmers have labour income differences, while those differences are diminishing. In addition, female farmers reported on more challenges in combining self-employment and childcare activities than their male counterparts which may indicate double-bind situation being prevalent.

Keywords: female entrepreneurship, labour income differences, double-bind, family demography, gender equality, gender regimes

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1. Introduction

Farming communities, even in the otherwise equal Nordic countries, are still quite traditionalistic and male dominated (Brandth, 2002b; Kallioniemi & Kylmäläinen, 2012; Heggem, 2014; Silvasti, 2003) and at least in the Europe still dominated by family farms (Contzen & Forney, 2016; Kallioniemi & Kylmäläinen 2012). While a discussion of de-traditionalisation and diversity of the occupation in Finland has increased over the years, it remains heavily associated with masculinity (Kallioniemi & Kylmäläinen, 2012).

Women are underrepresented in self-employment in most parts of industrialised world (Rønsen, 2014; MacRae, 2005), especially in farming (Kallioniemi & Kylmäläinen, 2012; Silvasti, 2003; Heggem, 2014). This thesis looks at farmers as a group of entrepreneurs, with specific traits. In Finland only around 10 percent of all the farmers are women (Kallioniemi & Kylmäläinen, 2012), although Finnish daughters have had equal chance in inheriting property since 1879 (Silvasti, 2003). Interestingly, during the last 30 or so years the occupation has become increasingly male dominant in Finland (Tenhunen & Salonen, 2016).

Self-employed women, generally, face challenges in navigating between work life and time at home as the primary caregivers (Neergaard & Thrane, 2014). Women face double-bind situations, where they are engaged in both housework and their professional work, even in countries where state is involved in childcare (Neergaard & Thrane, 2014). State funded childcare is based on the idea that it generates greater equality in the society (Gupta, Smith & Verner, 2006; Thevénon, 2011). Yet, Neergaard and Thrane (2014) argue that it might not serve the self-employed women as much as it does those who are employed in the public sector. Paradoxically, women who are entrepreneurs, might choose self-employment in order to achieve more flexibility in their work and personal life (Neergaard & Thrane, 2014). Nevertheless, the line between one's own personal time and work time is blurred in self-employment, especially farming (Kallioniemi & Kylmäläinen, 2012). Additionally, female farmers are working in a male dominant and traditionalistic occupation, having constantly try to prove their worth as entrepreneurs to the surrounding community (Silvasti, 2003). Women at the farms have also been reported to be responsible for quite a respectable share of the work at the farms (Kallioniemi and Kylmäläinen, 2012).

This thesis focuses on two things: Firstly, finding possible differences in the received labour income based on the sex of the farmer to understand the environment in which Finnish farmers work in. Secondly, challenges of combining the life of an entrepreneur and childcare in exceptionally male dominant occupation are looked into.

1.1 Research problem

The previous research has greatly concentrated on the division of labour at the farms, the kind of work men and women perform at the farms, the line of succession and the continuity of family farming practices (Brandth, 2002b; Sachs, 2018; Heggem, 2014) However, rural and agricultural communities are constantly developing due to the demands from the surrounding society (Kallioniemi & Kylmäläinen, 2012), which is why it is of great importance to keep examining agricultural communities.

Furthermore it could be seen as a feminist issue, that Finnish women are not only underrepresented in farming, but also have to be flexible as they have a position as the primary caregiver of their children and as managers of their own business (Silvasti, 2003) and feel exhausted over the workload they continuously have (Kallioniemi & Kylmäläinen, 2012). It should, however, be taken into account that farming community is unlike most employment environments because of its history as businesses where the succession is based on family ties and also employing most family members (Brandth, 2002b; Contzen & Forney, 2016). Decision making processes in farming families are also rather unique (Farmar-Bowers, 2010). This paper intends to carefully asses both aspects when examining the labour income differences over the years and the perceived double-bind situation.

Moreover, state given help is taken into account - both childcare and substitute help at the farm which is unique to Finland (Kuusisto, Uusitalo & Parsons, 2015) – when examining the relevant issues, housework and childcare at farms. The thesis proceeds to do this while also taking the history of the occupation and the prominent structural changes in Finnish agriculture into consideration. Without employing both qualitative and quantitative approaches this thesis would not succeed in creating a comprehensive account of the environment and realities of the study topic.

This thesis aims at answering these two research questions:

Are there differences in received labour income based on the sex of the entrepreneur (farmer)?

To answer this questions a groups both of male and female head farmers are looked into, and in comparison their labour incomes are reflected to the labour incomes of those households with a one or more co-farmers.

What are the challenges the farmers perceive to have in their daily lives in combining entrepreneurship, housework and childcare?

To answer the latter, qualitative part research question, the following sub questions are looked into:

Do male and female farmers appear to envision their challenges differently?

Do the farmers consider their challenges to be common challenges with other entrepreneurs?

The first step to analysis is to look into whether or not there is any correlation between labour income and sex of the entrepreneur to understand the realities of the occupation in more detail. This will be done by examining eight different years in a 25 year period using OLS regressions and a pooled OLS of the time period. The main interest of this thesis, however is on family demography and a group of entrepreneurs in a masculine occupation and as a community with strong sense of traditionalism combining their work and childcare. The case of female farmers is examined specifically, as they face the challenge of both masculine occupation and likely the primary care responsibilities as well (Kallioniemi & Kylmäläinen, 2012; Neergaard & Thrane, 2014). Additionally, the labour income differences are reflected to gender inequality of the occupation and the decision making processes of the family farm unit. The second part of the analysis is based on a short questionnaire and 9 interviews from farmers from the same area with the labour income data. Finland is used as an example, specifically the area of Northern Savonia, which is known for its relatively large and economically significant population of farmers (Luke, 2016), to look into the research problem.

1.2 Aim and scope

This thesis aims to analyse the composition of farmers in Northern Savonia by reflecting them to structural changes in Finnish agriculture, such as the repercussions of joining the EU or other possible changes and discussing them in the context of head male farmers, head female farmers and co-farming farms over the years. Moreover those groups are then also analysed thematically by looking into the double-bind situation farming women may face as entrepreneurs and primary caregivers for children in the case of female farmers. This will be done using feminist and sociological theories on entrepreneurship and farming families.

To understand the study focus and area in more depth, it is crucial to examine the changes on the number of farmers as a whole and the differences between labour income for male and female farmers between the years 1970 and 2015. The dataset used to look into the first part of the analysis was constructed for the purpose of the thesis by MELA (The Farmers' Social Insurance Institution). The insurance (Farmers' Pension Insurance, MYEL) provided by MELA is mandatory and thus covers the entire area of Northern Savonia including all those who qualify for the insurance, meaning all farmers (Mela, 2018). The chosen study area, Northern Savonia, is the largest dairy production area in Finland, while also having the two largest beef cattle production municipalities (Vuorisalo,

2018a; 2018b). The number of livestock farms in the area is crucial, as Finland offers a unique service to its farmers. This service is the farmer's holiday and the stand-in scheme, which allows the farmer to go on a holiday, have a parental leave and sick-leave (Laiho-Kauranne, 2016). Livestock farmers are guaranteed to have entitled to an annual leave of 26 days, subsidized help for 120 hours per year plus some full prize additional services (Lahin, 2016). In order to collect this subsidy, they need to be full-time farmers and to have a valid insurance, however they do not directly receive it if they are only crop farmers (Lahin, 2016).

The qualitative data is gathered via a short questionnaire and 9 interviews from Northern Savonia. The data consist of both male and female farmer answers to avoid a possible bias. Themes of masculine occupations, double-bind and state given help for childcare are looked into. This thesis also aspires to shed light on the changes on the number of female farmers and the differences between labour income for male and female farmers between the years 1970 and 2015, using MYEL insurance data. Those changes are reflected in the family policy, insurance policy changes at MELA and the possible effects joining the EU had on the female farmer position. This will be done using some existing feminist theories, that are extended to female entrepreneurship, keeping in mind the rural environment that this thesis focuses on and reflecting those theories mostly on the interview analysis.

The two approaches support each other as the former explains the changes in the environment and a significant part of the reality in which the study subjects live in. The latter examines the same group of people concentrating on a different, but interrelated question with the first as it is possible that there is a reasoning why labour income differences and double-bind situation is accepted. This paper is mostly relevant for municipal officials and policy makers in Finland. The declining number of farming women has recently been acknowledged in the EU, which has led to projects encouraging women to take a position as the head farmer in support of equality (Kallioniemi & Kylmäläinen, 2012; Agriculture & Rural Development Unit, 2012).

1.3 Disposition

The thesis is constructed in a following manner, first the area of the study, Finland and the social and agricultural policies and changes relevant for the understanding the analysis are presented. After this the thesis proceeds to examine theoretical framework, including decision making processes and feminist theories. Previous literature addresses farming families, women as entrepreneurs and labour division at farms. The fourth section, "Research design and analysis" presents the data, method and methodology of both qualitative and quantitative approaches and the data collection methods used in

this thesis separately. Following each data description part in section 4, an analysis of the data and the possible biases are presented so that the different aspects of the two approaches are easier to follow. Fifth section, the discussion, combines the analyses with previous knowledge and discusses the different data analyses in reflection to each other. Lastly there will be concluding remarks, which proceeds the final part of this paper, bringing forward the limitations of the thesis and some suggestions for future research.

2. Background

Below, information on Finnish family policy, substitute service and the changes to Finnish agriculture is presented. This section plays a major role in the first part of the data analysis, as some of the over the year changes may relate to these policies. Moreover, it gives context to the following section (Section 3), especially as here the growing size of family farms and the falling number of farmers in the subject country are explained.

2.1 The Nordic Welfare model and the substitute service in Finland

Finland employs the Nordic Welfare Model to provide state given childcare and paid parental leave so support labour participation of parents (Neergaard &Thrane, 2014; Gupta, Smith & Verner, 2006). This is seen as an equality increasing policy, as it enables higher female labour participation and promotes dual breadwinner/dual earner families, while increasing the welfare of the children. (Eydal & Rostgaard, 2018; Neergaard & Thrane, 2014; Thévenon, 2011). Moreover, the family friendly policies have been regarded as policies that end up strengthening the family unit itself (Goldschneider, Bernhardt & Lappegård, 2015). However, for example Gupta, Smith and Verner (2006) and Neergaard and Thrane (2014) criticise the Nordic Welfare Model, as it seems to enable women to mostly be employed on the public sector (Gupta, Smith & Verner, 2006; Thévenon, 2011). Gupta, Smith and Verner (2006) and Thévenon (2011) also point out that publicly funded day care times might not allow long working hours and thus be in the way of work life, household work and childcare flexibility. This might lead to missing work regardless of day care options, as was also observed in the previous literature section later on in the paper (Kallioniemi & Kylmäläinen, 2012;

Neergaard & Thrane, 2014). It could also result in, much like in the case of Nordic countries, to a higher degree in occupational segregation, or even statistical discrimination (Gupta, Smith & Verner, 2006; Thévenon, 2011). Thévenon (2011) also highlights how the degree of state funded childcare is costly and highly based on the values which the country holds.

In addition to the Nordic Welfare Model, Finland employs a substitute service for farmers. This service, as offered in Finland, is unique as only a handful of countries offer state guaranteed help for farmers, none of which as inclusively in comparison to Finland (Kuusisto, Uusitalo and Parsons, 2015). While the farmer's holiday and the stand-in scheme are not a family policy or part of the Nordic Welfare Model, they allow the farmers in Finland to hold onto their farms during for example parental leave and have low cost help at their farms. Especially at livestock farms this is crucial as animals cannot be abandoned for a single day without care. During parental leave, caring for a sick child, or otherwise facing another inability to perform the tasks crucial to their business, the farmer is entitled for a substitute worker (Kuusisto, Uusitalo & Parsons, 2015). The payment for the work is based on the MYEL insurance payments and a basic hour salary (Kuusisto, Uusitalo & Parsons, 2015). Hence, the social policies can be said to affect the labour income especially of a female farmer though the MYEL insurance payments.

2.2 Changes in social and agricultural policy and environment

Much like family and social policies, agricultural policies affect the livelihoods of the study subjects of this paper. Structural changes in the political and agricultural scene such as the increasing urbanisation from the 1960s and 70s onwards, and EU membership have lead to a continuously diminishing number of farming population as a whole (Voutilainen, Wuori & Muilu., 2012).

While the number of farms and farmers has declined, the average farm size has grown substantially from a country wide average of <9 hectares in the 1970s to 45 field hectares per farm in 2016 (Luke, 2016). The size of the farm affects the labour income of the farm (Tenhunen & Salonen, 2016) which is why the growing average size of farms is relevant to this thesis. Especially as more hectares are needed to reach the same labour income than before, because of the new more effective ways to farm, the relationship between farm size and labour income is diminishing (Tenhunen & Salonen, 2016).

There have been reforms considering the MYEL insurance policy and the labour income themselves. Restrictions to the farmer wife's labour income were removed in 1983 (Pulkkila, Huotari

& Rossi, 2000). Moreover, the ways in which labour income was calculated and the compensation from the state have been revised (Pulkkila, Huotari & Rossi, 2001).

The overall economic situation of the country also has guided the direction towards the current situation. The economic downturn of mid-1990s severely affecting many farms as a result of the unreliable policies with loans, together with EU membership in 1995, resulted in the number of farms diminishing (Ki. Moreover, the subsidies towards all kinds of entrepreneurships, including agriculture, were cut during the decade (Kiander, 2001) which may have affected the profitability of many farms. The financial crisis of 2008 also had widespread impacts on multiple sectors, as well as farming in the whole of EU (Pietola, Myyrä & Heikkilä, 2012). In addition, the 2014 Russia counter sanctions hit especially dairy production farms (Sovala, 2014). Unbeneficial economic situation might further speed up the decline of the already diminishing number of farms.

Overall, the system of supporting farmers as a group of entrepreneurs is quite unique in Finland, offering substitute help and the mandatory social insurance policies, have contributed greatly to the survival of family farming and small farms in Finland. These changes in policies, structural changes in farming and the economic shocks become important especially when analysing the first part of this research concerning labour income differences.

3. Theory

This part highlights the theoretical framework used in this thesis: feminist theories on rural women and critique on how feminist theories are used in a rural context, along with theory on how farming families and especially women make strategic decisions in their life (Farmar-Bowers, 2010) and the gender regime model (Walby, 2004). The following theories are chosen because they fit the main question of combining entrepreneurship with parenthood and the decisions that are distinctly connected to the challenges in a more well-rounded and suitable way. While differences in labour income are discussed in the previous literature part, this this paper does not go further on human capital theories on gender wage gap following for example Mincer and Polacheck (1975). The thesis considers those differences originating, at least partly, from institutional restrictions and lack of opportunity (Bourdeaux and Nikolaev, 2018) and legislation (Neergaard & Thrane, 2014).

The previous literature on the subject of farming women and communities concentrates on participation in the labour force inside or outside of the farm, labour division in the farm and female entrepreneurship and the problems that may arise from it. Lastly this section provides a summary of the section with hypotheses.

3.1 Theoretical approach

3.1.1 Feminist and sociologist theories on rural societies

Feminist theories do not necessarily depict or even address rural women. Sachs (2018) discusses different feminist theories and applies them to rural societies. For example, socialist and radical feminists discuss mostly women's subordinate position and power structures, however from differing viewpoints. While radical feminists have been criticized, they bring out a point that women have different perceptions of reality than those of men (Sachs, 2018), with which some socialist feminists agree. Ecofeminism concentrates on women's connection to the natural world (Sireni, 2009; Sachs, 2018). Sachs (2018) however points out how ecofeminist research does not pay enough attention to rural localities and the knowledge contribution of women in rural and agricultural environments.

Some scholars (Sachs, 2018; Stamp, 1990) allude to the fact that discussions of rural women refer to them as a homogenous group, only discussing their issues from urban women's viewpoints and thus marginalising a whole group of women. Sachs (2018) goes even so far as to argue that the new wave of feminism, despite its intersectionality, has failed to acknowledge rural women as a valid category of women and that feminist theories do not address "the context of rural women's lives" (p.30). However, rural populations, and women, are not a homogenous group that consists of only farmers and people working with agriculture (Sachs, 2018). Moreover, theories and studies concerning de-traditionalisation of agricultural societies are exceedingly concentrating on women and their position and actions (Brandth, 2002b; Sachs, 2018).

Different branches of feminist theories regarding female entrepreneurship offer different points of view of why women choose entrepreneurship or even why self-employed women would have a different rate of success (Bourdeaux & Nikolaev, 2018). For example, liberal feminist theory suggests that women are disadvantaged because of institutionalised discrimination and "other systematic factors" such as lack of experience on their field (Bourdeaux & Nikolaev, 2018, p.4). Social feminist theory, however, argues for the inherent difference between men and women that leads to adapting differing approaches and thus to varying levels of success as entrepreneurs (Bourdeaux and Nikolaev, 2018).

3.1.2 DST – Decisions Systems Theory

Decision-systems theory (DST) was founded especially to look into farming families decision-making and to evaluate the rationale on which farming families act upon. Motivations ranging from individual career goals and family background to development and sustainability affect the decision making process for farming families from educating their children to business decisions. (Farmar-Bowers, 2010). All strategic decisions have a hierarchy and decisions are made based on their importance - for women especially, the family story motivations were an important driving force (Farmar-Bowers, 2010). Women seem to work on a level of personal interests, family interest and social interests, so that small scale personal decisions may result in larger scale sustainable results (Farmar-Bowers, 2010).

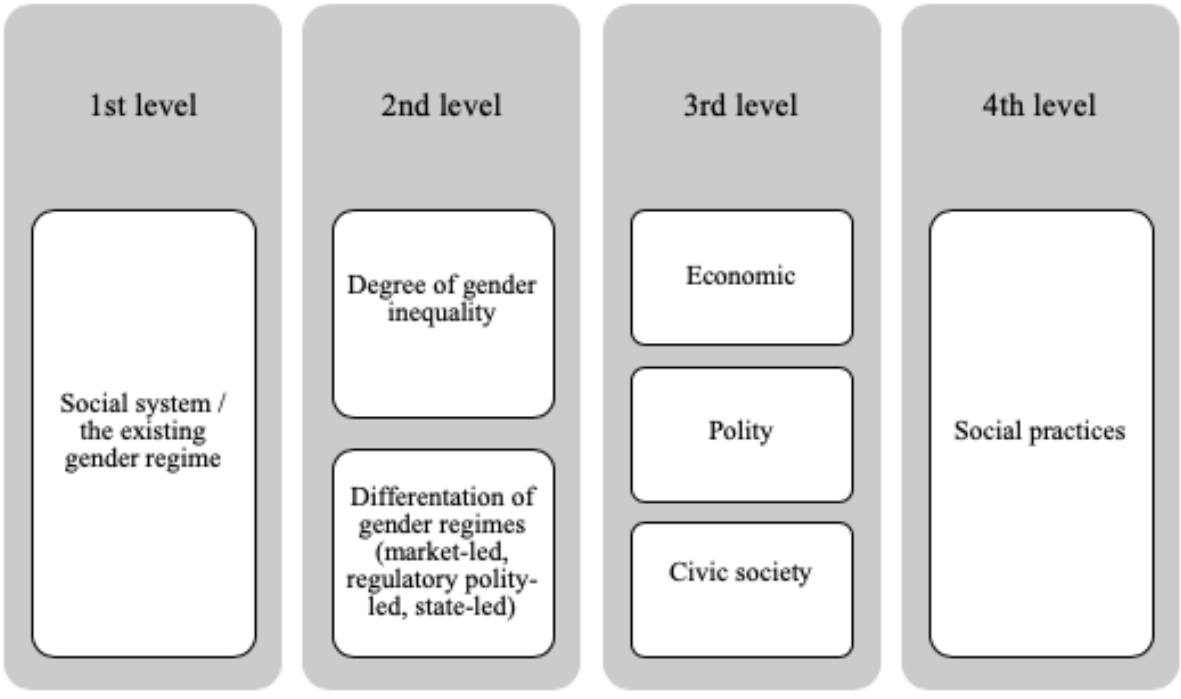
Farmar- Bowers (2010, p.142) highlights that the "decisions of main concern in DST are those that are prior to technical and economic decisions", and that these decisions have long term consequences even when the decision has to be made in the moment. There are five concepts that influence decision-making from individual goals and contributions to family aspirations to sustainability of the decision. These type of "decision-making processes of farming families establish a pattern for decision making that can lead to very flexible and adaptive decisions" and are done at least on two of the following levels: Firstly, negotiation of aspirations and "how to achieve those aspirations" (Farmar-Bowers, 2010, p.144). Secondly, DTS includes a concept of learning, where families can learn to even look for more "suitable opportunities" for themselves and their family (Farmar-Bowers, 2010, p.144). Thirdly, the "aspect of adaptability is that farming families constitute a class of semi-closed systems" (Farmar-Bowers, 2010, p.144).

