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Abstract

This thesis investigates the factors underlying farm business development in Sweden, and the economic and social implications related to different development strategies. The thesis consists of four papers. Paper I uncovers the values that underlie farmers' strategic choices for business development. The results indicated that a mixed set of use- and non-use values guide choices for farm strategic orientation. Paper II examines the relationship between entrepreneurial orientation and farmers' satisfaction with business performance while considering the moderating effects of the farm diversification strategy and the environmental conditions in which a farm business operates. The findings suggested that the combination of farm diversification strategy with the environmental conditions has a significant relationship with farmers' satisfaction with business performance. These two papers differ in their methodological approaches, however, they focus on the farmer as the unit of analysis, whereas Papers III and IV that follow, focus on the farm business as the unit of analysis. In particular, Paper III investigates the role of diversification strategies in enhancing farm financial performance. The results show a heterogeneous relationship between agricultural and farm diversification with farm financial performance across farm types. Finally, Paper IV examines the impact of diversification strategies on farm-level employment and farm income variability. It suggests that farm diversification is a labour-saving strategy and that it increases farm income variability. In contrast, agricultural diversification is positively related to farm-level employment but negatively related to farm income variability.

Keywords: farm diversification, agricultural diversification, values, farmers' satisfaction, financial performance, farm-level employment, farm income variability

Dedication

I dedicate this work to my brother Thomas Miaris and my sister Sofia Miari.

Contents

List of publications

This thesis is based on the work contained in the following papers, referred to by Roman numerals in the text:

I. Miaris, G.*, Löfgren, S., & Hansson, H. (2022). Values underlying farmers' business development decisions: evidence from Swedish agriculture using Zaltman metaphor elicitation technique. The Journal of Agricultural Education and Extension. (published online, forthcoming in print)

II. Miaris, G.*, Sok, J., & Hansson, H. The relationship between entrepreneurial orientation and farm business performance: Insights from Swedish agriculture. (the manuscript is under review to the International Journal of Entrepreneurship and Innovation)

III. Miaris, G.*, Manevska-Tasevska, G., & Hansson, H. The role of diversification strategies to enhance farm financial performance: Evidence from Swedish agriculture. (submitted to Agricultural Finance Review)

IV. Miaris, G.*, Manevska-Tasevska, G., & Hansson, H. Does diversification influence farm-level employment and farm income variability? Evidence from Swedish agriculture. (manuscript)

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*Corresponding author

Georgios Miaris contributions to the papers included in this thesis were as follows:

I. I developed the conceptual framework, used the software, and executed the formal analysis. Also, I wrote the original draft and the review, as well as edited and administered the project with the third author. The second author was involved in the data collection and planned the preliminary stage of the project. In addition, I was the corresponding author who communicated with the editor of the journal.

II. I developed the conceptual framework, applied the methods, used the software, and executed the formal analysis. In addition, I wrote the original draft and administered the project together with the second and third authors. Also, the second author was involved in the formal analysis, and the third author was involved in the provision of the data.

III. I developed the problem formulation, undertook the data curation and performed all the econometric analyses under the supervision and guidance of the co-authors. In addition, I wrote the original draft under the supervision of the co-authors.

V. I and the co-authors developed the study design. I undertook the data curation and performed all the econometric analyses. Also, I wrote the original draft together with the co-authors.

Abbreviations

ATO	Asset Turnover Rate
CAP	Common Agricultural Policy
DtA	Debt to Assets
EO	Entrepreneurial orientation
EU	European Union
FADN	Farm Accounting Data Network
HVM	Hierarchical Value Map
MEC	Means-End Chain
ROA	Return on Assets
ZMET	Zaltman Metaphor Elicitation Technique

1. Introduction

This thesis aims to investigate the driving forces for business development through diversification strategies in Swedish agricultural firms and the economic and social effects associated with these diversification strategies.