3.2.3 The gender regime -model

Walby (2004) builds on the idea that there are four interconnected abstraction levels upon which the entire society – and its gender regimes – are based on, as is illustrated in the figure 1. The first level is the "overall social system", the second level includes the "degree of gender inequality" and a "continuum from domestic to public" including the differentiations of "various forms gender regimes" (Neergaard & Thrane, 2014, p.92). The third level is different domains, which account a multitude of parts of modern society such as: "economic (divided, in industrial countries, into market and household), polity (including states and transnational bodies, such as the EU), and civil society

(including sexuality, interpersonal violence, and social movements)" (Walby, 2004, p.10). The fourth and final level constitutes of various social practices (Walby, 2004). Gender relations extend over all the levels, and the different ways policies are lead (Neergaard & Thrane, 2014). For example, Nordic countries employ policies which "remove structural discrimination" (Neergaard & Thrane, 2014, p.92). In the US "the services necessary to support women in employment takes place through market mechanisms" and the rest of the EU countries employ "the removal of discrimination, regulation of working time so that it is compatible with caring, and policies to promote social inclusion" (Walby, 2004, p.11). Because the relationships between different levels are complex and dependant on the prevalent gender regimes, the outcomes of the different systems are also different and do not necessarily mean that following one policy automatically eradicates gender inequality (Neergaard & Thrane, 2014). The fourth level can also be thought to include the differing social practices of a particular community, such as the agricultural family farming practices, that in principle follow the rules of the surrounding society. However, in order to survive, family farms have to employ different methods of labour division (Conzten and Forney, 2016).

Figure 1. The four abstractions of society



Source: Walby, (2004). Illustration author's own.

3.2. Previous research

Masculinity of the occupation, rationale to choosing self-employment as a woman, especially in the developed countries, and the issues of combining entrepreneurship with childcare, such as double-bind, are discussed below.

3.2.1 Masculine occupation and position of women at the farms

Women's positions in the farming community in previous research is heavily researched in the 1980s and 1990s but it has mainly been focused in the farming wives work (Brandth, 2002a; Silvasti, 2003), the division of labour in family farming, gender roles, and reasons to take over a family farm - regardless of gender of successor (Lobley, 2010). However, in Finland the position of women in farming has been researched only from the 1990s, with feminist undertones (Silvasti, 2003). Silvasti (2003) and Sachs (2018) also point out that while the masculinity of the occupation is widely recognised, the position of women is still under-researched when studying the agricultural environment. Sachs (2018), in her book reviewing farming practices in the light of feminist theories, continues that patriarchal family structures, policy makers and even scientists devalue women's knowledge of their own environment on levels exceeding their social environment extending all the way to their knowledge of useful techniques and crops.

In addition, Contzen and Forney (2016, p.29) exclaim how there are clear inequalities in farming families that can be traced to gender inequality such as "unequal access to professional status, land ownership and individual income, as well as unequal decision-making, power and autonomy." This could be seen as a clear feminist issue, where women are being suppressed by their own society. However, for example Heggem (2014) points out how both women and men subscribe to the patriarchal ideals of farming.

Looking back, the position of women at farms has not been weak in Finland, which according to Silvasti (2003) has contributed to the current situation. However the role of the master of the farm is masculine, and sometimes the female farmers refer to themselves with the masculine term despite the gendered connotations of the words (Silvasti, 2003). Silvasti (2003) examines autobiographical interviews and pieces from folklore and autobiographical texts from both male and female farmers. The farmers were either at the head farmer or the farming wife position at the farm (Silvasti, 2003).

In this regard, it is important to see the issues with family farm succession. Quite often the identified successor is male (Lobley, 2010; Silvasti, 2003). Lobley (2010) comes to this conclusion by looking at '*FARMTRANSFERS'* survey data from several US states and prominent farming

countries in the Europe, in which the farmers announce their intentions of retirement, continuation or succession and identify their successor. Both Lobley (2010) and Silvasti (2003) voice concerns about the lack of successors and how it may endanger family farming as it is known today or result in a "closed shop" situation where the make of the farming population is entirely too homogenous and lacks innovation (Lobley, 2010, p.847). It is thus suggested that identifying female successors or the overall encouragement of women to take up farming may be the solution to diminishing numbers of farms (Lobley, 2010). Andersson and Lindestav (2014), using survey data from Sweden, address the unequal access to land as a problem for women. Trauger (2007) based on interviews also points out how more equal practices in family farming are also more sustainable, in the many meanings of the word, and that in agriculture women often lead innovation and adaptation strategies.

Rural women are less likely to be active in political activity promoting feminism, although there are some diverging examples of such (Sachs, 2018). They are, however, likely to join organisations supporting their families (Sachs, 2018). Nevertheless, these organisations can be regarded as a type of resistance against subordination, as they often seem to discuss the local issues from a feminine point of view (Sachs, 2018). Feminist sociologists (Brandth, 2002b; Sachs, 2018) explain how the survival of the farming family is the main interest of farming women, and other threats, maybe then even towards their autonomy, are secondary. These scholars note that rural and farming women have a strong sense of heritage and identity connected to their social and natural environment which affects their actions and resistance towards the surrounding society and subordination. Contzen and Forney (2016) find that the fluid and flexible manner in which the work is divided in the farms has been argued to be the main reason why family farming still persists in today's society.

3.2.2 Working woman at a farm

While the demographic transition and its effects are largely recognised in the scientific community and it has affected family farming greatly (Brandth, 2002b; Sachs, 2018), the family is the most important production unit in agriculture (Sachs, 2018, Wallace, 1994). In a historical perspective, women have left farms to participate in the labour force because of the technological advances, capitalisation and mechanisation of the occupation (Brandth, 2002a; Brandth, 2002b). Unlike many other occupations that have become equal after the demographic transition, farming has become more unequal in terms of female representation (Brandth, 2002a; Brandth, 2002b: Osterud, 2014).Farming being male dominated is said to be rooted in the capitalisation and mechanisation of the occupation (Brandth, 2002b). This, according to Brandth (2002a) and Osterud (2014) lead to diminishing work

load for farm women and daughters, who sought work either inside the farm as homemakers or outside the farm joining the labour force in other ways. Unlike other occupations that more or less have become more equal, farming, after the demographic transition has become more unequal in terms of female representation (Brandth, 2002a; Brandth, 2002b: Osterud, 2014).

Today, there are farms that not only are of the traditional model where all within the farming family work at the farm, but also dual income farms, so that one of the spouses works outside the farm (Contzen & Forney, 2016). While Conzen and Forney (2016) is a Swiss focused study, the results regarding the different modern types of farms can be applied to the Finnish society as well. Farm sizes in Finland are still moderate, and the community is very traditionalistic (Kallioniemi & Kylmäläinen, 2012), much like in Switzerland (Contzen and Forney, 2016).

Often the farm work is divided so that the main managerial and decision-making power is on the master of the house (male), and taking care of the cattle, identifying problems with them, administrative work and unpaid housework is done by women (Berlan Darque, 1988; Contzen & Forney, 2016, Heggem, 2014, Lobley, 2010; Wallace, 1994). Women are pushed for tasks such as animal care and men towards the mechanical work because they are expected to be predisposed to such activities due to their gender (Heggem, 2014). Similar results provide also interviews by Kallioniemi and Kylmäläinen (2012): women are mostly working with the livestock and combining it with running the household. The traditional division of labour holds, according to Silvasti (2003) even in the female lead farms where the woman is primarily responsible for the management as well. Kallioniemi and Kylmäläinen (2012) explain how in Finland only one main farmer is juristically allowed, and how that already affects the possible managerial position of women in farming families. However, women might not also feel like they are not equally treated, as long as they have some control over their own actions (Contzen & Forney, 2016). The study was carried out as semi-structured interviews at 55 Swiss farms to categorise modern family farm types and the mobility from one farm category to another (Conzten & Forney, 2016).

Family farming research is concentrated on farming wives and their workload as farm workers and caregivers (Berlan Darque, 1988; Contzen & Forney, 2016, Lobley, 2010; Wallace, 1994). Sachs (2018, p.7) calls for a "reconceptualization of women's work […] and lives on farms" because of the very fact that majority of the previous knowledge has been concentrated on "documenting the variety and extent of women's contributions in particular localities". Moreover, Sachs (2018) points out, how the family and women's positions are heavily romanticised in Europe and the US, stressing the importance of traditional values of family, which in turn affect how women's work at farms is valued and regarded. These ideologies have also already existed in or spread to other parts of the world due to for example colonialism (Sachs, 2018).

3.2.3 Women choosing entrepreneurship

There are both existing feminist social theories and empirical research on how men and women's work activities and their rationale to choose an occupation is constructed. Scholars seem to be rather unified in the thought that much of the difference related to the rationale comes from for example childcare (Neergaard & Thrane, 2014; Sachs, 2018:34; Joona, 2018; MacRae, 2005). It has been argued that those differences especially in rural environment "place them in a more sensuous, concrete, and relational world than men typically inhabit" (Sachs, 2018: 34).

Nevertheless, many women seem to choose self-employment because of its flexibility (MacRae, 2005: Kephart & Schumacher, 2005)). This flexibility that for example MacRae (2005), Joona (2018) and Rønsen (2014) point out supposedly offers opportunity to combine self-employment with childcare may be one of the underlying reasons for women to choose entrepreneurship. While this rationale might not be as prominent in "countries where state-sponsored childcare is widely available", Rønsen (2014, p.339) claims that the evidence of such has not been consistent. Rønsen (2014: 344) finds no evidence of added pressure, on the contrary the results from the binominal logit regressions supported the hypothesis that self-employment would "yield added flexibility" and thus make self-employment an "attractive alternative for employed women". Moreover, Joona (2018) finds that motherhood does not affect performance in self-employment and in fact mothers seemed to have higher incomes than their childless self-employed peers. Both Joona (2018) and Rønsen (2014) use longitudinal data. Their results speak for the compatibility of entrepreneurship, housework and childcare. Neergaard and Thrane (2014) do not agree with the added flexibility and emphasise a double-bind existing for self-employed women. Neergaard and Thrane, 2014) place their study Danish context using public survey data on and three interviews published in Danish newspapers and according to the results self-employed women were critical towards the childcare system. They find that self-employed women find combining motherhood especially near to childbirth to having one's own company. These challenges are tied to responsibility towards the company, its practices and cuts or reductions to parental allowance. (Neergaard & Thrane, 2014)

Additionally, Rønsen (2014) and Joona (2018) refer to a different kind of flexibility than what is usually meant in family farming literature: Contzen and Forney (2016) and Kallioniemi and Kylmälä (2016) mean flexibility in the division of labour and practices. Rønsen (2014) on the other hand refers to flexibility of working hours and childcare, even though self-employed women do work long hours (Joona, 2018).

Kephart and Schumacher (2005), in their review paper, suggest that women move to entrepreneurship because of the barriers to advancement in working life. They continue to conclude that women are simply tired of the pressure and the stress of navigating in masculine occupations (Kephart & Schumacher, 2005). Kephart and Schumacher (2005), however, do not consider the types of self-employment women enter, and mostly focus on women moving from corporate employment. It has also been suggested that self-employment is often chosen because of better earning opportunities (Allen & Curington, 2014). However, Dressler and Tauer (2015) based on their panel regression analysis argue that farmers accept a lower income than other entrepreneurs as farming produces socioemotional wealth to those practicing it which makes up for the lack of income in comparison. Gill (2014, p.510) argues that research on motherhood and job opportunities paints too pretty a picture, which is attractive to policy makers or different industries to encourage "'family friendly' policies". Gill (2014), in fact, claims that the underlying problem is that children primarily are cared by women and not that there are not enough opportunities for women in the labour markets. While Gill (2014) interviews individuals in the cultural work sphere, the nature of the consuming work hours makes the women in her paper feel pressured to cut their maternity leave much like those who are self-employed.

As established, flexibility is suggested as one of the main reasons for choosing entrepreneurship in the first place. However, as Kallioniemi and Kylmäläinen (2012) point out, farming is a very time consuming form of self-employment, which report to be causing stress and worry over the business and one's own While Kallioniemi and Kylmäläinen (2012) brush the subject of childcare in their interviews with farmers, they mostly focus on the male-female dynamic and de-traditionalisation of farm work, addressing the issue of equality, much like the already existing knowledge (Sachs, 2018).

3.2.4 Gender gap in entrepreneurship

While this paper does not go into detail on the gender gap, it should be addressed that there is evidence of a gender gap existing for self-employed people as well. Gender gap is defined as the difference in the hourly pay for men and women (Blau & Kahn, 2017). This thesis acknowledges this theory and the empirical results of it, but it is mentioned mostly to highlight the possibility of its existence in self-employment as well (Bourdeaux & Nikolaev, 2018).

For example Afandi and Kermani (2015), based on their Oaxaca-type decomposition analysis, suggest that the gender gap in entrepreneurship is likely to be caused by personal traits of the entrepreneur. Afandi and Kermani (2015) use survey data from 30 countries, both developing and

developed. Their results would fall more in line with the social feminist theory, which is explained more in detail in theoretical approach (3.2) section. Bourdeaux and Nikolaev (2018), however, oppose this view, and their results show a correlation with discriminatory regulations from institutions especially in opportunity entrepreneurship. Bourdeaux and Nikolaev (2018) also use survey data from several countries.

3.1.5 Contemporary issues in childcare for self-employed women at farms

In addition to the strongly gendered roles in farming families and Finnish farming community, farmer women have identified problems regarding double-bind. Childcare help is difficult to find, as they have unusual working times and as they work at home it is sometimes problematic to find a placement for childcare. (Kallioniemi & Kylmäläinen, 2012) While the survival of the family farm is strongly associated with the flexibility of the farming environment, where the division of work is quite flexible (Conzen and Forney, 2016), farming women, according to Kallioniemi and Kylmäläinen (2012), seem to have a different rationale for choosing to be self-employed than women in the surrounding society. Joona (2018) argues that self-employment is not on the way of family life, even with small children, because of modernising society and childcare opportunities. However, according to Kallioniemi and Kylmäläinen (2016), it is difficult to find a balance between work, leisure and time for caretaking at farms although this balance is easier to find in smaller farm sizes. Moreover, Neergaard and Thrane (2014) point out that self-employed women often cut their maternity-leave short or even postpone childbearing because of fear of financial strain. In addition, Neergaad and Thrane (2014) in their study focus on the Nordic Welfare Model, legislation and how female entrepreneurs go about their time with their self-employment and primary caregiving responsibility to "run the family" (Neergaard & Thrane, 2014, p.91). Emphasising the dual-breadwinner dilemma, which is based on a similar idea with Gill (2014), that women have the larger share or the entire responsibility of childcare activities.

This also relates to female farmers. Work absence, due to reasons such as spousal sick absenteeism, time spent caring for house or children and so on, was also amongst one of the most worrying subjects for farming women, according to Kallioniemi and Kylmäläinen (2012). They also point out how capable help is difficult to come by unless it is one of the family members, to whom farming women heavily rely on, which makes separating work and free time even more difficult (Kallioniemi & Kylmäläinen, 2012). Even when substituting help is received, the farming wives and

farmers in general cannot leave the help to act on their own, using their leave to supervise, which also causes stress and worry (Kallioniemi & Kylmäläinen, 2012).

3.3 Summary of the previous knowledge and hypotheses

To summarise, rural societies and family farming are more traditional than the surrounding society (Brandth, 2002a and 2002b etc.), and farming practices and communities in general have undergone several changes both in the long run – as the aftermath of demographic transition - and shorter term changes in legislation (Brandht, 2002b; Sachs, 2018). Moreover, much like Brandth (2002a) and Sachs (2018) claim, the agricultural environment differs from surrounding society, and thus looking into a different group of self-employed individuals might provide more insight on the topic.

Women still face the primary caregiving responsibilities (Gill, 2014; Sachs, 2018; Neergaard &Thrane, 2014). Although motherhood in the Nordic countries is not a direct barrier to entry for entrepreneurship (Rønsen, 2014), the existing legislation concerning working life and childcare especially around birth can be challenging for a self-employed woman (Neergaand & Thrane, 2014). Female farmers face challenges because of their position as entrepreneurs and because of the nature of their work, for example as owners and carers of livestock (Kallioniemi & Kylmäläinen, 2012). While the previous knowledge in farming women addresses some challenges between work and childcare, especially Sachs (2018) emphasises the need for more research on women as individuals in farming.

Following the research questions, theory and previous knowledge on the topic there are hypotheses that are used in this paper. Because institutions and the surrounding society have been seen as major factors in why female and male entrepreneurs have income differences (Bordeaux & Nikolaev, 2018), and those institutions are situated in the gender regime that exists in the society in question, the first hypothesis is:

H1: *Structural changes in Finnish farming scene affect male and female farmers in different ways partly because of the social policies that have been set in between the years 1970-2015.*

Female and male entrepreneurs have not only been reported to have differing rationale in choosing entrepreneurship but female entrepreneurs also struggle with double-bind situations (MacRae, 2005; Neergaard & Thrane, 2014). Moreover, as family members and entrepreneurs, female farmers specifically make decisions based on a complex decision making process, which prioritises family aspirations (Farmar-Bowers, 2010), the second and third hypotheses are:

H2: *Female and male farmers' perceptions of their challenges regarding their daily challenges originate from the prevalent gender regimes in their working environment*.
H3: *Strategic decisions are made in order to follow long-term family aspirations, even if it might increase their short-term distress with a double-bind situation.*

4. Research design and analysis

This part proceeds to describe the used data sets, justify their use and analyse each data set after discussing the advantage points and limitations of them. Moreover, the part proceeds to highlight that the chosen method is relevant in order to have a complete sense of the research area, the community and the challenges of family farming.

4.1 Knowledge contribution

This thesis' contribution to existing knowledge is a feminist approach to farm women dealing with childcare and the double-bind situation. The two approaches used play together to create base for this contribution by examining the current situation by looking at the differences male and female farmers may have in their labour incomes and whether it refers back to gender regimes in the environment and social practices. Secondly those groups, that is co-farmers and head farmers, are explored by focusing on investigating the subjective views of double-bind and female entrepreneurship. Focusing on family demographics, the paper strives to add to knowledge on female entrepreneurship and to how and why female farmers specifically perceive their position as caregivers and entrepreneurs.

This study fits to feminist empiricism, as it depicts "the efforts of women that remain invisible from the male-dominant perspective" (Sachs, 2018, p.30). However, this is not to say that the study concerns only the work women do at the farms or labour division but also the aspects of double-bind and female entrepreneurship. In essence, this thesis employs a mixed method approach to bridge together a comprehensive account of the study region and focus (Bryman, 2012, p.633).

Inwood, Clark and Bean (2013) acknowledged the importance of using both quantitative and qualitative approaches in research concerning farming population, as very often the motivations of an individual farmer and the farms' adaptations, lifecycle and growth vary considerably. Moreover, Brandth (2002b) pointed out that in feminist research on farming it is important to hear the

participants as, like already mentioned, farming environment arguably is unlike the surrounding society with more traditionalistic views and different motivations. This way the thesis may avoid some assumptions originating from feminist theories regarding female position in working life and as an entrepreneur especially in rural areas. Since agricultural environment is considered considerably different from the surrounding society, the thesis assumes that "individuals seek understanding of the world in which they live and work" (Cresswell, 2014, p.37) to better understand the views of the participants.

Bryman (2012, p.623-633), however, points out the arguments against mixed methods approach of which there are two major ones: the embedded methods and the paradigm arguments. To this paper, the paradigm argument - that the quantitative and qualitative paradigms are by nature unsuited - applies more as in analysing the interviews constructivism is employed. However, the quantitative analysis is actively used to understand the historical perspective and in addition to that, it is used to support the existing knowledge of how agricultural communities are structured. The decision to use interviews and thematic analysis can be traced back to Sachs (2018) and Brandth (2002b) on how hearing women in agricultural communities is of great importance.

4.2 MELA data description and analysis

4.2.1 The Farmers' Social Insurance Institution data

Finland is chosen for the study because of the growing male dominance of the occupation (Salonen & Tenhunen, 2016) while female succession has been possible for over 100 years (Silvasti, 2003). In addition to the structural changes in agriculture in 1970-2015, the following part examines the labour income of male and female farmers in different points of time. Farm size and available help at the farm, such as a farmer spouse, co-farmers and family members and how these affect the labour income are important considerations to the labour income as well.

The dataset used in the first part of the analysis is acquired from The Farmers' Social Insurance Institution MELA covering the entire Northern Savonian region. The observation points are 1970, 1980, 1990, 1995, 2000, 2005, 2010 and 2015. As the dataset covers the entire region and includes all the farmers that qualify the mandatory insurance and those who have taken a voluntary insurance, it is representative of the area. MELA is also the only provider of farmers' pension scheme, which is why they have such a comprehensive information about farmers in Finland. The analysed time frame is interesting, as it also includes years prior to EU membership. The original dataset consists of 82301 observations in total, which was reduced by sampling the original. The pooled OLS

after the restrictions had a sample of 72408 observations after restrictions. Two observations were dropped from the dataset, because they had no age. Some of the sampling was done on the basis of a possible mislabelling of the data, such restricting all labour income shares over 100%. Additionally, purely forest farms were restricted from the sample. Table 1 shows the sample size year by year after sampling.

Table 1: Number of observations by year and sex

Year	M/F	Original	Sample
1970	male	9208	8470
	female	8238	7982
1980	male	7894	7232
	female	6525	6239
1990	male	7746	7104
	female	5471	5218
1995	male	6402	5808
	female	4388	4110
2000	male	5016	4636
	female	3134	2949
2005	male	4481	4076
	female	2579	2435
2010	male	3973	3601
	female	2131	1990
2015	male	3398	3015
	female	1717	1569

Data source: MYEL insurance data 1970-2015. Author's own calculations applied.

The dataset includes important information on the farm id, the sex of the insured farmer, the labour income, the age of the insured in an age category, the status of the insured (main farmer or a family member), the percentage share of the labour income the insured is responsible at the farm, both field and forest hectares, the number of entrepreneurs at the farm, and the possible other family members insured. Adult family members are insured if they work at the farm, and their labour income is based on their wages they receive from the farmer and are of blood relation (Mela, 2018).

Naturally there are some limitations to this dataset. Firstly, both the labour income and labour income share are self-reported, which is why there might be an upward or downward bias in these depending on the age group as older age groups might try to maximise their labour income share. However, it is assumed that the bias will be same for every farmer in their respective age group. Moreover, female farmers prior 1990 had a limit to their labour income if they had a husband (Pulkkila, Huotari, Rossi, 2000). Moreover, the records prior to 1990 might no longer be complete anymore because some of these farms are no longer active and some of the data has been deleted.

Categorisation into age groups was done to protect the anonymity of the farmers by the MELA employee whom provided the data, which is understandable, but it affects the normality of the distribution. In addition, the dataset does not include variables such as educational background, marital status, number of children or production type of the farm. These deficiencies in the dataset might lead to omitted variables later.

Is not possible to draw comprehensive conclusions of whole of Finland from this dataset, and it does not represent the entire country or its farmer population, but for the purpose of this thesis representing the entire country is not needed. Additionally, this dataset is unique and it is constructed for the sole purpose of this thesis, which is why no other study has used this exact same dataset.

4.2.2 Variable construction

To be able to analyse the data, the following changes were made to the original dataset:

lnlincome: Outcome variable, income was logged. Labour income and the other variables are set in the 2019 index already when receiving the dataset, which is why there was no need to index it further. Income in the original dataset was rounded to the closest 1000, which is why the smallest possible income is always 1000.

sex: Sex of the insured was made into a dummy for two purposes. To restrict the sample in the log-linear OLS regression to examine one sex at a time and in pooled OLS to examine the relative strength of female farmers.

status: This variable was also made a dummy for the purpose of restricting adult family members from the regressions.

forestfarm: The value of 0 was given purely to farms that only had forest and no field area, as they do not receive the same substitute help services as those with field area. This also brought residuals down considerably, once the purely forest farms were restricted from the regressions.

agegroup: Although this category was in categories as the dataset was received it was regressed as dummies using the statistical analysis tool command.

head: Categories according to the share of labour income in the household were divided in four categories: 1) <50% of the labour income share, 2) 50% of the labour income share, 3) >50% <100% of the labour income share, 4) 100% of the labour income share. The last category allows comparison between male and female farmers who do all the work by themselves to each other and to other co-farming individuals. Interaction variables were done directly using the statistical analysis tool. The head farmer categories and age group categories were regressed as dummies using the statistical analysis tool.

familytype: This variable holds an assumption that the age groups 3 and 4 (51-62 years old and +63 years old) who have children in the age group (18-30), either in the entrepreneur or family member status, are married or have a marriage like relationship (such as co-habitation).This variable is not waterproof. Based on the information available, it is impossible to say if the assumed parents of the individual(s) in the age group 1 (18-30 years old) are indeed married or if they are siblings or other kinds of co-farmers. However, taking into account how traditional the farming communities are, it seems like a plausible assumption to make. The values were 1 for male and 10 for female in the two oldest age groups and 100 to an individual regardless of sex in the 18-30 age group.

4.2.3 Descriptive statistics

Figure 2 shows, that male farmers overall earn more labour income than female farmers and that, in general, those farmers who work alone have been doing better than their co-farming peers in terms of labour income.

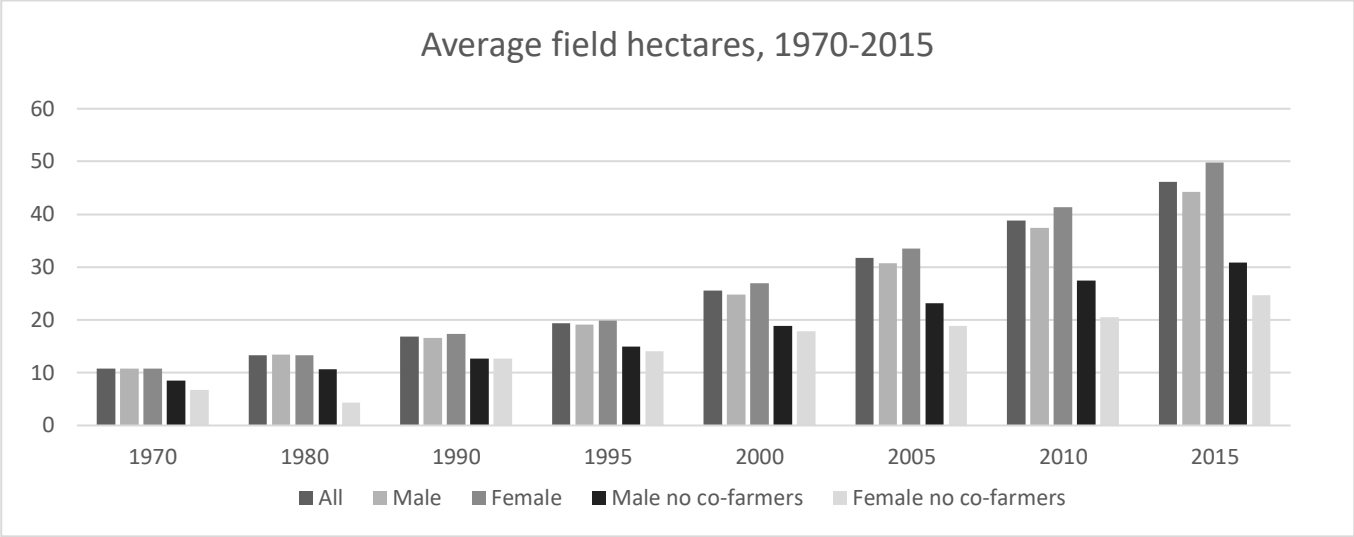
Figure 2. Average income for different groups, 1970-2015

Data source: MYEL insurance 1970-2015. Author's own calculations applied.

The average size of the farm (figures 3 and 4) has grown in the region, as it has in the whole country (Tenhunen and Salonen, 2016). Co-farming farms are larger than those managed by one farmer. It is more likely for female farmers to have a co-farmer or a family member (figure 4), which probably is why farm sizes appear to be larger for female farmers. However, as can be observed, farmers

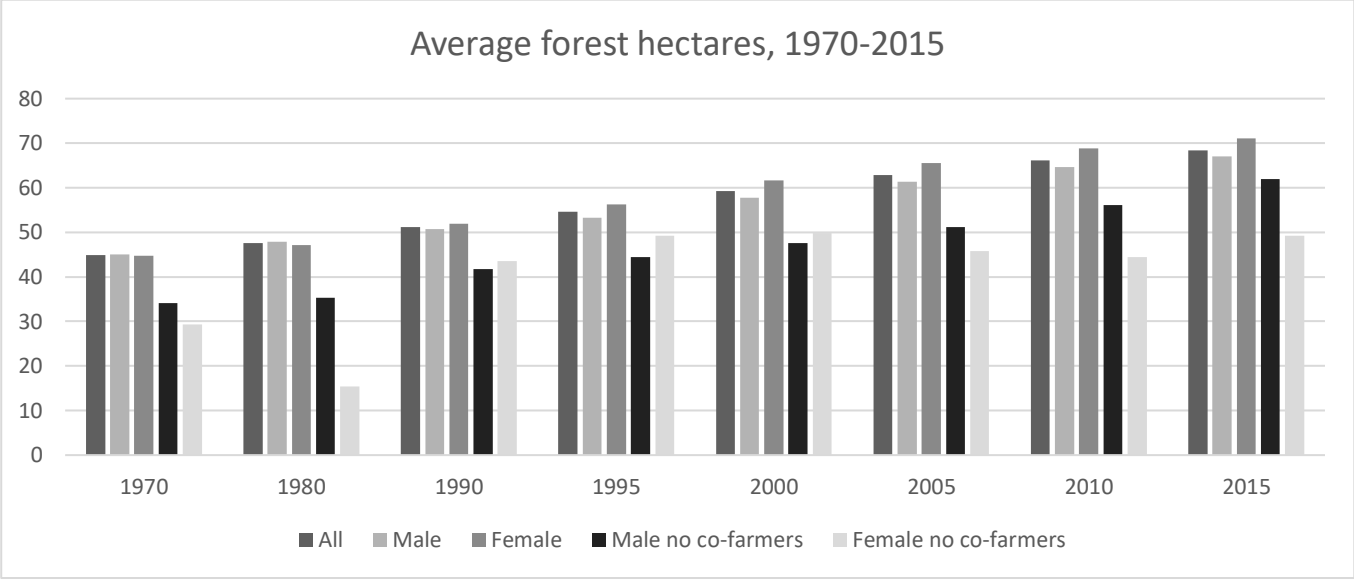
farming alone have considerably smaller farm sizes from those who have a co-farmer present (figures 2 and 3). The reason why there are so few insured adult family members can be explained so that not every family member who lives at home is insured, or that they are insured only during the busiest times of the year, namely spring and summer, which the observation point is not.

Figure 3. Average field hectares for different groups in 1970-2015



Data source: MYEL insurance 1970-2015. Author's own calculations applied.

Figure 4. Average field hectares for different groups in 1970-2015



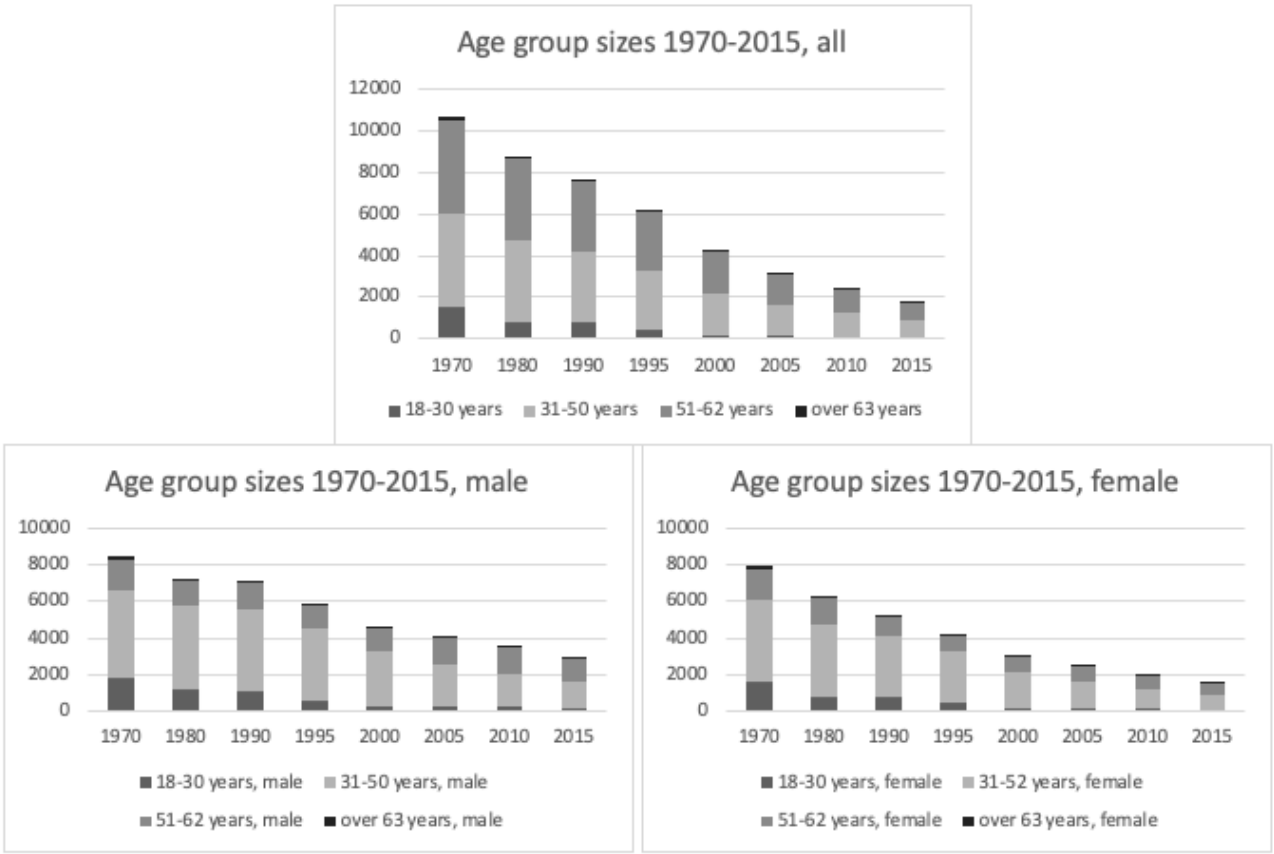
Data source: MYEL insurance 1970-2015. Author's own calculations applied.

Figure 5. Average number of farmers and adult family members, 1970-2015

Data source: MYEL insurance 1970-2015. Author's own calculations applied.

As can be observed from figure 5, the age groups 31-50 and 51-62 are quite well represented. This variable was categorised already in the original dataset to protect the identity of the insured individuals.

Figure 6. Age groups 1970-2015 for all farmers, male farmers and female farmers.



Data source: MYEL insurance 1970-2015. Author's own calculations applied.

As is expected, there are different kinds of households in the area (table 2), ranging from one individual to married couples with adult children still living at home.

Table 2. Family type by number of insured family members 1970-2015

Married couple with	Observations 1970-2015
One child	2082
Two children	2186
Three children	1075
Four children	529
Five children	232
Six children	125
Seven children	50
Eight children	50
Other type of family/work unit	70079

Data source: MYEL insurance 1970-2015. Author's own calculations applied.

Much like in the figure 5, it seems that it is unusual that the adult family members are insured with the parents, at least in the point of time when the data was taken from. Had the observation point been another time in the year, it might look different, moreover if all the household members were insured the figures would change even more.

4.2.4 Econometric model

To examine the possible differences based on sex, multivariate log-linear regression for each of the eight observation years from 1970 to 2015 is employed in this paper.

$$y_t = \alpha + field\_ha + forest\_ha + agegroup_t + co\text{-}farmers_t + familymembers_t + head_t + familytype + \gamma_t + \lambda_t + \varepsilon_t$$

Where y_t is the labour income in the year t, γ_t and λ_t are the interactions between farmsize and head farmer, ε_t is the error term. Co-farmers, familymembers and head are all treated as dummies. Moreover, to investigate the relative strength of female farmers over time, the following pooled OLS model was used:

$$y_t = \alpha + field\_ha + forest\_ha + agegroup_t + co\text{-}farmers_t + familymembers_t + head_t + familytype + sex_t + \delta_t + \theta_t + \varepsilon_t$$

Where y_t is the labour income in the year t, , δ_t θ_t are year dummy and the interaction between sex and year respectively. ε_t is the error term. Co-farmers, familymembers and head are all treated as dummies. Pooled OLS model was used to investigate the relative strength of female farmers over time.

The models used for this analysis allow the comparison between male and female farmers and different years. The data, has the possibility for panel analysis but for example fixed effects model does not fit the current research question. The pooled OLS also recognises the same individuals over time, which is why the regression is clustered. It is possible that because the models used in this thesis are simple, some issues might arise. Thus the results are interpreted as more directional than anything else.

4.2.5 Model testing and analysis of the Farmers' pension fund data

Data distribution and normality of the residuals

The used models suffer from non-normality of the data and omitted variables. Non-normality is likely to be caused because of the nature of labour income distribution for different types and sizes of farms, especially as this issue has been observed by others as well (Tenhunen & Salonen, 2016). Additionally, uneven age composition of the farming population, and the fact that the labour income is rounded to the next thousand may contribute to non-normality. However, heteroskedasticity and omitted variables vary considerably from year to year. Breuch-Pagan test does not allow robust regressions, which is why also White test is utilised, both tests confirming considerable heteroskedasticity. Pooled OLS regression does not allow those either tests. Jarque-Bera test and tests to confirm skewedness or kurtosis of the data distribution also confirm the non-normality of the residuals as a whole. The tests for normality of residuals, are found in the Appendix A.

The issue with heteroskedasticity was dealt with running the OLS regression robust in the log-linear regressions. Multicollinearity, on the other hand, was never a major issue with log-linear or the pooled OLS regression (Appendix A). The log-linear regressions suffering from multicollinearity are highlighted (Appendix A), those being regressions of male farmers in the last three forms of model building for the years 2000-2015. Incidentally, those regressions include variables that are constructed out of the original variables, such as the variable "*familytype*" and the interaction variables. The number of male farmers declines substantially during those years.

Both models also suffer from omitted variables, which also is expected as there are multiple factors that may affect the results, such as those already mentioned in data description: education and the number of underaged children, or children under the age of 7.

Sensitivity analysis

Substantial differences arise when comparing the robust log-linear regression in different phases in building the model to its final form (D, robust) (Appendix A, regressions). Differences arise especially when looking at the size of the farm and especially after dividing the share of labour income into categories indicating the head farmer status. In the log-linear regressions adding in the interaction variable changes the other variables' coefficients noticeably. Moreover, running the final form of the log-linear regression with robust standard errors produced different standard errors, which would lead to belief that doing so the model is more stable.

Moreover, the log-linear and pooled OLS both generate different results, probably because log-linear OLS and pooled OLS regressions aim to examine somewhat different goals. The heteroskedasticity and non-normality of the data affects the credibility of the analysis. Utilising aspects of the panel data possibility in a more profound way might produce more comprehensive results of the topic, however, as mentioned, using fixed effects model is infeasible because of the nature of the research question.

Analysis and findings

Table 3. Log-linear regression, robust. Men 1970-2015

VARIABLES	(1) Men 1970	(2) Men 1980	(3) Men 1990	(4) Men 1995	(5) Men 2000	(7) Men 2005	(9) Men 2010	(10) Men 2015
field ha	0.0577***	0.0409***	0.0324***	0.0265***	0.0153***	0.0118***	0.00600***	0.00290***
	(0.00379)	(0.00224)	(0.00343)	(0.00215)	(0.00124)	(0.00123)	(0.000827)	(0.000868)
forest ha	0.000991	0.00263***	0.00229***	0.00214***	0.00163***	0.00169***	0.00160***	0.00181***
	(0.00101)	(0.000430)	(0.000373)	(0.000324)	(0.000479)	(0.000466)	(0.000384)	(0.000552)
2.agegroup (31-50)	-0.0136	0.00137	-0.0300	-0.00534	0.0362	0.140***	0.193***	0.140**
	(0.0155)	(0.0204)	(0.0255)	(0.0327)	(0.0449)	(0.0463)	(0.0555)	(0.0580)
3.agegroup (51-62)	-0.0340*	0.0163	-0.0327	-0.00615	0.0443	0.113**	0.195***	0.174***
	(0.0176)	(0.0217)	(0.0284)	(0.0345)	(0.0461)	(0.0468)	(0.0551)	(0.0585)
4.agegroup (63+)	-0.0337	0.00602	-0.144**	-0.0282	0.0933	0.116	0.245***	0.166**
	(0.0233)	(0.0337)	(0.0601)	(0.0581)	(0.0739)	(0.0714)	(0.0694)	(0.0758)
2.co-farmers (2)	0.0395***	0.0389***	-0.00452	0.0594***	0.0869***	0.129***	0.126***	0.0626
	(0.0118)	(0.00961)	(0.0218)	(0.0214)	(0.0230)	(0.0296)	(0.0359)	(0.0416)
3.co-farmers (3)	0.150***	0.0486	-0.233***	-0.146***	-0.00908	0.0774	0.355***	0.616***
	(0.0282)	(0.0316)	(0.0442)	(0.0503)	(0.0654)	(0.0732)	(0.0803)	(0.104)
4.co-farmers (4)	-0.0507	-0.248***	-0.472***	-0.249***	-0.271***	0.0224	0.283**	0.666***
	(0.0390)	(0.0507)	(0.103)	(0.0929)	(0.103)	(0.112)	(0.118)	(0.135)
5.co-farmers (5)	-0.319***	-0.449***	-0.544***	-0.849***			-0.489*	
	(0.0585)	(0.146)	(0.0554)	(0.291)			(0.279)	
6.co-farmers (6)	-0.446***							
	(0.0377)							
1.familymembers (1)	0.0529***	0.0503**	0.0958***	0.165***	0.143***	0.183***	0.0293	0.109**
	(0.0156)	(0.0202)	(0.0283)	(0.0315)	(0.0380)	(0.0399)	(0.0471)	(0.0455)
2.familymembers (2)	0.0972***	-0.00971	-0.0380	0.176*	0.118	0.0440	0.154	0.278**
	(0.0355)	(0.0698)	(0.0901)	(0.105)	(0.189)	(0.225)	(0.167)	(0.130)
3.familymembers (3)	0.0200	-0.0197	-0.360***	-0.124		-0.00736	-0.854***	0.335***
	(0.142)	(0.0544)	(0.0722)	(0.144)		(0.0475)	(0.119)	(0.118)
4.familymembers (4)	-0.228***							
	(0.0627)							
2.head (50% of work)	-0.0378	0.0281	0.333***	0.210***	0.195***	0.500***	0.526***	0.614***
	(0.0559)	(0.0396)	(0.0725)	(0.0605)	(0.0576)	(0.0642)	(0.0646)	(0.0809)
3.head (>50% of work)	1.091***	0.985***	0.653***	0.609***	0.594***	0.794***	0.806***	0.913***
	(0.0347)	(0.0351)	(0.0693)	(0.0623)	(0.0664)	(0.0671)	(0.0694)	(0.0771)
4.head (100% of work)	0.979***	0.862***	0.406***	0.435***	0.368***	0.523***	0.574***	0.564***
	(0.0622)	(0.0694)	(0.0728)	(0.0644)	(0.0624)	(0.0685)	(0.0695)	(0.0832)
familytype	-0.000214**	5.23e-05	0.000223	-0.000282	-0.000548**	0.000142	0.000840**	0.000889**
	(8.80e-05)	(0.000126)	(0.000154)	(0.000193)	(0.000278)	(0.000281)	(0.000374)	(0.000380)
1b.head#co.field ha	0	0	0	0	0	0	0	0
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
2.head#c.field ha	0.0271***	0.00876**	-0.00439	-0.000886	-0.00115	-0.00325**	0.00114	0.00293***
	(0.00965)	(0.00401)	(0.00382)	(0.00247)	(0.00149)	(0.00153)	(0.00107)	(0.00112)
3.head#c.field ha	-0.0299***	-0.0164***	-0.00656*	-0.00258	-0.00255	-0.00252	0.000484	0.00150
	(0.00419)	(0.00258)	(0.00364)	(0.00251)	(0.00190)	(0.00156)	(0.00123)	(0.00110)
4.head#c.field ha	-0.00579	0.00302	0.0115***	0.00740***	0.00547***	0.00540***	0.00743***	0.00836***
	(0.00645)	(0.00648)	(0.00398)	(0.00283)	(0.00205)	(0.00168)	(0.00127)	(0.00160)
1b.head#co.forest ha	0	0	0	0	0	0	0	0
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
2.head#c.forest ha	0.00175	0.00125	-0.000430	-1.18e-05	0.000636	0.000189	0.000203	-0.000263
	(0.00162)	(0.000943)	(0.000479)	(0.000388)	(0.000511)	(0.000509)	(0.000437)	(0.000620)
3.head#c.forest ha	0.000422	-0.00118**	-0.000791*	-0.000991**	-0.000549	-0.000622	-0.000185	-0.000676
	(0.00102)	(0.000462)	(0.000439)	(0.000464)	(0.000552)	(0.000514)	(0.000434)	(0.000597)
4.head#c.forest ha	0.00197	0.000935	-0.000374	0.000551	0.00110**	0.000758	0.000366	-1.93e-05
	(0.00151)	(0.000728)	(0.000497)	(0.000471)	(0.000558)	(0.000626)	(0.000506)	(0.000605)
Constant	7.751***	8.057***	8.536***	8.702***	8.849***	8.664***	8.661***	8.720***
	(0.0313)	(0.0342)	(0.0702)	(0.0620)	(0.0712)	(0.0761)	(0.0797)	(0.0922)
Observations	8,470	7,232	7,104	5,808	4,636	4,076	3,601	3,015
R-squared	0.778	0.738	0.481	0.484	0.420	0.423	0.416	0.372

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Data source: MYEL insurance 1970-2015. Author's own calculations applied.