1.1 Background

> "Beyond its primary function of supplying food and fibre, agricultural activity can also shape the landscape, provide environmental benefits (...), and contribute to the socio-economic viability of many rural areas." (OECD, 2001)

This quote from the Agriculture Ministers at their meeting during March 1998 in Paris highlights the need to consider the role of agriculture as a food and fiber provider, on the one hand, while on the other acknowledging the role of agriculture in a more extensive framework, which includes economic, environmental and social aspects. This is also the approach of the EU regarding the role of agriculture. In particular, the EU deploys 28 strategic plans for addressing the economic, environmental and social objectives as illustrated in the new Common Agricultural Policy (CAP) (European Commission, 2023). This framework rests on a tacit assumption that agricultural activity produces commodity (e.g., flowers, fibers) and non-commodity outputs (e.g., food security, employment, biodiversity) (Meraner et al., 2015). The production from the agricultural activity of non-commodity outputs, given they are not related to the market mechanisms, has attributes of public goods and externalities. The concept of public goods implies that the producers cannot exclude others from the benefits of the outputs and that there are many beneficiaries whose consumption of the outputs does not

affect the consumption of others (Van Huylenbroeck et al., 2007). The concept of externalities implies that the producer of the non-commodity outputs is not compensated or does not compensate others for the production of the product (Van Huylenbroeck et al., 2007). The effects that non-commodity outputs have on third parties are not considered in the decision-making and optimisation procedure, and might lead to sub-optimal situations where market transactions can lead to the misallocation of resources (Meraner et al., 2015). For instance, the presence of positive externalities from agricultural activities can stimulate social welfare while the lack of a market can result in under-supply; and in the case of the existence of negative externalities, the lack of a market can lead to over-supply, which can lower the social welfare. Thus, this complex framework where the production of commodities is jointly related to the production of non-commodities demands a better understanding of the role of farmers regarding their business development to achieve a viable and prosperous agricultural sector.

Furthermore, there is a need to comprehend better farmers' motivations for their development decisions and the underlying drivers for these decisions in order to increase the current knowledge and reveal farmers' views. Subsequently, understanding farmers' decision-making procedure requires complementing insights from economic theory related to social and psychological aspects. For instance, it is important to acknowledge in farmers' decision-making procedures the benefits that they may obtain from farming with factors not only related to the profit that is coming from selling commodities in the market but also from their ability to contribute to the local community or the environment, which cannot be valued in marketable terms. To this end, this thesis strives to disentangle the farmers' choices for business development, the motives that these choices are related to, whether there is any relationship with non-commodity output, such as employment provision, and the role of entrepreneurship for farm business development considering that business development also has an entrepreneurial aspect.

1.2 Defining the concept of diversification and its policy relevance

Farmers' choices about their favored development strategies can have implications for farm businesses. In particular, their decision for which development strategy to accommodate is closely related to the allocation and management of resources in the farm business. For instance, the decision to engage in diversification strategies can likely require mobilizing farm resources from primary agricultural production to non-agricultural production. The thesis particularly focuses on two diversification strategies, which are recognized broadly in the literature, namely agricultural and farm diversification (Barbieri and Mahoney, 2009; Barnes et al., 2015; Hansson et al., 2010; Harkness et al., 2021).

Throughout the thesis, farm diversification has been defined as the use of farm business resources such as land, labour, and capital to obtain revenue beyond the activities that are considered primary agricultural production (e.g., food and fiber). This conceptualization of farm diversification is aligned with previous studies (Barbieri and Mahoney, 2009; Barnes et al., 2015; Hansson et al., 2012; McNally, 2001). Some prominent types of farm diversification outside of primary agriculture are direct sales (e.g., on-farm shops), the integration of tourism and hospitality enterprises (e.g., bed and breakfast), recreation activities (pick your own fruit), and contractual services and value-added processes (e.g., processing and packaging). Among the other benefits of expanding the economic base of the farm business through farm diversification is facilitating employment opportunities, and therefore various positive externalities can be associated with employment provision. For instance, employment provision can contribute to the maintenance of the population away from urban areas and therefore lead to less congestion in the cities and the preservation of public infrastructure in rural areas at low-cost levels per capita (OECD, 2001). In addition, farm diversification has been found to contribute economically to farm businesses considering that previous research has shown that it enhances short-term and long-term economic farm viability (Barnes et al., 2015).