Table 4. Log-linear regression, robust. Women 1970-2015

VARIABLES	(1) Women 1970	(2) Women 1980	(3) Women 1990	(4) Women 1995	(5) Women 2000	(7) Women 2005	(8) Women 2010	(9) Women 2015
field_ha	0.00832***	0.0118***	0.0237***	0.0203***	0.0110***	0.00849***	0.00578***	0.00481***
	(0.000587)	(0.000858)	(0.00196)	(0.00200)	(0.00126)	(0.00110)	(0.000891)	(0.000688)
forest_ha	0.000347***	0.000419***	0.000996***	0.000901***	0.00100***	0.000768***	0.00131***	0.000580
	(9.53e-05)	(0.000129)	(0.000236)	(0.000298)	(0.000294)	(0.000295)	(0.000289)	(0.000369)
2.agegroup (30-50)	0.0246*	0.132***	0.0148	0.0501	0.0932	-0.0278	0.0612	0.0654
	(0.0129)	(0.0246)	(0.0381)	(0.0423)	(0.0591)	(0.0707)	(0.0879)	(0.0892)
3.agegroup (51-62)	0.0310**	0.152***	0.00962	0.0762*	0.150***	0.0232	0.0887	0.0513
	(0.0129)	(0.0234)	(0.0385)	(0.0427)	(0.0571)	(0.0681)	(0.0828)	(0.0846)
4.agegroup (63+)	0.0708***	0.129***	-0.265***	-0.0286	0.127	-0.0777	-0.0185	0.209
	(0.0265)	(0.0378)	(0.0683)	(0.0952)	(0.111)	(0.145)	(0.119)	(0.134)
2.co-farmers (2)	-0.0361***	0.0209*	0.168***	0.130***	0.145***	0.207***	0.191***	0.117*
	(0.0111)	(0.0120)	(0.0341)	(0.0323)	(0.0405)	(0.0458)	(0.0504)	(0.0651)
3.co-ffarmers (3)	-0.159***	-0.128***	0.0619	0.0439	0.125	0.321***	0.624***	0.571***
	(0.0177)	(0.0249)	(0.0584)	(0.0705)	(0.0957)	(0.101)	(0.107)	(0.116)
4.co-farmers (4)	-0.204***	-0.230***	-0.192	-0.143	0.118	0.639***	0.451***	0.576***
	(0.0273)	(0.0440)	(0.120)	(0.138)	(0.133)	(0.113)	(0.142)	(0.196)
5.co-farmers (5)	-0.180***	0.146*	-0.126**	0.530***			-0.350	
	(0.0503)	(0.0874)	(0.0520)	(0.0642)			(0.271)	
6.co-farmers (6)	-0.400***							
	(0.143)							
1.familymembers (1)	-0.00667	0.00490	0.132***	0.145***	0.119***	0.214***	0.106*	0.0516
	(0.0113)	(0.0221)	(0.0362)	(0.0392)	(0.0441)	(0.0532)	(0.0556)	(0.0633)
2.familymembers (2)	-0.0857**	-0.0729	0.196**	0.262***	0.193	0.357**	0.264*	0.301*
	(0.0362)	(0.0562)	(0.0920)	(0.0985)	(0.178)	(0.147)	(0.157)	(0.179)
3.familymembers (3)	-0.0390	-0.425***	-0.390***	0.0179			0.245	0.256
	(0.0547)	(0.0827)	(0.0883)	(0.114)			(0.151)	(0.211)
4.familymembers (4)	-0.217***							
	(0.0432)							
2.head (50% of work)	-0.652***	-0.473***	0.235***	0.170***	0.201***	0.423***	0.552***	0.583***
	(0.0507)	(0.0306)	(0.0508)	(0.0537)	(0.0517)	(0.0577)	(0.0638)	(0.0692)
3.head (>50% of work)	0.157***	0.0544	0.275***	0.297***	0.315***	0.468***	0.495***	0.497***
	(0.0541)	(0.0367)	(0.0618)	(0.0662)	(0.0717)	(0.0793)	(0.0925)	(0.0947)
4.head (100% of work)	-0.129	-0.566***	0.344***	0.270***	0.202***	0.322***	0.460***	0.338***
	(0.0907)	(0.0717)	(0.0641)	(0.0684)	(0.0758)	(0.0856)	(0.0883)	(0.105)
familytype	-1.32e-06	0.000734***	0.000174	-0.000116	0.000212	-0.000681	5.48e-05	0.000304
	(7.85e-05)	(0.000144)	(0.000232)	(0.000288)	(0.000384)	(0.000431)	(0.000500)	(0.000529)
1b.head#co.field_ha	0	0	0	0	0	0	0	0
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
2.head#c.field_ha	0.0760***	0.0370***	0.00600**	0.00671***	0.00329**	0.00167	0.00215*	0.00185*
	(0.0106)	(0.00315)	(0.00266)	(0.00235)	(0.00154)	(0.00146)	(0.00120)	(0.00104)
3.head#c.field_ha	0.0325***	0.0334***	0.0156***	0.0141***	0.00515*	0.00430*	0.00546**	0.00331**
	(0.00638)	(0.00367)	(0.00418)	(0.00362)	(0.00263)	(0.00231)	(0.00214)	(0.00141)
4.head#c.field_ha	0.0879***	0.136***	0.0187***	0.0197***	0.0185***	0.0171***	0.0137***	0.00867***
	(0.0181)	(0.0160)	(0.00361)	(0.00316)	(0.00249)	(0.00265)	(0.00229)	(0.00222)
1b.head#co.forest_ha	0	0	0	0	0	0	0	0
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
2.head#c.forest_ha	0.000994	0.00306***	0.000557	0.000972***	0.00126***	0.00111***	0.000418	0.000920**
	(0.000980)	(0.000794)	(0.000381)	(0.000357)	(0.000347)	(0.000363)	(0.000354)	(0.000445)
3.head#c.forest_ha	0.00203***	0.00168**	0.00154**	-0.000412	0.00110*	0.00102*	-1.69e-05	0.00166*
	(0.000564)	(0.000660)	(0.000660)	(0.000579)	(0.000652)	(0.000613)	(0.000816)	(0.000919)
4.head#c.forest_ha	0.00537	0.00783***	-0.000506	0.000167	0.000132	0.00189***	0.00125	0.00235**
	(0.00332)	(0.00247)	(0.000543)	(0.000504)	(0.000512)	(0.000678)	(0.000903)	(0.000998)
Constant	8.403***	8.447***	8.428***	8.614***	8.711***	8.757***	8.690***	8.791***
	(0.0174)	(0.0285)	(0.0636)	(0.0659)	(0.0805)	(0.0941)	(0.105)	(0.117)
Observations	7,956	6,239	5,218	4,110	2,949	2,435	1,990	1,569
R-squared	0.549	0.481	0.441	0.433	0.378	0.435	0.451	0.437

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

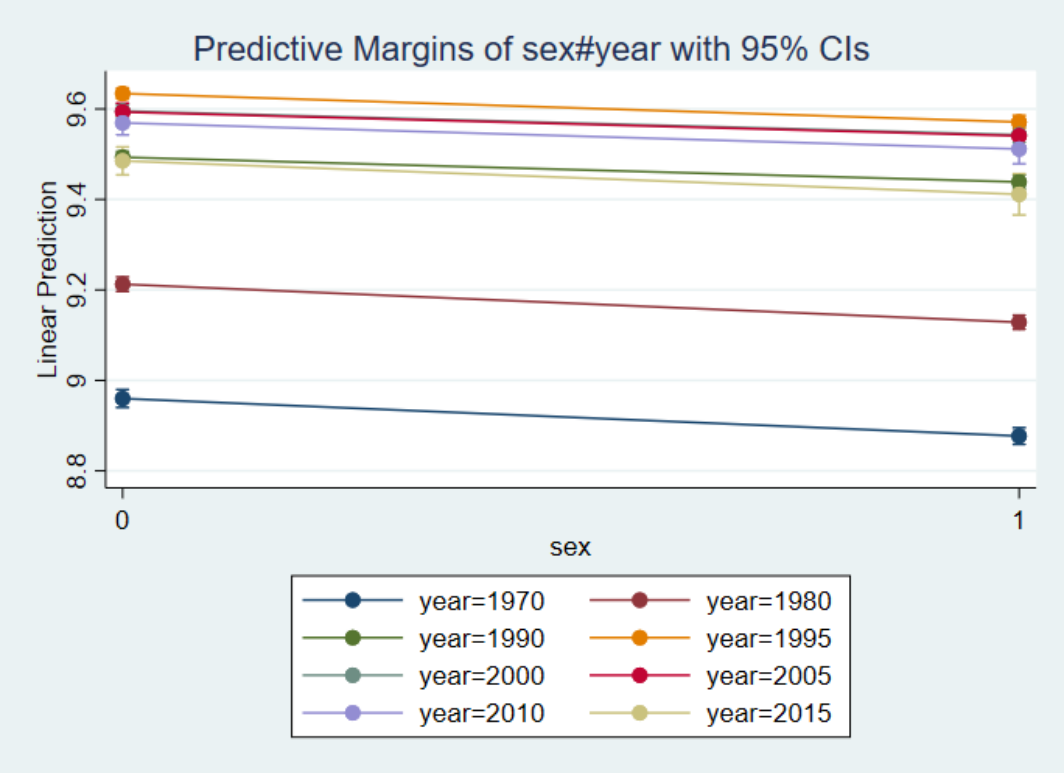
Data source: MYEL insurance 1970-2015. Author's own calculations applied.

Firstly, the years 1970 and 1980 are considerably different from the other six observation points in both log-linear and pooled OLS regressions. This most likely is caused by the then existing restrictions to the farming wife's labour income mentioned by Pulkkila, Huotari and Rossi (2000). Those years naturally generate results in which male farmers have considerably higher labour income

than female farmers, especially when looking at the returns from the size of the farm and the head farmer status. The degree of gender inequality (Walby, 2004) can thus be said to be higher in those years when the employed policies favour the male farmer. The pooled OLS also points to the similar result. Size of the farm, that is the field and forest hectares, and head farmer status consistently generate statistically significant results, excluding the year 1980 head farmer group 3 (more than 50% of the labour income share) and male farmers years 1970 and 1980 for equal share of co-farming spouses. Also the number of co-farmers and adult family members during the two first observation points are considerably more beneficial for male farmers than they are for female farmers. Much like Bourdeaux and Nikoleav (2018) point out, institutions and the policies they employ might have a hindering effect on the success of female entrepreneurs.

Secondly, the importance of EU membership in the year 1995 can be observed from the observation points before and after the joining the EU. As the number of farmers declines continuously especially after the membership, so do the returns to farm size, especially for male farmers. After EU membership, while the returns for farm size are declining for female farmers as well, the trend also seems to equalise male and female farmers' labour income differences. Overall, as stated by Tenhunen and Salonen (2016), there seems to be diminishing returns on the size of the farm and difficult to reach the same labour income as before in a larger farm. Equal co-farming, co-farming with more labour income share and doing all the work at the farm after the year 1995 all generate more labour income in the log-linear regressions. Overall it seems, in both log-linear and pooled OLS and for both female and male farmers that being the head farmer but having a co-farmer is the most beneficial. This however changes for female farmers in 2010 and 2015 where the equal share of labour income. The results after EU membership point to that although farm size and labour income have diminishing returns, the membership has furthered gender equality. Walby (2004) in the gender regime theory does emphasize the role of EU in the issues of gender equality. However, seeing that the models are omitted, it is difficult to say in what ways EU membership in fact has affected gender equality between male and female farmers.

Figure 7. Interaction between sex and year from the pooled OLS regression.



Data source: MYEL insurance 1970-2015. Author's own calculations applied.

Looking at the pooled OLS regression interaction (figure 7) there does not appear to be an interaction in the relative strength of female farmers to male farmers over the years. The years 1970 and 1980 differ from the other years considerable, again most likely because of the restrictions to farmer wives' labour income (Pulkkila, Huotari, Rossi, 2000). What is interesting is to see how in the pooled OLS regression the year 2015 is so much worse is for female farmers, which might be because, according to for example Kallioniemi and Kylmäläinen (2012), women take responsibility over the livestock, and the Russian counter sanctions were especially tough on dairy farmers (Sovala, 2014). The lack of opportunity to educate oneself on different aspects of the occupation was an apparent problem according to Bordeaux and Nikolaev (2018), and much like Heggem (2014) points out too, female farmers are especially encouraged to take care of the animals and not take up the field work.

Table 5. Pooled OLS regression1970-2015

VARIABLES	Pooled OLS 1970-2015
field_ha	0.0118***
	(0.000763)
forest_ha	0.00217***
	(0.000175)
2.age group (31-50)	0.0536***
	(0.00539)
3.age group (51-62)	0.0778***
	(0.00703)
4.age group (63+)	0.0661***
	(0.0159)
2.head (=50% of work)	0.267***
	(0.00858)
3.head (>50% of work)	0.657***
	(0.00718)
4.head (100% of work)	0.629***
	(0.0118)
2.co-farmers (2)	0.0941***
	(0.00744)
3.co-farmers (3)	0.0523***
	(0.0182)
4.co-farmers (4)	-0.0907**
	(0.0372)
5.co-farmers (5)	-0.204***
	(0.0725)
6.co-farmers (6)	-0.343
	(0.291)
1.familymembers (1)	0.0970***
	(0.0113)
2.familymembers (2)	0.0897***
	(0.0258)
3.familymembers (3)	-0.0996
	(0.0696)
4.familymembers (4)	-0.640***
	(0.0526)
familytype	0.000423***
	(2.98e-05)
1.sex (female)	-0.0829***
	(0.00720)
1980.year	0.253***
	(0.00599)
1990.year	0.533***
	(0.00970)
1995.year	0.674***
	(0.0112)
2000.year	0.636***
	(0.0143)
2005.year	0.633***
	(0.0175)

2010.year	0.609***
	(0.0214)
2015.year	0.525***
	(0.0231)
0b.sex#1970b.year	0
	(0)
0b.sex#1980o.year	0
	(0)
0b.sex#1990o.year	0
	(0)
0b.sex#1995o.year	0
	(0)
0b.sex#2000o.year	0
	(0)
0b.sex#2005o.year	0
	(0)
0b.sex#2010o.year	0
	(0)
0b.sex#2015o.year	0
	(0)
1o.sex#1970b.year	0
	(0)
1.sex#1980.year (female)	-0.00130
	(0.00619)
1.sex#1990.year (female)	0.0283***
	(0.00890)
1.sex#1995.year (female)	0.0198**
	(0.00965)
1.sex#2000.year (female)	0.0304***
	(0.0105)
1.sex#2005.year (female)	0.0301***
	(0.0116)
1.sex#2010.year (female)	0.0251*
	(0.0129)
1.sex#2015.year (female)	0.00893
	(0.0177)
Constant	8.080***
	(0.0129)
Observations	76,408
R-squared	0.621

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Data source: MYEL insurance 1970-2015. Author's own calculations applied.

The head farmer status and the farm size interactions did not generate consistent results in terms of statistical significance and mostly only the group of farmers who do all the work is significant (table 3 and 4). This interaction was looked into, to see if the co-farmers in fact could have

benefitted more from the division of labour. This however does not seem to be the case, if the significance is not looked at.

The results point to a possible correlation with sex and labour income over the years, although the structural changes, such as the EU, have considerably changed the composition of the farming community. Overall, the results are supported by previous knowledge in that women seem to earn less (Boredeaux & Nikolaev, 2018), even in the head farmer position although this paper only looks at labour income. The number of co-farmers and family members seemed to have a similar effect on labour income for both men and women, however male farmers had higher labour income in almost every year in any case. Moreover, the results seem to quantitatively support the argument for gendered division of labour found for example in Kallioniemi and Kylmäläinen (2012), Heggem (2014) and Sachs (2018), in that increasing field hectares does not affect female farmers' labour income as strongly as it does for their male counterparts because field work is seen as masculine work.

4.3. Interview and questionnaire data and analysis

This part discusses the data collection and the analysis of the data used to answer the second research question which handles the perceptions of the existing challenges of combining entrepreneurship and parenthood. The data was gathered through a short questionnaire and 9 interviews. There also is a visualisation of the interview participants in the table 6. The analysis is organised thematically, following central concepts from previous literature.

4.3.1 Collection and handling of the data

The qualitative data was collected via a short questionnaire and interviews of those volunteers who in the questionnaire voiced their willingness to participate. The questionnaire of 23 questions (Appendix B) and the reminders were sent by three officials to 900 farmers in three municipalities in Northern Savonia, and thus naturally these answers are not generalisable, especially as the response rate was around 13%. However, high participation rates are not expected in voluntary labour force or household surveys, and for example the largest household survey in Canada expected the response rate to be as low as 50% in the first year it was conducted (Hamel & Lamiel, 2014). The questionnaire, however, allows some comparison between the interviewees and other farmers in the area. Hence, it is unreasonable to expect a very high participation rate for this paper either. The questionnaire was sent in late February, to ensure a higher participation rate, as tax declarations are sent in February and

possible participants spend more time on their computers. The questionnaire respondents have voluntarily chosen to answer the questionnaire, however it was sent through a more official route which might have encouraged some to answer to a master's level thesis questionnaire. After receiving the answers to the questionnaire the potential interviewees were contacted. This means that the interview sample was partly purposive, as they are known to have knowledge on their own occupation. However, all interviewees volunteered, which may affect the reliability of their answers. Interview sample size, accounting for the scope of this paper, seems appropriate especially as there is a possibility to reflect interview answers to the ones from the questionnaire.

Nine semi-structured interviews with Northern Savonian farmers were conducted to understand the daily challenges of the respondents in more detail. A pilot interview was set out to "identify difficulties in applying the coding scheme" and to make sure no one single category takes "an extremely large percentage of items" (Bryman, 2012, p.304). The answers from the pilot interview are not used in this paper but were used to change the order of questions in the interview guide (Appendix C). Some of the questions and discussions are similar to the one's asked in the questionnaire, for the purpose of comparison and informing potential interviewees on the topic. Moreover, the questionnaire is quite straight-forward, which is why the interview was more suitable to approach some questions. This way the participant could give a more detailed picture of the challenges they face in their daily lives in combining entrepreneurship and childcare. The interviews were conducted via phone, with only one interviewer present. This seemed to be a way that least interfered with the daily routines of the farmers without the interview happening so that both parties are physically present. To ensure a secure handling of the data, there are no copies of the interview recordings and the files have been named after the same letter given to them in this paper.

The interview was carried out following an interview guide of 9 semi-structured questions and 5 clarifying questions at the end of the interview (Appendix C). The use of interview guide was used which allows for "more specific issues to be addressed" (Bryman, 2012, p.472). Using open-ended questions is central in understanding the individual experiences of each participant (Cresswell, 2007). Moreover, allowing more interaction between the interviewee and the interviewer ensures clarity and understanding both ways (Bryman and Bell, 2015). The chosen language for the interviews is Finnish, hence supporting the flow of conversation, also possibly eliminating issues with misunderstandings when both interview parties used their native language (Bryman, 2012; Piekkari and Welch, 2006) thus creating trust. There is no guarantee that all the participants have a high proficiency in English, which furthermore has solidified the decision for the interviews to be conducted in participants' native language. This thesis follows Bryman's (2012, p.49) criteria internal validity in qualitative approach: credibility, transferability, dependability and confirmability. By

employing Bryman's (2012, p.390) guidelines the research was "carried out according to the canons of good practice" and can be replicated by describing how the data collection was carried out. The different phases of the research process are traceable and there are transcripts of the interviews for verification purposes (Bryman, 2012, p.390). While no research is completely objective this thesis study strives to be free of personal bias as far as possible.

Regarding the ethical procedures in this thesis there were several steps taken from anonymity of the participants to other measures. The participants were given a form of consent (Appendix D) before the interview in order clarify purpose of the research, and also informing them of their rights as participants in the study. This builds trust and understanding between the interviewer and interviewee and helps the participants to understand the nature of the research in a more profoundly (Bryman, 2012). The participants are allowed withdraw their participation up to the final first draft phase of the research writing. Moreover, they could request for the data regarding their own participation to be destroyed after the final submission of the thesis.

As the interviews were recorded, and transcribed to make coding and identification of key themes more accessible (Bryman, 2012). The transcriptions were done manually mostly because the transcription programmes could not follow the dialect. Backup procedure notes were be taken during the interview. Recurring themes which arose from the interview transcriptions were identified and later analysed both deductively based on the theoretical framework and inductively, to identify themes that came up in the interviews (Bryman, 2012).

This thesis will respect the participants by allowing them to participate anonymously (Bryman, 2012), as identification of the individuals participating in the study is a possibility. Thus all information by which they can be identified by, such as their children's names, will not be revealed and mentions of such are censored in the transcriptions. The size of the farm and whether the spouse works at the farm however are reported as those factors are emphasized in the analysis. Educational background, head farmer status and the age of the respondent may also be important information for the study, which is why they are included in the interview table (Table 6).

When analysing and discussing data that is interpreted by the researcher, it is highly unlikely that all the intended meanings are understood by the researcher as they are meant by the interviewee (McGregor & Murnane, 2010), which is a limitation of this approach (Beuving & de Vries, 2015).

While the qualitative data are undeniably biased in comparison to the insurance data, the two approaches answer different questions that complement each other in a meaningful way. The information from the interviews is looked into thematically, taking workload and time spent at work, parenthood, gender equality into account. The observations from the qualitative data are more suggestive of the possible patterns in the farming society in a specific part of Finland rather than the

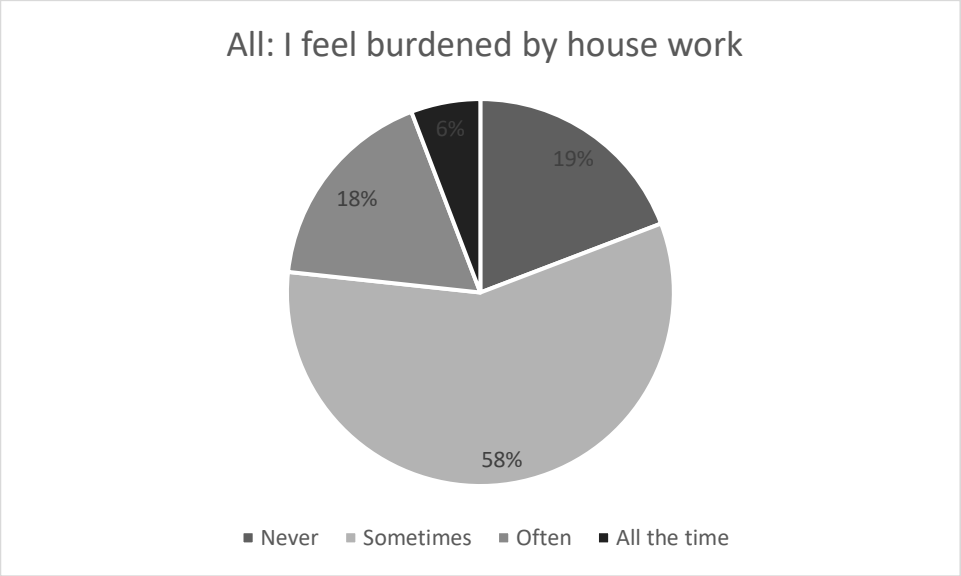
existence of differences in labour income for male and female farmers or the absolute evidence of double-bind for female farmers. The thematic analysis looks into female-lead farms which are reflected to male-lead farms, not forgetting the co-farming ones and comparing them.

4.3.2 Description of the questionnaire and interview data

The questionnaire included both quantitative and qualitative questions. A certain number of questions, were available for only female or male farmers regarding on their answers. Not all of the questions were mandatory because of the restrictions of the data collection site and the structure of the questionnaire form.

Out of 120 answers 55,8% were men and 44,2% women. A majority of the recipients (81,7%) had children and a spouse or a co-farmer (68,6%) to help them with the work load at the farm. A vast majority felt burdened by housework combined with their daily work, which also includes men (see Figure 8).

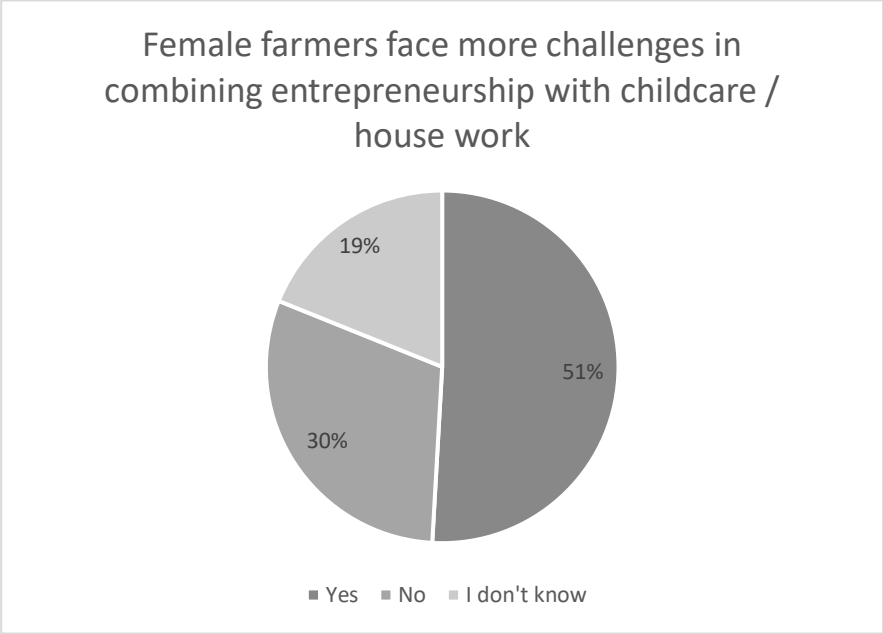
Figure 8. Male and female farmers' answers on feeling burdened by housework



Data source: Own calculations based on material from questionnaire sent by the author.

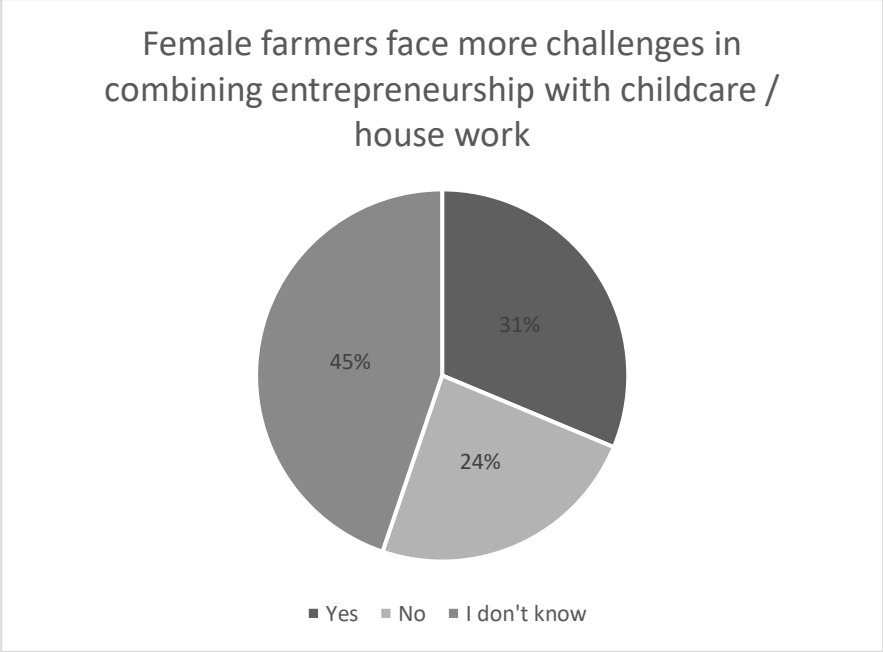
More than half of female farmers seemed to think that they face more challenges in combining entrepreneurship and work at home (Figure 9), while the majority of male farmers expressed that they did not know (Figure 10). In addition, those women who had children, still seemed to work during their maternity leave, especially with the care of the animals and administrative work.

Figure 9. Female farmers facing more challenges than male farmers, female answers



Data source: Own calculations based on material from questionnaire sent by the author.

Figure 10. Female farmers facing more challenges than male farmers, male answers



Data source: Own calculations based on material from questionnaire sent by the author.

The questionnaire fails to ask a couple of crucial pieces of information, which are if the fathers had shared the parental leave and how much of it. It also fails to ask the educational background of the farmers. While the questionnaire did inquire what kind of farm work and house or childcare work do the recipient have the main responsibility for, it does not inquire the MYEL share of the labour income. All of the things that are not found in the questionnaire are, in retrospect, important

information for the analysis which is why the analysis of the questionnaire is more surface level. Moreover, not all the questions were mandatory, because of the structure of the questionnaire and the restrictions of the site used to collect the data, which is why on some questions a blank answer has been left.

Table 6. Description of the interviewees

Interviewee	M/F	Farm size	Work	Status	Production	Age	Highest education
A	male	small	day job and farming	head	plant production	35	lowest higher education (agricultural)
B	male	small	day job and farming	head	plant production	56	no higher education
C	female	moderate	farming and occasional day job	farming wife	dairy	39	master's degree (non-agricultural)
D	female	moderate	farming	head (co-farmer)	dairy	37	master's degree (non-agricultural)
E	female	small	multiple sources of income (all entrepreneurial)	head	crop and garden	54	vocational education (not agricultural)
F	female	small	day job and farming	head (co-farmer)	plant and animal production	44	master's degree (farming and forestry)
G	female	large	farming	farming wife	dairy	36	vocational education + high school
H	female	moderate	farming	head	dairy	47	lowest higher education (agricultural)
I	male	small	farming and occasional day job	head	animal production	43	vocational education (agricultural and non-agricultural)

Data source: Interviews conducted by the author.

The reason that the last column of the table is named "highest education", is that some of the interviewees of them had a degree, but had also a vocational education in farming. In the status column the co-farmer in brackets implies that the interviewee themselves stressed that they indeed are co-farmers although the farm was succeeded from their side of the family.

4.3.3 "More hours in the day" – feelings of guilt and stress over combining childcare and entrepreneurship

There was quite a prominent difference between the male interviewees and female interviewees answers when it came to challenges relating to sex. The interviewed male farmers saw the challenges of the occupation to be very similar for both male and female farmers. Interviewees A, B and I all stated clearly that they did not believe that the challenges were that much different based on the sex of the farmer. The male interviewees answers thus belong to the minority group of respondents who felt that the challenges did not change with the sex of the farmer. The female farmers however, all highlighted that on some way sex added on a level of challenge to their occupation, but often also emphasized that entrepreneurship and especially farming is challenging regardless of sex of the farmer. In comparison to the questionnaire, the female farmer interviewees had similar ideas about the matter, however there were no female farmers in the interview who thought that female farmers did not have more challenges in comparison, at least on some level. Many of the female farmers interviewed brought up accessibility of childcare or accessibility of temporary substitutes, which made the daily life more challenging with a business and family to run, similarly to Neergaard and Thrane (2014). In the interviews especially H, who did not have spouse to share childcare responsibilities emphasized her challenges to be rooted in the time consuming self-employment.

Only two of the male farmers, however, had children and they both had a crop farm, which might affect their answers. A thought it was relatively easy to navigate between childcare and the spring and summer months when he mainly took care of his farming responsibilities. He also mentioned that him and his spouse share the childcare responsibilities equally. A stated that whenever his spouse was unable to take care of the children when he had farm work to attend to he could find temporary workers. The main difference here to the answers of female farmers was that many of them stated that there needed to be "*more hours in the da*y" . C, D, E and H had stated this almost identically and H admitted constantly feeling that self-employment was on the way of her spending time with her child. Much like Neergaand and Thrane (2014) also emphasised with the case with female entrepreneurs, the female farmers answers pointed to the direction of experiencing double-bind in their lives.

C: *"I have a constant feeling of not being enough"*

H: *"I constantly feel that I am not doing enough [with my daughter], because I spend so many hours of the day at the cow house."*

F when asked about the most challenging thing in her daily life was that things needed to be constantly figured out, who takes care of the day care trip, who goes to take care of the livestock. She also pointed out because she is constantly busy that:

F:*"I have, in the past been a perfectionist that everything should be done as well as possible, but at the moment if you want to get something done so* [perfection] *is not possible."*

Moreover, C, D and G admitted that working during their maternity leave was almost unavoidable, both while pregnant and with an infant, which also Neergaard and Thrane (2014) have brought up in their study. They also reported this being an issue, as it would mean reductions to their maternity leave pay and that they were required to report their working hours, again along the lines with Neergaard and Thrane (2014). It became apparent, however, that they were only willing to report the spent hours at cow house. D, for example, listed paperwork and supervision from the home computer as one of her daily tasks during the pregnancy but did not list them at any point as work that she would be required to report further. Similarly, G, who told that she returned to the work with the livestock very quickly after her childbirth. However it was not only for the benefit of the farm business but according to her for her own good. Much like the interviewees, the female farmers respondents in the questionnaire answered similarly.

While there were differences in the answers from male and female farmers, the interviewees who pointed out the biggest challenges were dairy farmers, which is even according to the crop farmers A and B very time consuming. B even stating that he "would not like to be in their shoes". Nevertheless, E, a plant producer also brought forward the same issue with wanting to have more time in the day and that her other sources of income (all self-employed) had more leeway on planning ahead even with the children.

Although for example H spoke of the difficulty of fitting her schedule and school schedule together and not day care, it follows quite closely to Thévenon (2011), Gupta, Smith and Verner (2006) and Neergaard and Thrane's (2014) remarks on the schedule clash of the parents in employment outside public sector and their children's schedules. The interviewees however voiced a simple need for the state funded day care and it also being a great help in their day.

F: *"I have been wondering how some people seem to think that when I have a farm day that [her son] is at home those days. - - I know this is the tradition to take care of the child while doing the farm work, but - - I think that it is non-negotiable that the child is at the day care when I work."*

She also pointed out that as much as her day job requires her son to be at the day care, she wants to dedicate her time to the farming when that time is at hand so she has more time to do her job as a farmer. F and D also highlighted that children could not be left at the work place without supervision and because of the dangers at the farm, such as the animals or machinery.

On the other hand, one of the interviewees D spoke in favour of having the children at home and not at the day care, because the children learn the ways of the tricks of the trade and they get to spend time with their parents more than they would otherwise. Most women (C, D, H) also admitted once the children are big enough to fend for themselves for short periods of time, that there regularly are moments when children are left in the house when the parents are attending to their work. This is not something that comes up in the Neergaard and Thrane (2014), but seeing that farmers are a very specific group of entrepreneurs who work at home, this is expected addition to the childcare challenges.

There was no clear consensus on how the interviewees perceived their occupation in relation to other self-employed. While especially the dairy farmers seemed to think that their chosen production type was very time consuming they did not want to say that other farmers or other entrepreneurs would have considerably different challenges. All farmers seemed to think that while there are differences, entrepreneurship is always about responsibility over their own finances and balancing work and family life is challenging regardless. D simply stated that: "*one must be a bit daft to be an entrepreneur as a woman anyway*". Interviewee I, who did not have children remarked that "*it is not machine we work with*" referring to that their livelihood is dependant on the wellbeing of living beings, which makes a difference between farmers and other entrepreneurs. He still seemed to think that the challenges that other entrepreneurs face cannot be that different. E, who was self-employed on other sectors as well had a slightly different view explaining that for her the time she spent farming was the most time consuming and difficult to combine with anything else. She explained that doing things simultaneously with farming was tiring and time consuming. An example of such would be the following remark she had.

E: *"I remember a time when I first went to see a school play that my kids were in and after that went to plough. I stayed there until two am and coming home I woke up my husband to help me change the machine in the back of the tractor and I went back to work."*

4.3.4 Breaking the traditions but at the same time holding on to them

Continuing on how it was mostly female farmers who emphasized the difficulties in navigating between working life and parenting, it was difficult to exactly pinpoint the challenges that may arise from underlying gender inequality or the explicit consequences of gender regime (Walby, 2004). Although Walby (2004) and Neergaard and Thrane (2014) also point out how complex different societies and communities are in how gender regime manifests itself in it. Mostly the gender regime and the social practices were noticeable in mentioning the traditional way of doing things and comparisons to the current state of life at the farms. All interviewees with children reported on sharing house work and childcare quite equally. G however said that while her husband takes part in childcare, and thus relieves her work there, she knows of more traditional men who are less willing to do anything less than the physical work and not housework or childcare. They did also admit to some more gendered labour division inside the house and at the workplace. For example, B, F, C and D mentioned that in their respective households women did more of the "inside house" activities. It was also interesting that H, who was the head of her farm with help from family member but not a co-farmer, said to have workers to take care of the field work while she took care of the livestock, much like Heggem (2014) also reported to be the case.

The underlying assumption that women take care of the children and household work (Gill, 2014: Neergaard and Thrane, 2014) was also not easy to identify as such from the interviews. However, interviewees whom had recently had an infant or were expecting commented on the natural state of the increasing childcare activities with breastfeeding.

D: "*Although today one shouldn't speak of this kind of roles but if we think about the maternity leave: what can my husband do to the youngest one as [the child] hopefully is breastfed. The baby is basically attached to me for half a year --. I do think that although men have their own challenges that household chores and childcare is more on us* [women]."

D continued that there was a that the certain way to divide the work was beneficial for them. Once one of them had adopted one task the other could specialise in another, thus making the life easier for everybody. Similar response gave C and G on the division of labour at their farm. Moreover, for example C and F voiced that it might be more of a trait for women to stress over tidiness of the home and not being able to relax over chores.

These findings might indeed imply that Walby's (2004) gender regime theory and the degree of gender inequality does affect women differently in farming communities or that gender equality if perceived very differently in agricultural and rural societies (Sachs, 2018). However, the practices that the farms utilised also pointed to the direction of de-traditionalisation such as E doing

the field work by herself and her husband stayed out of the whole farming business. Moreover, for example C and A especially emphasized that the men in the house (A himself and C's husband) had spent their paternity leave days.

4.3.4 For the best of the family and the farm?

Much as Farmar-Bowers (2010) points out, the farming families are forced to do long term decisions that suit their family aspirations. This was especially visible in the interviews with women, much like Farmar-Bowers also emphasises (2010). An example of DTS was shown in the interview G, where she pointed out an important economic decision, which in the end affects the family substantially. She was offered a minimal day care hours in a month for her two toddlers, but that would have meant that the family will face cuts to their substitute help.

G: "*We simply cannot give up the substitute workers for two hours of day care*"

However, this means that the municipality has "done their part" as she puts it, and the family has to strain their mental and physical resources to receive another important resource, labour. Being flexible in the labour division (Contzen & Forney, 2016) in this study also seemed like a decision that is done keeping the best interest of the family in mind. All interviewees with children (all besides I) stated that the whole family had to adapt with the changing situations at the farm. For example D stated that her eldest son already before turning 15 was eager to take part in the field work. Moreover, she points out that even if she wanted to do some of the work her husband does, it is not sensible, thinking about the traits they both have.

It was not only the family's best interests at that moment, but much like Farmer-Bower (2010) suggests, the long term decisions were the ones that drove the interviewees. D and E specifically mentioned succession and hoping to leave the farm to their children. E and F mentioned wanting to take care of the diversity of nature but also the occupation and rural environment. This would imply the level of sustainability being kept in the strategic decision-making involving their family and business.