Moreover, a farm is considered agriculturally diversified if it receives income from more than one conventional enterprise, such as milk and grain. This conceptualization of agricultural diversification is very similar to Barnes et al., (2015), El Benni et al., (2012), and Harkness et al., (2021).

Previous studies have associated agricultural diversification with farm income viability and variability grounded on the idea that obtaining revenue from multiple sources can alleviate the exposure of farm businesses to a wide range of risks (e.g., weather and market risks) and increase their economic resilience. Also, agricultural diversification has further been acknowledged for its positive environmental impacts (Davis et al., 2012). Another type of diversification that might be common among farmers is off-farm employment, but given the on-farm approach that we have adopted to define diversification, off-farm employment is excluded because in this case the farm resources are not deployed on the farm business but outside.

Diversification strategies beyond the production of externalities can be efficient approaches for farmers to adapt to the recent fragile global circumstances. The world has faced dramatic changes over the last few years due to multiple crises (i.e., climatic, pandemic and conflicts) within a very condensed period that resulted in disruptions to supply chains, increased energy costs, and increased costs for pesticides and fertilizers (Galanakis, 2023). Thus, this global turmoil has put the agricultural sector under pressure. The presence of these issues first reveals that such events are not so unlikely and second highlights the need to consider alternative development methods for farm businesses that can reduce their exposure to such uncertain conditions. A route to ween farm businesses off their reliance on such variable factors that would also contribute to their economic resilience and contribution to society would be engagement in diversification strategies. As described above, diversification strategies not only assist in the economic viability of farms but also limit the various types of risks that affect the farms. For instance, by farm diversification, farmers can potentially reduce their dependence on income from agricultural enterprises, and by agricultural diversification, farmers can likely limit their reliance on income from a small number of agricultural enterprises.

Among those changes, the new CAP period 2023-2027 fosters farmers and rural regions in achieving economic, environmental, and social goals in a balanced manner (European Commission, 2023). As part of this effort, the new CAP has introduced ten key objectives, which are related to ensuring a fair income for farmers, competitiveness, improving farmers' position in the value chain, climate change, environmental care, landscapes, generational renewal, jobs, growth and equality in rural areas, health and food, and knowledge and innovation (European Commission, 2023). This thesis

touches upon and discusses some of these policy objectives such as income and income variability, farmers' position in the value chains resulting from the adoption of a more market-driven model related to diversification activities (i.e., tourism, direct sales), and employment provision. In particular, diversification strategies can facilitate and contribute to achieving these objectives by increasing the current knowledge on understanding how development strategies are motivated by farmers, how these strategies are related to the economic improvement of farm businesses, how they are related to the variability of their income and whether they can provide employment opportunities. Also, beyond the new CAP, understanding the driving forces for farm business development and how diversification strategies are associated with social and economic factors can contribute to the sustainable development goals (SDGs) of the 2030 Agenda for sustainable development, which was adopted by all United Nations (UN) member states. In particular, diversification strategies can contribute to the achievement of various SDGs: "End poverty−SDG 1" "Zero hunger−SDG 2", "Decent work and economic growth−SDG 8", "Responsible consumption and production−SDG 12", "Climate action−SDG 13", and "Life on land−SDG 15" (Feliciano, 2019; López-Sanz et al., 2021). For instance, farmers by creating synergies between tourism and primary agricultural production, can assist in the achievement of SDG 8 (i.e., target 8.9) (López-Sanz et al., 2021), and engagement in multiple agricultural activities can be a measure against market volatility, which can further contribute to the achievement of sustainable production as reflected by SDG 12 (Feliciano, 2019).

1.3 Research questions

The previous section laid the ground for the thesis by referring to the role of farm businesses and the challenges they currently face, moreover discussing the new CAP policy objectives and the 2030 Agenda for sustainable development by the UN. In this context, this work focuses on farmers' motives for engagement in diversification strategies as business development routes and also examines how these strategies can contribute to various socio-economic aspects related to farm businesses. Regarding the latter, the research studies have focused on different socio-economic aspects aiming to provide a shape to the amorphic and simultaneously saturated literature of diversification, which has attracted the interest of many researchers.