5. Discussion and critical reflection

This paper aimed at two things: Firstly, identifying possible correlation between sex and labour income and changes in labour income for male and female farmers during a 25 year period. Those were then reflected to the existing gender regimes in the occupation. Secondly, the paper discusses the challenges of a modern female entrepreneur in a family farming setting. The two approaches support each other in that both highlight different problems applying to same group of people and both problems seemingly affected with the existing gender regimes. Moreover, the approaches allow understanding the prevalent situation in which female farmers earn less labour income than their male counterparts, and even in the de-traditionalising environment are faced with double-bind situation in one way or another.

According to the H1: *Structural changes in Finnish farming scene affect male and female farmers in different ways partly because of the social policies that have been set in between the years 1970-2015.* The structural changes and policies portray the gradual shift from traditional family farming to more unconventional units. The datasets present a variety of different family farms, from traditional family farming to one person farms. According to the policies regarding the labour income limit and EU membership seemed to have an impact on especially female farmers labour incomes, from a considerable disadvantage to their male counterparts to being nearly as advantaged of similar attributes of the farm. As the number of observations diminish each year and the differences between male and female farmers labour incomes became smaller, which on the other hand goes against the hypothesis. It is possible that there are more possibilities for women to be more knowledgeable on machinery which Heggem (2014) still saw to be a major issue in modern farming as women were more encouraged to take up different tasks from men.

Previously identified challenges for female entrepreneurs were the primary caregiving position of women while simultaneously being a full time entrepreneur (Gill, 2014, Neergaard & Thrane, 2014), contributing to the second hypothesis, H2: *Female and male farmers' perceptions of their challenges regarding their daily challenges originate from the prevalent gender regimes in their working environment*. Sachs (2018) and Brandth (2002a; 2002b) and Conzen and Forney (2016) also argue that while farming women or female farmers are working in a highly masculine occupation, which separates this group of entrepreneurs from others. Following the second hypothesis, the main challenges for female farmers seemed to be time management in the busy schedule of farming and taking care of the family, essentially the double-bind much like was expected. Naturally, this was more challenging for some families than others depending on the type of the farm and options for childcare and even male farmers in the questionnaire understood the differing challenges between male and female farmers. The findings were not surprising, as such and this paper adds on to especially Neergaard and Thrane (2014) in that while Nordic Welfare Model can indeed increase

women's labour participation, but it can generate more challenges to especially self-employed women.

Moreover, farming families have a very distinct pattern of decision making (Farmar-Bowers, 2010), making the distinction even more pronounced, which lead to the third hypothesis, H3: *Strategic decisions are made in order to follow long-term family aspirations, even if it might increase their short-term distress with a double-bind situation*. Strategic decisions may play a part in both labour income differences and the way the challenges in combing entrepreneurship and childcare are perceived. Not only do female farmers appear to have lower labour income, but they also accept this and their double-bind because it furthers the family aspirations (Farmar-Bowers, 2010), and act accordingly in their gender regimes (Walby, 2004). Simultaneously, however, they do not conform to the previous gender regimes, but adapt to the current developments. Especially in the interviews it became apparent that some decisions were made on the expense of another aspect of their lives. While the first and second hypotheses are more difficult to connect to evidence at hand, it seems that the third hypothesis has a more sound foundation in both datasets.

6. Conclusion

All in all, the results from this thesis do not contradict the earlier findings or theories on female entrepreneurship or farming women positions, but rather add onto the existing knowledge on the topic. While the surrounding society is different from the agricultural community and gender inequality is perceivably stronger in farming (Sachs, 2018) this is seen as necessary to see through the family stories based on the DTS (Farmar-Bowers, 2010). Especially the latter seemed to be the case in this paper, as there were some signs of detraditionalisation of the occupation in the regression analysis and the interviews. The regressions point to the direction of a possible correlation with labour income and sex, but also that the differences had shrunk in the last 30 or so years. Moreover, much like Neergaard and Thrane (2014), this paper found that female entrepreneurs, in this case farmers, find it challenging to combine and navigate between childcare and their self-employment especially due to the fact that they work with living animals and in time constraint of four seasons. Historically, female farmers' position in the occupation has not been as strong as male farmers, even when the demographic transition seemed to strengthen the position of women in the surrounding society. In order to preserve family farming, the farming community seems to move to the direction of gender equality more gradually.

While the support of the state and family was integral to the survival of the farm, especially female farmers seemed to even harbour guilt over not spending enough time carrying through all their duties at the maximum. The guilt and stress over not being enough in the interviews would imply that the female farmers, too, experience a double-bind situation in their daily lives. It is undeniable that the production type and other employment also contributes to the situation of the interviewees, and different situations generate different answers. However, regardless of the production type and help received, female farmers consistently found it difficult to combine their family life and being self-employed. The most surprising finding from the interviews was that the farmers seemed to think that although their occupation is intertwined with weather conditions and living animals, which is very time consuming, they did seem to think that self-employed people working in different sectors had pretty much the same challenges in combining work and family life.

The findings can be reflected mainly to organising municipal day care and substitute help in a way that would encourage and support female entrepreneurship in farming. The substitute help is scarce, and offering more accessible childcare options or shaping the parental allowance to a more suitable direction for self-employed parents might help to alleviate a part of this problem. In addition the substitutes could receive more continuous education on the constantly developing environment they work in. Political decision-making in terms of family friendly policies can hinder the possibilities to be self-employed and have a functional family life. All aspects of labour markets and entrepreneurship should be equally weighted when making decisions that might affect the realisation of gender equality in different occupations.

7. Limitations and future

The greatest limitation of this thesis was time, due to time consuming method choice. However, using both quantitative and qualitative method is not a limitation of the thesis. The questionnaire was undoubtedly biased and not representative of the area, which might have affected the analysis in profound ways. Interviewing more farmers from differing production types would have allowed for more comprehensive picture of the variety their challenges. The information from the interviews is dependent on the interpretation and the possibility of misunderstandings between the interviewee and the interviewer (McGregor & Murnane, 2010). However, misunderstandings during the interviews are less likely as the used language and semi-structured approach allow a free flow of conversation

(Bryman, 2012, p.482). Regardless, misinterpretation is still possible, even with follow-up questions during the interviews.

Regarding the future research on the topic it would be interesting to see combined datasets with more possibility to build household variables in order to account for the actual size of the family. Different models may provide different results. However, if the same topic is looked into in more detail it seems justified to continue using both quantitative and qualitative approach for the reasons already mentioned in this thesis. Family farming from the demography perspective is a worthy topic for more research especially reflecting the community to the surrounding society and legislation.

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Appendices

Appendix A

Regressions by year and sex and model building phases

Phase A men

VARIABLES	(1) Men 1970	(2) Men 1980	(3) Men 1990	(4) Men 1995	(5) Men 2000	(6) Men 2005	(7) Men 2010	(8) Men 2015
field_ha	0.0395***	0.0322***	0.0323***	0.0275***	0.0159***	0.0120***	0.00910***	0.00640***
	(0.000576)	(0.000475)	(0.000514)	(0.000472)	(0.000354)	(0.000297)	(0.000250)	(0.000232)
forest_ha	0.00146***	0.00196***	0.00189***	0.00202***	0.00201***	0.00202***	0.00193***	0.00190***
	(7.97e-05)	(9.14e-05)	(0.000122)	(0.000118)	(0.000115)	(0.000123)	(0.000129)	(0.000144)
labour income share	0.0210***	0.0190***	0.00917***	0.00887***	0.00731***	0.00675***	0.00651***	0.00567***
	(0.000215)	(0.000220)	(0.000216)	(0.000223)	(0.000250)	(0.000285)	(0.000313)	(0.000376)
Constant	7.195***	7.558***	8.241***	8.440***	8.711***	8.854***	8.968***	9.090***
	(0.0132)	(0.0143)	(0.0191)	(0.0201)	(0.0228)	(0.0264)	(0.0295)	(0.0353)
Observations	8,470	7,232	7,104	5,808	4,636	4,076	3,601	3,015
R-squared	0.729	0.717	0.467	0.479	0.398	0.359	0.331	0.262

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Phase A women

VARIABLES	(1) Women 1970	(2) Women 1980	(3) Women 1990	(4) Women 1995	(5) Women 2000	(6) Women 2005	(7) Women 2010	(8) Women 2015
field_ha	0.0249***	0.0253***	0.0307***	0.0271***	0.0150***	0.0123***	0.00916***	0.00775***
	(0.000574)	(0.000524)	(0.000619)	(0.000598)	(0.000457)	(0.000394)	(0.000338)	(0.000344)
forest_ha	0.000900***	0.00143***	0.00124***	0.00129***	0.00161***	0.00160***	0.00177***	0.00157***
	(7.58e-05)	(9.45e-05)	(0.000142)	(0.000140)	(0.000141)	(0.000155)	(0.000177)	(0.000215)
labour income share	0.0117***	0.0139***	0.00935***	0.0113***	0.0118***	0.0125***	0.0130***	0.0114***
	(0.000237)	(0.000273)	(0.000292)	(0.000338)	(0.000425)	(0.000467)	(0.000542)	(0.000633)
Constant	7.752***	7.854***	8.219***	8.293***	8.457***	8.512***	8.588***	8.674***
	(0.0131)	(0.0157)	(0.0216)	(0.0244)	(0.0291)	(0.0329)	(0.0378)	(0.0460)
Observations	7,956	6,239	5,218	4,110	2,949	2,435	1,990	1,569
R-squared	0.311	0.414	0.415	0.438	0.386	0.394	0.377	0.322

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Phase B men

VARIABLES	(1) Men 1970	(2) Men 1980	(3) Men 1990	(4) Men 1995	(5) Men 2000	(6) Men 2005	(7) Men 2010	(8) Men 2015
field ha	0.0342***	0.0297***	0.0314***	0.0271***	0.0156***	0.0116***	0.00897***	0.00612***
	(0.000583)	(0.000479)	(0.000509)	(0.000473)	(0.000360)	(0.000299)	(0.000258)	(0.000242)
forest ha	0.00125***	0.00184***	0.00188***	0.00194***	0.00193***	0.00188***	0.00185***	0.00179***
	(7.64e-05)	(8.94e-05)	(0.000119)	(0.000115)	(0.000113)	(0.000119)	(0.000125)	(0.000140)
labour income share	0.0261***	0.0216***	0.0160***	0.0142***	0.0122***	0.0132***	0.0130***	0.0132***
	(0.000280)	(0.000258)	(0.000444)	(0.000427)	(0.000466)	(0.000525)	(0.000583)	(0.000682)
2.agegroup (31-50)	0.0132	-0.0436***	-0.0603***	0.0272	0.0814***	0.0910***	0.0777**	0.0206
	(0.00893)	(0.0103)	(0.0145)	(0.0176)	(0.0256)	(0.0294)	(0.0327)	(0.0383)
3.agegroup (51-62)	0.0492***	-0.0208*	-0.0548***	0.0334*	0.104***	0.0869***	0.0889***	0.0419
	(0.0110)	(0.0125)	(0.0172)	(0.0201)	(0.0271)	(0.0305)	(0.0334)	(0.0385)
4.agegroup (63+)	0.0626***	0.0105	-0.161***	0.0704	0.174***	0.141**	0.159***	0.0637
	(0.0232)	(0.0399)	(0.0566)	(0.0533)	(0.0565)	(0.0609)	(0.0517)	(0.0594)
2.co-farmers (2)	0.218***	0.182***	0.430***	0.332***	0.298***	0.404***	0.420***	0.473***
	(0.0110)	(0.00923)	(0.0223)	(0.0212)	(0.0232)	(0.0265)	(0.0296)	(0.0349)
3.co-farmers (3)	0.518***	0.354***	0.318***	0.195***	0.197***	0.247***	0.319***	0.496***
	(0.0185)	(0.0214)	(0.0422)	(0.0454)	(0.0561)	(0.0604)	(0.0629)	(0.0705)
4.co-farmers (4)	0.587***	0.247***	0.165**	0.163*	0.0402	0.298***	0.217**	0.417***
	(0.0259)	(0.0347)	(0.0733)	(0.0843)	(0.0846)	(0.0988)	(0.0912)	(0.107)
5.co-farmers (5)	0.505***	0.264**	0.206	-0.278			-0.236	
	(0.0423)	(0.119)	(0.212)	(0.199)			(0.232)	
6.co-farmers (6)	0.332***							
	(0.112)							
1.familymembers (1)	0.0546***	0.0581***	0.111***	0.169***	0.114***	0.195***	0.102**	0.170***
	(0.0150)	(0.0189)	(0.0290)	(0.0333)	(0.0433)	(0.0463)	(0.0471)	(0.0484)
2.familymembers (2)	0.0559	-0.0195	0.0323	0.109	0.0954	0.0585	0.372**	0.405***
	(0.0385)	(0.0521)	(0.0973)	(0.131)	(0.163)	(0.145)	(0.150)	(0.139)
3.familymembers (3)	0.0664	-0.259*	-0.375	-0.322		0.0985	-0.608	0.670
	(0.220)	(0.156)	(0.418)	(0.277)		(0.432)	(0.451)	(0.498)
4.familymembers (4)	-0.565*							
	(0.312)							
Constant	6.709***	7.325***	7.567***	7.853***	8.124***	8.106***	8.205***	8.276***
	(0.0209)	(0.0194)	(0.0455)	(0.0456)	(0.0514)	(0.0586)	(0.0655)	(0.0767)
Observations	8,470	7,232	7,104	5,808	4,636	4,076	3,601	3,015
R-squared	0.756	0.735	0.503	0.508	0.426	0.403	0.379	0.312

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1

Phase B women

VARIABLES	(1) Women 1970	(2) Women 1980	(3) Women 1990	(4) Women 1995	(5) Women 2000	(6) Women 2005	(7) Women 2010	(8) Women 2015
field ha	0.0239***	0.0250***	0.0292***	0.0259***	0.0140***	0.0110***	0.00814***	0.00674***
	(0.000578)	(0.000528)	(0.000586)	(0.000578)	(0.000450)	(0.000385)	(0.000341)	(0.000345)
forest ha	0.000892***	0.00142***	0.00132***	0.00129***	0.00160***	0.00144***	0.00169***	0.00160***
	(7.56e-05)	(9.48e-05)	(0.000132)	(0.000132)	(0.000134)	(0.000144)	(0.000167)	(0.000202)
labour income share	0.0103***	0.0146***	0.0189***	0.0179***	0.0178***	0.0198***	0.0196***	0.0195***
	(0.000268)	(0.000301)	(0.000445)	(0.000453)	(0.000532)	(0.000574)	(0.000656)	(0.000798)
2.agegroup (31-50)	0.0497***	-0.000488	-0.0202	0.0632***	0.0589*	0.0643*	0.0659	0.00347
	(0.00831)	(0.0121)	(0.0167)	(0.0208)	(0.0333)	(0.0365)	(0.0457)	(0.0544)
3.agegroup (51-62)	0.0635***	0.0565***	-0.0414**	0.0510**	0.107***	0.103***	0.0991**	0.0398
	(0.0102)	(0.0142)	(0.0208)	(0.0252)	(0.0362)	(0.0386)	(0.0475)	(0.0558)
4.agegroup (63+)	0.0748***	0.0266	-0.322***	0.0354	0.102	0.0784	0.0359	0.381***
	(0.0233)	(0.0369)	(0.0616)	(0.0698)	(0.0800)	(0.0911)	(0.0845)	(0.112)
2.co-farmers (2)	-0.0743***	0.0980***	0.702***	0.551***	0.534***	0.655***	0.620***	0.720***
	(0.0110)	(0.0113)	(0.0254)	(0.0245)	(0.0283)	(0.0325)	(0.0379)	(0.0475)
3.co-farmers (3)	-0.136***	0.0679***	0.655***	0.467***	0.527***	0.652***	0.809***	0.839***
	(0.0163)	(0.0242)	(0.0508)	(0.0571)	(0.0744)	(0.0773)	(0.0828)	(0.0921)
4.co-farmers (4)	-0.165***	-0.0370	0.514***	0.372***	0.567***	0.907***	0.654***	1.042***
	(0.0247)	(0.0433)	(0.0831)	(0.0913)	(0.0979)	(0.112)	(0.111)	(0.130)
5.co-farmers (5)	-0.162***	0.283**	0.623	0.776*			0.0719	
	(0.0481)	(0.111)	(0.421)	(0.407)			(0.196)	
6.co-farmers (6)	-0.451***							
	(0.141)							
1.familymembers (1)	0.0369***	0.0835***	0.157***	0.158***	0.141***	0.167***	0.155***	0.0658
	(0.0132)	(0.0185)	(0.0287)	(0.0338)	(0.0452)	(0.0480)	(0.0532)	(0.0618)
2.familymembers (2)	-0.0283	-0.00383	0.192*	0.383***	0.257	0.252*	0.415***	0.482***
	(0.0323)	(0.0442)	(0.105)	(0.103)	(0.158)	(0.135)	(0.140)	(0.165)
3.familymembers (3)	-0.00199	-0.315**	-0.224	-0.175			0.386	0.299
	(0.126)	(0.155)	(0.420)	(0.289)			(0.462)	(0.368)
4.familymembers (4)	-0.469*							
	(0.282)							
Constant	7.840***	7.734***	7.170***	7.453***	7.651***	7.553***	7.697***	7.677***
	(0.0211)	(0.0236)	(0.0464)	(0.0463)	(0.0584)	(0.0644)	(0.0754)	(0.0929)
Observations	7,956	6,239	5,218	4,110	2,949	2,435	1,990	1,569
R-squared	0.326	0.426	0.501	0.507	0.454	0.485	0.462	0.414

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Phase C men

VARIABLES	(1) Men 1970	(2) Men 1980	(3) Men 1990	(4) Men 1995	(5) Men 2000	(6) Men 2005	(7) Men 2010	(9) Men 2015
field ha	0.0297***	0.0277***	0.0308***	0.0268***	0.0156***	0.0113***	0.00856***	0.00579***
	(0.000552)	(0.000454)	(0.000505)	(0.000469)	(0.000356)	(0.000294)	(0.000252)	(0.000234)
forest ha	0.00116***	0.00165***	0.00186***	0.00191***	0.00189***	0.00188***	0.00186***	0.00174***
	(6.92e-05)	(8.37e-05)	(0.000117)	(0.000114)	(0.000111)	(0.000117)	(0.000122)	(0.000135)
labour income share	0.0237***	0.0205***	0.0199***	0.0176***	0.0157***	0.0169***	0.0151***	0.0173***
	(0.000494)	(0.000460)	(0.000757)	(0.000778)	(0.000874)	(0.00107)	(0.00122)	(0.00154)
1b.agegroup (18-30)								
2.agegroup (31-50)	-0.0362***	-0.0496***	-0.0686***	-0.0364	-0.0415	0.0464	0.127**	0.0856
	(0.0127)	(0.0169)	(0.0261)	(0.0308)	(0.0428)	(0.0509)	(0.0564)	(0.0617)
3.agegroup (51-62)	-0.0166	-0.0376**	-0.0645**	-0.0312	-0.0199	0.0354	0.120**	0.0841
	(0.0141)	(0.0183)	(0.0281)	(0.0324)	(0.0433)	(0.0508)	(0.0557)	(0.0608)
4.agegroup (63+)	-0.00283	-0.0479	-0.162***	0.00449	0.0558	0.0725	0.184***	0.0888
	(0.0233)	(0.0397)	(0.0606)	(0.0584)	(0.0651)	(0.0734)	(0.0679)	(0.0748)
1b. co-farmers (1)								
2.co-farmers (2)	0.0946***	0.133***	0.333***	0.266***	0.239***	0.260***	0.220***	0.147***
	(0.0110)	(0.00914)	(0.0248)	(0.0226)	(0.0239)	(0.0288)	(0.0335)	(0.0423)
3.co-farmers (3)	0.469***	0.349***	0.338***	0.236***	0.276***	0.306***	0.402***	0.550***
	(0.0176)	(0.0210)	(0.0440)	(0.0464)	(0.0570)	(0.0617)	(0.0651)	(0.0734)
4.co-farmers (4)	0.533***	0.242***	0.215***	0.239***	0.179**	0.414***	0.337***	0.501***
	(0.0251)	(0.0335)	(0.0744)	(0.0851)	(0.0864)	(0.0993)	(0.0930)	(0.109)
5.co-farmers (5)	0.453***	0.247**	0.282	-0.158			-0.223	
	(0.0405)	(0.112)	(0.210)	(0.198)			(0.237)	
6.co-farmers (6)	0.274***							
	(0.102)							
1.familymembers (1)	0.0388***	0.0419**	0.115***	0.197***	0.160***	0.204***	0.0600	0.152***
	(0.0144)	(0.0186)	(0.0307)	(0.0352)	(0.0466)	(0.0500)	(0.0519)	(0.0526)
2.familymembers (2)	0.0592	-0.0315	0.0523	0.163	0.223	0.123	0.241	0.301**
	(0.0362)	(0.0501)	(0.0978)	(0.131)	(0.168)	(0.152)	(0.160)	(0.147)
3.familymembers (3)	0.0769	-0.257*	-0.385	-0.212		0.151	-0.423	0.435
	(0.200)	(0.146)	(0.416)	(0.279)		(0.422)	(0.452)	(0.495)
4.familymembers (4)	-0.398							
	(0.283)							
2.head (50% of work)	-0.168***	-0.127***	0.0905***	0.0691***	0.102***	0.209***	0.341***	0.407***
	(0.0132)	(0.0138)	(0.0162)	(0.0170)	(0.0194)	(0.0266)	(0.0346)	(0.0469)
3.head (>50% of work)	0.196***	0.135***	-0.0383	-0.0212	0.0145	0.0666	0.214***	0.212***
	(0.0166)	(0.0169)	(0.0269)	(0.0300)	(0.0346)	(0.0469)	(0.0569)	(0.0743)
4.head (100% of work)	-0.355***	-0.272***	-0.288***	-0.237***	-0.215***	-0.223***	-0.0727	-0.251**
	(0.0363)	(0.0335)	(0.0396)	(0.0433)	(0.0489)	(0.0653)	(0.0800)	(0.108)
familytype	-0.000259***	-2.57e-05	-2.10e-05	-0.000386**	-0.000818***	-0.000144	0.000546	0.000584
	(7.16e-05)	(0.000104)	(0.000164)	(0.000192)	(0.000286)	(0.000323)	(0.000372)	(0.000405)
Constant	6.977***	7.425***	7.442***	7.782***	8.072***	7.969***	8.002***	8.041***
	(0.0246)	(0.0252)	(0.0560)	(0.0572)	(0.0667)	(0.0770)	(0.0851)	(0.0963)
Observations	8,470	7,232	7,104	5,808	4,636	4,076	3,601	3,015
R-squared	0.801	0.771	0.515	0.518	0.443	0.431	0.417	0.364

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Phase C women

VARIABLES	(1) Women 1970	(2) Women 1980	(3) Women 1990	(4) Women 1995	(5) Women 2000	(6) Women 2005	(7) Women 2010	(8) Women 2015
field_ha	0.0191***	0.0253***	0.0281***	0.0250***	0.0137***	0.0106***	0.00736***	0.00637***
	(0.000562)	(0.000503)	(0.000565)	(0.000540)	(0.000413)	(0.000345)	(0.000298)	(0.000301)
forest_ha	0.000762***	0.00145***	0.00138***	0.00140***	0.00162***	0.00147***	0.00161***	0.00139***
	(6.85e-05)	(8.97e-05)	(0.000126)	(0.000122)	(0.000123)	(0.000128)	(0.000145)	(0.000175)
labour income share	0.00993***	0.0217***	0.0271***	0.0301***	0.0313***	0.0342***	0.0371***	0.0376***
	(0.000460)	(0.000496)	(0.000740)	(0.000771)	(0.000903)	(0.00106)	(0.00133)	(0.00167)
2.agegroup (31-50)	0.0290**	0.0789***	0.0248	0.0122	0.0618	-0.0916	-0.00262	-0.0667
	(0.0119)	(0.0207)	(0.0343)	(0.0411)	(0.0557)	(0.0635)	(0.0710)	(0.0805)
3.agegroup (51-62)	0.0379***	0.113***	0.00537	0.00436	0.0917*	-0.0434	0.00119	-0.0564
	(0.0116)	(0.0201)	(0.0339)	(0.0405)	(0.0538)	(0.0608)	(0.0677)	(0.0767)
4.agegroup (63+)	0.0669***	0.0787**	-0.220***	-0.118	0.0629	-0.161*	-0.125	0.0930
	(0.0222)	(0.0381)	(0.0660)	(0.0742)	(0.0854)	(0.0962)	(0.0928)	(0.115)
2.co-farmers (2)	-0.0169*	0.0869***	0.414***	0.275***	0.266***	0.265***	0.216***	0.177***
	(0.0102)	(0.0109)	(0.0283)	(0.0257)	(0.0288)	(0.0340)	(0.0390)	(0.0513)
3.co-farmers (3)	-0.0942***	0.0680***	0.501***	0.373***	0.446***	0.501***	0.624***	0.507***
	(0.0155)	(0.0239)	(0.0502)	(0.0539)	(0.0692)	(0.0716)	(0.0780)	(0.0873)
4.co-farmers (4)	-0.115***	-0.000723	0.427***	0.372***	0.539***	0.798***	0.615***	0.875***
	(0.0239)	(0.0418)	(0.0805)	(0.0859)	(0.0920)	(0.102)	(0.0998)	(0.118)
5.co-farmers (5)	-0.104**	0.314***	0.535	0.654*			0.109	
	(0.0449)	(0.105)	(0.402)	(0.379)			(0.206)	
6.co-farmers (6)	-0.349***							
	(0.128)							
1.familymembers (1)	0.0218*	0.0360*	0.132***	0.201***	0.158***	0.226***	0.159***	0.129**
	(0.0129)	(0.0193)	(0.0317)	(0.0366)	(0.0478)	(0.0519)	(0.0552)	(0.0653)
2.familymembers (2)	-0.000753	-0.0855*	0.150	0.293***	0.146	0.372***	0.449***	0.432***
	(0.0306)	(0.0444)	(0.106)	(0.102)	(0.150)	(0.133)	(0.137)	(0.156)
3.familymembers (3)	-0.00806	-0.364**	-0.355	-0.154			0.318	0.534
	(0.114)	(0.148)	(0.405)	(0.276)			(0.421)	(0.339)
4.familymembers (4)	-0.382							
	(0.255)							
2.head (50% of work)	-0.339***	-0.278***	0.0466***	-0.0110	-0.0114	0.000665	-0.0254	0.00437
	(0.0109)	(0.0126)	(0.0156)	(0.0167)	(0.0194)	(0.0250)	(0.0330)	(0.0428)
3.head (>50% of work)	0.179***	-0.213***	-0.412***	-0.542***	-0.557***	-0.589***	-0.743***	-0.754***
	(0.0203)	(0.0206)	(0.0350)	(0.0371)	(0.0427)	(0.0501)	(0.0632)	(0.0812)
4.head (100% of work)	0.00668	-1.064***	-0.854***	-1.141***	-1.253***	-1.427***	-1.690***	-1.844***
	(0.0426)	(0.0488)	(0.0506)	(0.0546)	(0.0647)	(0.0802)	(0.103)	(0.129)
familytype	-3.25e-05	0.000548***	0.000252	-0.000178	9.10e-05	-0.000757**	-0.000232	-0.000239
	(6.97e-05)	(0.000121)	(0.000214)	(0.000261)	(0.000358)	(0.000386)	(0.000427)	(0.000471)
Constant	7.914***	7.453***	7.049***	7.259***	7.339***	7.491***	7.492***	7.580***
	(0.0244)	(0.0294)	(0.0555)	(0.0577)	(0.0721)	(0.0815)	(0.0897)	(0.107)
Observations	7,956	6,239	5,218	4,110	2,949	2,435	1,990	1,569
R-squared	0.456	0.491	0.546	0.576	0.544	0.592	0.595	0.563

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Phase D (not robust) men

VARIABLES	(1) Men 1970	(2) Men 1980	(3) Men 1990	(4) Men 1995	(5) Men 2000	(7) Men 2005	(9) Men 2010	(10) Men 2015
field_ha	0.0577***	0.0409***	0.0324***	0.0265***	0.0153***	0.0118***	0.00600***	0.00290***
	(0.00102)	(0.000982)	(0.00105)	(0.00104)	(0.000772)	(0.000899)	(0.000615)	(0.000416)
forest_ha	0.000991***	0.00263***	0.00229***	0.00214***	0.00163***	0.00169***	0.00160***	0.00181***
	(0.000120)	(0.000198)	(0.000245)	(0.000282)	(0.000258)	(0.000281)	(0.000301)	(0.000476)
2.agegroup (31-50)	-0.0136	0.00137	-0.0300	-0.00534	0.0362	0.140***	0.193***	0.140**
	(0.0134)	(0.0181)	(0.0271)	(0.0321)	(0.0440)	(0.0515)	(0.0566)	(0.0614)
3.agegroup (51-62)	-0.0340**	0.0163	-0.0327	-0.00615	0.0443	0.113**	0.195***	0.174***
	(0.0148)	(0.0195)	(0.0291)	(0.0337)	(0.0446)	(0.0514)	(0.0559)	(0.0606)
4.agegroup (63+)	-0.0337	0.00602	-0.144**	-0.0282	0.0933	0.116	0.245***	0.166**
	(0.0246)	(0.0424)	(0.0628)	(0.0604)	(0.0668)	(0.0742)	(0.0681)	(0.0745)
2.co-farmers (2)	0.0395***	0.0389***	-0.00452	0.0594***	0.0869***	0.129***	0.126***	0.0626
	(0.0116)	(0.00959)	(0.0217)	(0.0212)	(0.0225)	(0.0277)	(0.0324)	(0.0412)
3.co-farmers (3)	0.150***	0.0486**	-0.233***	-0.146***	-0.00908	0.0774	0.355***	0.616***
	(0.0183)	(0.0224)	(0.0405)	(0.0454)	(0.0564)	(0.0624)	(0.0670)	(0.0749)
4.co-farmers (4)	-0.0507**	-0.248***	-0.472***	-0.249***	-0.271***	0.0224	0.283***	0.666***
	(0.0254)	(0.0353)	(0.0732)	(0.0859)	(0.0850)	(0.103)	(0.0996)	(0.115)
5.co-farmers (5)	-0.319***	-0.449***	-0.544**	-0.849***			-0.489**	
	(0.0413)	(0.120)	(0.216)	(0.203)			(0.238)	
6.co-farmers (6)	-0.446***							
	(0.107)							
1.familymembers (1)	0.0529***	0.0503**	0.0958***	0.165***	0.143***	0.183***	0.0293	0.109**
	(0.0152)	(0.0199)	(0.0318)	(0.0365)	(0.0476)	(0.0504)	(0.0521)	(0.0525)
2.familymembers (2)	0.0972**	-0.00971	-0.0380	0.176	0.118	0.0440	0.154	0.278*
	(0.0383)	(0.0536)	(0.101)	(0.136)	(0.171)	(0.154)	(0.160)	(0.147)
3.familymembers (3)	0.0200	-0.0197	-0.360	-0.124		-0.00736	-0.854*	0.335
	(0.211)	(0.156)	(0.431)	(0.291)		(0.425)	(0.452)	(0.492)
4.familymembers (4)	-0.228							
	(0.299)							
2.head (50% of work)	-0.0378*	0.0281	0.333***	0.210***	0.195***	0.500***	0.526***	0.614***
	(0.0195)	(0.0205)	(0.0290)	(0.0323)	(0.0363)	(0.0433)	(0.0463)	(0.0561)
3.head (>50% of work)	1.091***	0.985***	0.653***	0.609***	0.594***	0.794***	0.806***	0.913***
	(0.0147)	(0.0175)	(0.0328)	(0.0369)	(0.0402)	(0.0499)	(0.0521)	(0.0625)
4.head (100% of work)	0.979***	0.862***	0.406***	0.435***	0.368***	0.523***	0.574***	0.564***
	(0.0355)	(0.0347)	(0.0354)	(0.0380)	(0.0408)	(0.0490)	(0.0521)	(0.0631)
familytype	-0.000214***	5.23e-05	0.000223	-0.000282	-0.000548*	0.000142	0.000840**	0.000889**
	(7.56e-05)	(0.000111)	(0.000170)	(0.000200)	(0.000294)	(0.000327)	(0.000373)	(0.000403)
1b.head#co.field_ha	0	0	0	0	0	0	0	0
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
2.head#c.field_ha	0.0271***	0.00876***	-0.00439***	-0.000886	-0.00115	-0.00325***	0.00114	0.00293***
	(0.00291)	(0.00171)	(0.00134)	(0.00129)	(0.000977)	(0.000982)	(0.000711)	(0.000568)
3.head#c.field_ha	-0.0299***	-0.0164***	-0.00656***	-0.00258*	-0.00255**	-0.00252**	0.000484	0.00150**
	(0.00122)	(0.00114)	(0.00157)	(0.00151)	(0.00109)	(0.00116)	(0.000852)	(0.000678)
4.head#c.field_ha	-0.00579	0.00302	0.0115***	0.00740***	0.00547***	0.00540***	0.00743***	0.00836***
	(0.00377)	(0.00277)	(0.00161)	(0.00147)	(0.00105)	(0.00107)	(0.000787)	(0.000670)
1b.head#co.forest_ha	0	0	0	0	0	0	0	0
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
2.head#c.forest_ha	0.00175***	0.00125***	-0.000430	-1.18e-05	0.000636*	0.000189	0.000203	-0.000263
	(0.000424)	(0.000386)	(0.000323)	(0.000348)	(0.000336)	(0.000350)	(0.000381)	(0.000540)
3.head#c.forest_ha	0.000422***	-0.00118***	-0.000791**	-0.000991***	-0.000549*	-0.000622*	-0.000185	-0.000676
	(0.000153)	(0.000224)	(0.000350)	(0.000358)	(0.000327)	(0.000371)	(0.000412)	(0.000583)
4.head#c.forest_ha	0.00197***	0.000935	-0.000374	0.000551	0.00110***	0.000758**	0.000366	-1.93e-05
	(0.000703)	(0.000669)	(0.000367)	(0.000386)	(0.000358)	(0.000359)	(0.000361)	(0.000514)
Constant	7.751***	8.057***	8.536***	8.702***	8.849***	8.664***	8.661***	8.720***
	(0.0182)	(0.0220)	(0.0393)	(0.0442)	(0.0548)	(0.0676)	(0.0729)	(0.0834)
Observations	8,470	7,232	7,104	5,808	4,636	4,076	3,601	3,015
R-squared	0.778	0.738	0.481	0.484	0.420	0.423	0.416	0.372

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Phase D (not robust) women

VARIABLES	(1) Women 1970	(2) Women 1980	(3) Women 1990	(4) Women 1995	(5) Women 2000	(7) Women 2005	(8) Women 2010	(9) Women 2010
field_ha	0.00832***	0.0118***	0.0237***	0.0203***	0.0110***	0.00849***	0.00578***	0.00481***
	(0.000475)	(0.000546)	(0.000923)	(0.000975)	(0.000738)	(0.000742)	(0.000570)	(0.000517)
forest_ha	0.000347***	0.000419***	0.000996***	0.000901***	0.00100***	0.000768***	0.00131***	0.000580*
	(6.40e-05)	(9.89e-05)	(0.000211)	(0.000223)	(0.000203)	(0.000224)	(0.000256)	(0.000336)
2.agegroup (31-50)	0.0246**	0.132***	0.0148	0.0501	0.0932	-0.0278	0.0612	0.0654
	(0.0108)	(0.0208)	(0.0382)	(0.0475)	(0.0652)	(0.0751)	(0.0828)	(0.0916)
3.agegroup (51-62)	0.0310***	0.152***	0.00962	0.0762	0.150**	0.0232	0.0887	0.0513
	(0.0106)	(0.0203)	(0.0377)	(0.0468)	(0.0630)	(0.0719)	(0.0790)	(0.0873)
4.agegroup (63+)	0.0708***	0.129***	-0.265***	-0.0286	0.127	-0.0777	-0.0185	0.209
	(0.0202)	(0.0385)	(0.0733)	(0.0859)	(0.100)	(0.114)	(0.109)	(0.131)
2.co-farmers (2)	-0.0361***	0.0209*	0.168***	0.130***	0.145***	0.207***	0.191***	0.117**
	(0.00923)	(0.0109)	(0.0305)	(0.0294)	(0.0335)	(0.0402)	(0.0456)	(0.0583)
3.co-farmers (3)	-0.159***	-0.128***	0.0619	0.0439	0.125	0.321***	0.624***	0.571***
	(0.0138)	(0.0236)	(0.0541)	(0.0617)	(0.0801)	(0.0846)	(0.0920)	(0.101)
4.co-farmers (4)	-0.204***	-0.230***	-0.192**	-0.143	0.118	0.639***	0.451***	0.576***
	(0.0211)	(0.0416)	(0.0873)	(0.0985)	(0.107)	(0.123)	(0.120)	(0.134)
5.co-farmers (5)	-0.180***	0.146	-0.126	0.530			-0.350	
	(0.0405)	(0.106)	(0.446)	(0.439)			(0.240)	
6.co-farmers (6)	-0.400***							
	(0.116)							
1.familymembers (1)	-0.00667	0.00490	0.132***	0.145***	0.119**	0.214***	0.106*	0.0516
	(0.0117)	(0.0195)	(0.0355)	(0.0429)	(0.0564)	(0.0618)	(0.0645)	(0.0747)
2.familymembers (2)	-0.0857***	-0.0729	0.196*	0.262**	0.193	0.357**	0.264*	0.301*
	(0.0279)	(0.0449)	(0.117)	(0.118)	(0.177)	(0.158)	(0.161)	(0.178)
3.familymembers (3)	-0.0390	-0.425***	-0.390	0.0179			0.245	0.256
	(0.104)	(0.149)	(0.451)	(0.322)			(0.491)	(0.386)
4.familymembers (4)	-0.217							
	(0.232)							
2.head (50% of work)	-0.652***	-0.473***	0.235***	0.170***	0.201***	0.423***	0.552***	0.583***
	(0.0138)	(0.0171)	(0.0282)	(0.0322)	(0.0363)	(0.0411)	(0.0460)	(0.0561)
3.head (>50% of work)	0.157***	0.0544**	0.275***	0.297***	0.315***	0.468***	0.495***	0.497***
	(0.0187)	(0.0223)	(0.0452)	(0.0506)	(0.0617)	(0.0703)	(0.0767)	(0.0899)
4.head (100% of work)	-0.129**	-0.566***	0.344***	0.270***	0.202***	0.322***	0.460***	0.338***
	(0.0553)	(0.0771)	(0.0457)	(0.0517)	(0.0617)	(0.0730)	(0.0790)	(0.0902)
familytype	-1.32e-06	0.000734***	0.000174	-0.000116	0.000212	-0.000681	5.48e-05	0.000304
	(6.34e-05)	(0.000122)	(0.000238)	(0.000303)	(0.000420)	(0.000457)	(0.000499)	(0.000536)
1b.head#co.field_ha	0	0	0	0	0	0	0	0
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
2.head#c.field_ha	0.0760***	0.0370***	0.00600***	0.00671***	0.00329***	0.00167*	0.00215***	0.00185***
	(0.00253)	(0.00146)	(0.00133)	(0.00132)	(0.00101)	(0.000889)	(0.000720)	(0.000695)
3.head#c.field_ha	0.0325***	0.0334***	0.0156***	0.0141***	0.00515***	0.00430**	0.00546***	0.00331**
	(0.00196)	(0.00205)	(0.00318)	(0.00293)	(0.00181)	(0.00171)	(0.00162)	(0.00138)
4.head#c.field_ha	0.0879***	0.136***	0.0187***	0.0197***	0.0185***	0.0171***	0.0137***	0.00867***
	(0.00891)	(0.0178)	(0.00225)	(0.00244)	(0.00221)	(0.00228)	(0.00210)	(0.00167)
1b.head#co.forest_ha	0	0	0	0	0	0	0	0
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
2.head#c.forest_ha	0.000994***	0.00306***	0.000557*	0.000972***	0.00126***	0.00111***	0.000418	0.000920**
	(0.000353)	(0.000334)	(0.000314)	(0.000321)	(0.000318)	(0.000318)	(0.000358)	(0.000432)
3.head#c.forest_ha	0.00203***	0.00168***	0.00154**	-0.000412	0.00110	0.00102	-1.69e-05	0.00166*
	(0.000309)	(0.000315)	(0.000709)	(0.000628)	(0.000718)	(0.000693)	(0.000738)	(0.000864)
4.head#c.forest_ha	0.00537***	0.00783***	-0.000506	0.000167	0.000132	0.00189***	0.00125	0.00235***
	(0.00154)	(0.00284)	(0.000420)	(0.000421)	(0.000465)	(0.000713)	(0.000789)	(0.000871)
Constant	8.403***	8.447***	8.428***	8.614***	8.711***	8.757***	8.690***	8.791***
	(0.0140)	(0.0232)	(0.0500)	(0.0589)	(0.0756)	(0.0894)	(0.0984)	(0.112)
Observations	7,956	6,239	5,218	4,110	2,949	2,435	1,990	1,569
R-squared	0.549	0.481	0.441	0.433	0.378	0.435	0.451	0.437

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Heteroskedasticity using Breuch-Pagan test, by year and phases of model building.