Acknowledging that farmers' decisions for farm business development can be related to a wide range of underlying factors and that different development decisions might be attributed to the unlike underlying factors, this thesis, in the first study, formulated in an exploratory way, the following research questions:

a) What are the underlying driving forces that farmers consider important for farm business development, and do these forces differ regarding the farm businesses development route?

Furthermore, guided by farmers' motives to engage in diversification strategies, this thesis tried to investigate how diversification strategies are related to various socio-economic aspects. Thus, driven by the necessity to associate empirically diversification strategies with prominent economic and social facets, studies II, III, the IV focus on the following overarching research question:

b) How are diversification strategies empirically related to socio-economic aspects?

Each study relates the engagement in diversification strategies with separate socio-economic aspects.

1.4 Studies' layout and structure of the thesis

In the previous sub-section, I presented the overarching research questions, which are answered in studies I through IV. In addition, an overview of the level of analysis, material, and methods regarding the four studies is included in Table 1.

In study I, the level of analysis is centered on the farmer because farmers are in charge of making strategic decisions, and subsequently, obtaining information about their opinions is crucial to understand better the underlying forces related to the farm business development decisions. To conduct the research for this study, the data were obtained from semi-structured interviews using the Zaltman metaphor elicitation technique

(ZMET) (Zaltman and Coulter, 1995). ZMET assisted in identifying what farmers try to achieve and what the differences are between their decisions regarding strategic orientations.

Table 1: Overview of the material, methods, level of analysis and research questions across the papers

	Study I	**Study II**	**Study III**	**Study IV**
Level of analysis:				
Farmer/individual	Main focus	Main focus	-	-
Farm business	-	-	Main focus	Main focus
Measurements:				
Diversification strategies	Objective	Objective	Objective	Objective
Outcome	Subjective (attributes, consequences and values)	Subjective (satisfaction with farm business performance)	Objective (farm financial performance)	Objective (economic and societal outcomes)
Data, methods and research questions:				
Data	Semi-structured interviews	Survey / Questionnaire	FADN dataset	FADN dataset, Eurostat database
Methods	Zaltman metaphor elicitation technique	Multivariate ordered probit model	Fixed effects model	Fixed effects – IV model
Research questions	What are farmers' driving forces regarding farm business development through farm diversification? Do they differ regarding the non-diversified farm activities?	How EO and farm business performance are related? Do diversification and environmental hostility affect this relationship?	How agricultural and farm diversification is related to farm financial performance?	How diversification strategies influence farm–level employment and income variability?

Turning to study II, again the level of analysis is the farmer, but the empirical analysis is grounded on survey/questionnaire data, and the method to conduct the empirical analysis relies on a multivariate ordered probit model. The second study focuses on various subjective measures of farmers' satisfaction with the performance of their businesses. The benefit of using

subjective measures is that they allow us to obtain information about the economic and social aspects of the farm businesses' performance. This is appealing in agricultural studies since it has been recognized that not only economic aspects matter for farmers (Grubbström and Eriksson, 2018; Howley, 2015).

Studies III and IV complement the first two studies regarding farm business development through diversification strategies in the sense that they shift the departure point from the farmer to the farm business and allow for further and more informative insights. More specifically, the third study is grounded on administrative panel data for farm businesses and tests the relationship between diversification strategies with three objective performance indicators and a composite performative indicator while controlling for several farmer and farm characteristics.

Finally, the last study used again administrative panel data and combined those with population density data from the Eurostat database. It examined how diversification strategies are related to farm-level employment and farm income variability while controlling for various farm and farmer characteristics. Moreover, the study took into consideration endogeneity concerns that may arise from the relationship between farm diversification and farm-level employment and income variability.