Year	M/F	A	Prob > chi2 A	B	Prob > chi2 B	C	Prob > chi 2 C	D	Prob > chi2 D	D, robust	Prob > chi2 D, robust
1970	M	452.54	0.0000	9	0.0027	300.75	0.0000	143.05	0.0000	-	-
	F	1132.7	0.0000	894.67	0.0000	48.01	0.0000	528.58	0.0000	-	-
1980	M	170.82	0.0000	55.87	0.0000	7.77	0.0053	3.02	0.0824	-	-
	F	1144.15	0.0000	1006.99	0.0000	709.19	0.0000	266.56	0.0000	-	-
1990	M	73.36	0.0000	16.85	0.0000	22.21	0.0000	10.74	0.002	-	-
	F	264.97	0.0000	25.14	0.0000	90.89	0.0000	2.51	0.1128	-	-
1995	M	16.3	0.0001	30.72	0.0000	19.26	0.0000	71.93	0.0000	-	-
	F	14.03	0.0002	25,94	0.0000	0.28	0.596	101.93	0.0000	-	-
2000	M	9.3	0,0023	21.2	0.0000	10.87	0.001	43.77	0.0000	-	-
	F	1.45	0.2278	70.91	0.0000	2.39	0.1219	181.03	0.0000	-	-
2005	M	33.48	0.0000	1.09	0.2975	11.53	0.0007	17.89	0.0000	-	-
	F	6.39	0.0115	24.28	0.0000	0.27	0.6056	136.06	0.0000	-	-
2010	M	0.28	0.5973	4.21	0.0403	0.06	0.8145	39.77	0.0000	-	-
	F	14.22	0.0002	6.19	0.0129	1.95	0.1625	72,43	0.0000	-	-
2015	M	95.64	0.0000	2.12	01456	11.94	0.0005	0,32	0.5737	-	-
	F	0.01	0.9043	37.01	0.0000	0.61	0.4333	60,05	0.0000	-	-

Heteroskedasticity using White's test, by year and phases of model building

Year	M/F	A	Prob > chi2 A	B	Prob > chi2 B	C	Prob > chi2 C	D	Prob > chi2	D, robust	Prob > chi2 D , robust
1970	M	5465,8	0.0000	4771,11	0.0000	4382,05	0.0000	6512,14	0.0000	6512,14	0.0000
	F	2396,19	0.0000	2349,21	0.0000	1809,73	0.0000	2365,18	0.0000	2365,18	0.0000
1980	M	4101,71	0.0000	3969,86	0.0000	3913,93	0.0000	3299,47	0.0000	3299,47	0.0000
	F	2875,25	0.0000	2952,51	0.0000	3219	0.0000	1732,9	0.0000	1732,9	0.0000
1990	M	3295,07	0.0000	3217,77	0.0000	3155,66	0.0000	3781,98	0.0000	3781,98	0.0000
	F	2244,13	0.0000	2164,43	0.0000	2215,04	0.0000	1618,13	0.0000	1618,13	0.0000
1995	M	1533,1	0.0000	1490,75	0.0000	1506,83	0.0000	1394,48	0.0000	1393,48	0.0000
	F	1579,3	0.0000	1404,13	0.0000	1345,66	0.0000	952,43	0.0000	952,43	0.0000
2000	M	1314,15	0.0000	1335,62	0.0000	1342,62	0.0000	1362,45	0.0000	1362,45	0.0000
	F	864,74	0.0000	816,43	0.0000	802,47	0.0000	625,67	0.0000	625,67	0.0000
2005	M	1475,38	0.0000	1384,48	0.0000	1428,06	0.0000	1113,17	0.0000	1113,17	0.0000
	F	751,88	0.0000	698,36	0.0000	760,92	0.0000	602,45	0.0000	602,45	0.0000
2010	M	1026,99	0.0000	1004,05	0.0000	1052,47	0.0000	1005,28	0.0000	1005,28	0.0000
	F	602,8	0.0000	541,47	0.0000	529,64	0.0000	488,87	0.0000	488,87	0.0000
2015	M	1121,34	0.0000	999,32	0.0000	969,69	0.0000	1336,29	0.0000	1336,29	0.0000
	F	358,62	0.0000	394,85	0.0000	380,62	0.0000	379,01	0.0000	379,01	0.0000

Jarque-Bera test by year and phases of model building

Year	M/F	A, e	A, res	B, e	B, res	C, e	C, res	D, e	D, res	D robust, e	D robust, res
1970	M	2912	6,70E+04	663,7	2,20E+04	18,12	1,70E+04	159,1	1,10E+05	159,1	1,10E+05
	F	1,20E+05	1,00E+04	8,20E+04	7712	9817	1,70E+04	1,10E+05	6,60E+04	1,10E+05	6,60E+04
1980	M	2018	2,60E+04	989	2,00E+04	273,7	1,60E+04	160,6	3,60E+04	160,6	3,60E+04
	F	2,20E+04	8649	1,90E+04	8821	1,20E+04	1,00E+04	3,70E+04	2,30E+05	3,70E+04	2,30E+05
1990	M	8305	9284	4932	8833	4091	9599	7325	7500	7325	7500
	F	1,30E+04	7671	3880	5561	2182	5657	5345	6179	5345	6179
1995	M	5504	1,00E+04	4418	1,10E+04	4122	1,30E+04	4881	8149	4881	8149
	F	4462	9751	1549	9881	934,3	1,10E+04	6547	5950	6547	5950
2000	M	9015	5887	7092	6438	5976	7200	7793	5,73E+03	7739	5734
	F	2040	5934	661,3	6276	536,6	7116	1562	4419	1562	4419
2005	M	2,40E+04	3499	1,10E+04	3778	8701	4790	5720	3539	5720	3539
	F	2761	3501	702,1	3636	564,2	4405	614,8	4580	614,8	4580
2010	M	1,60E+04	1797	8673	1981	5115	2,70E+03	4317	1998	4317	1998
	F	2906	1654	610,5	1931	373,4	2496	443,6	2854	443,6	2854
2015	M	3,00E+04	1179	7832	1149	4118	1718	2068	1577	2068	2068
	F	1896	1298	339,8	1268	199,2	1563	194	2995	194	2995

Omitted variables by year and phases of model building.

Year	M/F	A	Prob > F, A	B	Prob > F, B	C	Prob > F, C	D	Prob > F, D	D, robust	Prob > F, D robust
1970	M	3064,87	0.0000	2589,49	0.0000	2116,48	0.0000	1951,33	0.0000	1951,33	0.0000
	F	93,8	0.0000	84,39	0.0000	489,31	0.0000	752,99	0.0000	725,99	0.0000
1980	M	2058,7	0.0000	1848,51	0.0000	1809,98	0.0000	1408,52	0.0000	1408,52	0.0000
	F	273,07	0.0000	254,97	0.0000	327,85	0.0000	678,2	0.0000	678,2	0.0000
1990	M	829,52	0.0000	645,87	0.0000	648,47	0.0000	1059,19	0.0000	1056,19	0.0000
	F	487,04	0.0000	273,65	0.0000	300,91	0.0000	418,75	0.0000	418,75	0.0000
1995	M	620.29	0.0000	497,89	0.0000	510,9	0.0000	902,09	0.0000	902,09	0.0000
	F	469,61	0.0000	233,16	0.0000	272,37	0.0000	440,29	0.0000	440,29	0.0000
2000	M	407,31	0.0000	323,97	0.0000	353,08	0.0000	639,11	0.0000	639,11	0.0000
	F	324,04	0.0000	138,71	0.0000	160,82	0.0000	253,12	0.0000	253,12	0.0000
2005	M	330,83	0.0000	261,42	0.0000	304,65	0.0000	458,61	0.0000	458,61	0.0000
	F	255,61	0.0000	97,28	0.0000	105,12	0.0000	140,22	0.0000	140,22	0.0000
2010	M	296,03	0.0000	228,97	0.0000	240,49	0.0000	307,61	0.0000	307,61	0.0000

	F	222,34	0	95,53	0	69,48	0	108,2	0	108,2	0
2015	M	271,32	0	194,49	0	206,48	0	225,9	0	225,9	0
	F	102,49	0	39,14	0	32,89	0	56,48	0	56,48	0

Multicollinearity by year and phases of model building

Year	M/F	Mean vif, A	Mean vif, B	Mean vif, C	Mean vif, D	Mean vif, D robust	Mean vif, pooled OLS
1970	M	1,24	1,45	2,63	3,15	3,15	
	F	1,41	1,39	2,17	2,61	2,61	
1980	M	1,18	1,32	2,63	3,75	3,75	
	F	1,28	1,38	2,39	2,82	2,82	
1990	M	1,13	1,87	4,01	4,39	4,39	
	F	1,13	1,56	3,43	3,53	3,53	
1995	M	1,11	1,82	4,15	4,9	4,9	
	F	1,11	1,49	3,37	3,57	3,37	
2000	M	1,08	2,25	5,24	5,35	5,35	
	F	1,06	1,84	3,88	3,77	3,77	
2005	M	1,07	2,19	6,1	6,31	6,31	
	F	1,05	1,88	4,72	4,42	4,42	
2010	M	1,08	2,18	6,67	5,68	5,68	
	F	1,05	1,85	4,59	3,91	3,91	
2015	M	1,09	2,22	7,57	6,05	6,05	
	F	1,06	1,89	4,8	3,78	3,78	
Pooled OLS							2.14

Ovtest Pooled OLS

```
. ovtest

Ramsey RESET test using powers of the fitted values of lnlincome
       Ho:  model has no omitted variables
                 F(3, 76371) =    3992.23
                    Prob > F =      0.0000
```

Sktest example for male and female farmers 2015, model C and Pooled OLS

```
. sktest lnlincome field_ha forest_ha s_lincome agegroup num_farmers fm head sumfa
> m if d_status == 0 & d_sex == 1 & forestfarm == 1 & s_lincome <=100

                    Skewness/Kurtosis tests for Normality
                                                              ------ joint ------
    Variable |        Obs  Pr(Skewness)  Pr(Kurtosis) adj chi2(2)    Prob>chi2
-------------+-------------------------------------------------------------------
   lnlincome |      1,569      0.0000         0.0243          .          0.0000
    field_ha |      1,569      0.0000         0.0000          .          0.0000
   forest_ha |      1,569      0.0000         0.0000          .          0.0000
   s_lincome |      1,569      0.0000         0.0077          .          0.0000
    agegroup |      1,569      0.7446         0.0115       6.46          0.0395
 num_farmers |      1,569      0.0000         0.0000          .          0.0000
          fm |      1,569      0.0000         0.0000          .               .
        head |      1,569      0.0000         0.5181          .          0.0000
      sumfam |      1,569      0.0000         0.0000          .          0.0000
```

```
. sktest lnlincome field_ha forest_ha s_lincome agegroup num_farmers fm head sumfa
> m if d_status == 0 & d_sex == 0 & forestfarm == 1 & s_lincome <=100

                    Skewness/Kurtosis tests for Normality
                                                              ------ joint ------
    Variable |        Obs  Pr(Skewness)  Pr(Kurtosis) adj chi2(2)    Prob>chi2
-------------+-------------------------------------------------------------------
   lnlincome |      3,015      0.0000         0.0000          .          0.0000
    field_ha |      3,015      0.0000         0.0000          .               .
   forest_ha |      3,015      0.0000         0.0000          .               .
   s_lincome |      3,015      0.0000              .          .               .
    agegroup |      3,015      0.0376         0.0013      13.96          0.0009
 num_farmers |      3,015      0.0000         0.0000          .          0.0000
          fm |      3,015      0.0000         0.0000          .               .
        head |      3,015      0.0000         0.0000          .               .
      sumfam |      3,015      0.0000         0.0000          .               .
```

```
. sktest lnlincome field_ha forest_ha sex agegroup head num_farmers familymembers sum_famil
> ytype year if status == 0 & forestfarm == 1 & s_lincome <=100
```

Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	joint adj chi2(2)	joint Prob>chi2
lnlincome	76,408	0.0000	0.0000	.	.
field_ha	76,408	0.0000	0.0000	.	.
forest_ha	76,408	0.0000	0.0000	.	.
sex	76,408	0.0000	.	.	.
agegroup	76,408	0.0000	0.0000	.	0.0000
head	76,408	0.0000	0.0000	.	.
num_farmers	76,408	0.0000	0.0000	.	.
familymemb~s	76,408	0.0000	0.0000	.	.
sum_family~e	76,408	0.0000	0.0000	.	.
year	76,408	0.0000	0.0000	.	.

Pooled OLS

```
. test 3.agegroup==4.agegroup

 ( 1)  3.agegroup - 4.agegroup = 0

       F(  1, 11659) =    0.64
            Prob > F =    0.4226

. test 1.num_farmers==2.num_farmers

 ( 1)  1b.num_farmers - 2.num_farmers = 0

       F(  1, 11659) =  159.93
            Prob > F =    0.0000
```

Appendix B

1. Age
2. I got the farm via
    a. succession (buying it from the parents)
    b. free market purchase
    c. I hire the estate
    d. I took over the farm after becoming a widow(er)
    e. I took over the farm after a divorce
3. My farm is
    a. a crop farm
    b. an animal farm
    c. gardening produce
    d. forest farming
    e. tourist farm
    f. service or other
4. My farm has farming land (answer in hectares)
5. My farm as forest (answer in hectares)
6. I've had the farm for
    a. less than 5 years
    b. 5-10 years
    c. 11-20 years
    d. over 20 years
7. I have the main responsibility of these tasks at the farm (can choose multiple answers)
    a. taking care of the animals
    b. the field work
    c. purchases
    d. administrative work
    e. management
8. I have a partner (a spouse, a co-owner of sorts, a relative) who takes care of the farming work with me
    a. yes
    b. no
9. I have children
    a. yes
    b. no
10. The number of children under 7 (answer in whole numbers)
11. The number of children over 7, even adult children are counted here
12. My children under 7 years of age get childcare from (can choose multiple answers)
    a. the day care
    b. grandparents
    c. temporary solutions
13. My partner has the main responsibility of these tasks at the farm (can choose multiple answers)
    a. taking care of the animals
    b. the field work
    c. purchases
    d. administrative work
    e. management

f. none of these

14. I have the main responsibility of these housework tasks
    a. cooking
    b. laundry
    c. cleaning
    d. children's hobbies
    e. childcare (putting kids to sleep etc)
    f. outside work (like clearing snow etc)
    g. home maintenance (fixing things etc)
    h. dishes
    i. shopping (food etc)
    j. car/farm machinery maintenance
15. My partner has the main responsibility of these housework tasks (can choose multiple answers)
    a. cooking
    b. laundry
    c. cleaning
    d. children's hobbies
    e. childcare (putting kids to sleep etc)
    f. outside work (like clearing snow etc)
    g. home maintenance (fixing things etc)
    h. dishes
    i. shopping (food etc)
    j. car/farm machinery maintenance
    k. none of the above
16. I find that housework is a burdening me
    a. never
    b. sometimes
    c. quite often
    d. all the time
17. How many days off (holiday days) you have in the year when you are not doing any farm or housework (answer in whole numbers)
18. My holidays are
    a. the days that I get by right from the substitute service
    b. days I have purchased from the substitute service
    c. other [open answer]
19. I am
    a. female
    b. male
    c. other

This part is only visible if they answered female in the question 19

20. I have faced discriminatory attitudes towards me as an entrepreneur
    a. never
    b. a couple of times in my time as an entrepreneur
    c. yes, multiple times in my time as an entrepreneur
    d. yes, all the time
21. These attitudes manifest themselves as
    a. people ask for the master of the house
    b. people call me a little girl (note: Finnish term "tytötellä")

c. people think I am unable to do my work
d. other [open answer]

22. If they answered they have children: I did these farm tasks during my parental leave (can choose multiple answers)
    a. taking care of the animals
    b. the field work
    c. purchases
    d. administrative work
    e. management
23. If they answered they have children: I did the tasks because
    a. I have a need to run my business
    b. I did not get enough help during my parental leave
    c. the help I got was not competent or they needed help

24. I feel like female farmers overall have a harder time to connect the entrepreneurial work and housework
    a. yes
    b. no
    c. I don't know
25. If yes, why [open answer]
26. I personally feel like I as a female farmer have a harder time to connect the entrepreneurial work and housework
    a. yes
    b. no
    c. I don't know
27. If yes, why [open answer]
28. If yes to children: I get enough support from outside of the home to take care of children
    a. yes
    b. no
    c. I don't know

This part only if they answered male in the question 19

29. I female farmers overall have a harder time to connect the entrepreneurial work and housework
    a. yes
    b. no
    c. I don't know
30. If yes, why [open answer]

Final questions for everybody. Also this is where the answer 'other' question 19 directs to:

31. I network with other farmers
    a. via organisations (examples of such organisations)
    b. I am politically active (responsibilities in a political party etc)
    c. I spend my free time with other entrepreneurs (bands, choirs that are for farmers/entrepreneurs etc)
    d. other [open answer]
32. If there is a need for interviews this is the email to reach me [open answer]

Appendix C

BEFORE THE INTERVIEW:

- Ask if they are aware of the use of the data and that the interview is being recorded.
- Ask them if they want to be sent their answers to make sure they have been quoted correctly.
- Ask them if they are ready.
- Tell them that you're about to start recording.

Start recording.

1. **Can you tell something about you, your family and your farm?**
- Note:
- if they mention having a spouse, a co-farmer of some kind or family members who work with them
- if they have young children
- the basic info needed for the interview description
2. **Can you tell something about your daily life?**
- Note if they already say that they are busy
- Remember what kind of things they list ere
- Labour division?
3. **What kind of challenges arise in your daily life?**
4. **Do you think these challenges are same for male and female farmers?**
5. **Do you think these challenges are the same for all entrepreneurs or are they more specific for farmers?**
6. **How do you perceive your need of help and do you get enough help with combining entrepreneurship with childcare and housework?**
7. **What kind of help do you receive from the state or municipality to combine entrepreneurship and childcare/house work?**
    a. How does it work for you?
8. **Is there anything that could be done on municipality, state or even EU level that might help you**
9. **Do you personally believe that EU membership has affected the number of female farmers and if yes why?**

If these did not come up:

1. How old are you?
2. What kind of educational background do you have?
3. Size of the farm?
4. Production type?
5. Are you the head farmer)?

Appendix D

LUNDS UNIVERSITET

Form of consent
Suostumuslomake

Lotta-Kaisa Mustonen
mustonenlotta@gmail.com

Master Thesis / Maisterintutkielma

Who am I / Kuka olen
I am a first year master student in Lund university
Olen Lundin yliopistossa opiskeleva ensimmäisen vuoden maisteriopiskelija
What it is about / Mitä tutkimus koskee
The thesis will quantitatively look into the structural changes in farmer population in Northern Savonia, with a special interest on the labour income on a yearly basis and in relation to sex of the farmer. The qualitative part focuses on the masculinity of the profession and the possible difficulties in combining the primary childcare responsibility and being an entrepreneur, especially reflecting this to female head farmers.
Tutkimuksessa kiinnitetään huomiota määrällisiin muutoksiin maanviljelijäpopulaatiossa Pohjois-Savossa, kiinittäen erityisesti huomiota työtuloihin vuosittain ja sukupuoleen liittyen. Laadullisessa osassa keskitytään ammatin maskuliinisuuteen ja mahdollisiin vaikeuksiin yhdistää kodinhoito ja yrittäminen, keskittyen pääasiallisten naisviljelijöiden asemaan.
What will happen to the information you provide / Mitä annetulle informaatiolle tapahtuu
The information will be used as the qualitative data for my first year master thesis.
Haastatteluja käytetään laadullisena datana ensimäisen vuoden maisteritutkielmaani.
Confidentiality and anonymity / Luottamuksellisuus ja anonymiteetti
All information is handled in confidentiality and we only publish appropriate information that has been agreed beforehand with the participant. All interviews are anonymous to ensure the safety and confidentiality of the interviews. You may withdraw your agreement at any time within a week of the interviews.
Kaikki taustatieto on luottamuksellista, ja julkaisemme vain sovitut taustatiedot haastateltavasta. Kaikki haastateltavat ovat anonyymejä, turvallisuuden ja luottamuksellisuuden takaamiseksi. Voitte peruuttaa suostumuksenne haastattelun käyttämiseen viikon sisällä haastattelusta.

LUNDS UNIVERSITET

Form of consent
Suostumuslomake

Lotta-Kaisa Mustonen
mustonenlotta@gmail.com

Master Thesis / Maisterintutkielma

☐ I agree to be interviewed on the topic of this thesis. / Hyväksyn, että minua haastatellaan tutkielman aiheesta.

☐ I agree to the interview being audio recorded. / Hyväksyn, että haastattelu nauhoitetaan.

☐ I am aware that I can withdraw my contribution at any time until one week after the interview. / Olen tietoinen siitä, että voin peruuttaa suostumukseni haastattelun käyttämiseen viikon sisällä haastattelusta.

☐ I am aware that I have the right to know with parts of my interview will be used and by request they will be sent to me for approval. / Ymmärrän että minulla on oikeus saada tietää mitä haastattelun osia tutkimuksessa käytetään ja osat lähetetään minulle halutessani tarkastettavaksi.

☐ I understand that Lotta-Kaisa Mustonen has the right to use the data provided in the interview in the furtherance of academic education and research unless I specifically request them not to do so. / Ymmärrän, että Lotta-Kaisa Mustosella on oikeus käyttää haastatteluista saamaansa tietoa akateemisen koulutuksen ja tutkimuksen edistämiseen, ellen erityisesti kiellä heitä tekemästä sitä.

☐ I understand that the data will be handled with care, the information will be anonymised, and that my name will not be used in any public or printed forum arising from this research activity and its subsequent presentations and publications. / Ymmärrän, että kerätty tieto käsitellään huolellisesti, tieto pidetään anonyymina ja eikä nimeäni tulla käyttämään missään julkisessa yhteydessä, liittyen tutkimuksen sisältöön, maisterintutkielman esittämiseen tai julkaisuun

- ☐ I am aware that I can contact Annika Elwert (the supervisor of this thesis) as an independent party on matters arising from the research process. / Olen tietoinen, että voin olla yhteydessä Annika Elwertiin (tutkielmani ohjaaja) koskien tutkimusprosessiin liittyvistä asioista. (annika.elwert@ekh.lu.se

On this basis, I give my consent to participate in the research study.
Näillä perustein, annan suostumukseni tutkimukseen osallistumisesta.

Name: _____

Signature: _____

Date: _____