The rest of the thesis is organized in the following way: Chapter 2 presents the methodological approaches that have been used, whereas Chapter 3 introduces the data. Chapter 4 illustrates the summaries of the four appended studies and finally, Chapter 5 discusses the contributions of the thesis, suggestions for future research orientations, and the policy implications.

2. Research approaches and connections among the studies

This chapter describes the methodological approaches used in the thesis and how the separate studies are linked. More specifically, I use a combination of qualitative and quantitative research methodological approaches to understand better the topic of farm business development through diversification strategies. The use of mixed-research (qualitative and quantitative) methodological approaches rests on the demand to overcome certain limitations that qualitative and quantitative approaches carry over and exploit in the advantages of each method aiming to study adequately the research object (Jemna, 2016). The key advantage of qualitative methods is that a researcher can collect much richer information than through quantitative methods, and obtaining rich information on a topic about which little is already known is considered desirable. Also, qualitative research methods can be useful to obtain information when there is a need to determine some basic characteristics of a topic. Also, receiving insights from the respondents' views and opinions can be of interest when the topic under examination is complex. On the contrary, the quantitative research methods do not have this flexibility in the collection of information because they usually ask for information that has already been pre-determined (e.g., information obtained through a survey), and subsequently, the respondents cannot elaborate on the reasoning that led to the response. Nevertheless, quantitative research methods permit data representativeness and the ability to test causal relationships. Moreover, the analysis is based on numerical measures (Jemna, 2016). Therefore, by acknowledging the strengths and weaknesses of each method, the aim is to implement a mixed-research methodological approach in a way that would allow obtaining useful insights.

Moreover, regarding the implementation of the mixed-research methodological approaches, there are different strategies that a researcher can follow, such as the sequential research method strategy, the concurrent research method strategy, and the transformative research method strategy (Creswell, 2014). For a more in-depth discussion about the application of research method strategies, the reader can see, inter alias, Creswell, 2014. In this work, I intended to follow a sequential research method strategy in which the results obtained from one method are considered while using another. For instance, the findings from a study can be used to identify measurements in follow-up studies. In addition, I applied the sequential research method strategy starting with the qualitative approach and then proceeded to the quantitative approach rather than the opposite because there is no prior knowledge of how farmers make decisions about diversification strategies. Thus, the mixed-research methodological approach in a sequential form serves the purpose of this thesis because, although many previous studies focus on diversification, there is no study that focuses on uncovering the values that underlie farmers' strategic choices for business development through diversification strategies nor how diversification strategies are related to various socio-economic factors. In this framework, I fill this gap in the literature by applying the mixed-research methodological approach.

The first study uses a qualitative research approach based on data obtained from semi-structured interviews with a small number of Swedish farmers. The qualitative approach of ZMET provides rich insights into how farmers make decisions, what they consider as important, and what they pursue with the development of their farm businesses. This information was not already available in the literature, and obtaining such information on these aspects assisted in paving the way for the imminent studies in the thesis. In particular, the qualitative research approach helped to uncover the role of pleasure (or satisfaction) in the farming profession. Thus, by acknowledging the role of pleasure, the quantitative approach could further be used to elaborate on this topic based on a broader sample of participants by using survey data. In this respect, study II takes a step further in the analysis and uses quantitative research methods focusing on various indicators of farmers' satisfaction with their business performance.

Moreover, the results from study I were informative for study III. More specifically, the richness of information obtained from the first study touches upon the economic aspects of operating a farm business. These findings corroborate the interest to investigate further how diversification strategies

can be related to economic aspects by adopting a quantitative research approach. Thus, in study III, the relationship of diversification strategies with three indicators that are related to the economic performance of the farm businesses was examined. To study this topic, I use an extensive sample of Swedish farm businesses, which complemented the limited generalizability of the insights in the first study. In addition, using a qualitative research approach in the first paper was valuable because it revealed further that not only economic aspects matter but also social aspects. Respondents considered the importance of the social aspect for the development of their businesses. In particular, this finding allowed me to identify the role of the provision of employment opportunities for others. Grounded on this result, study IV uses a quantitative approach, which inter alias, investigated how diversification strategies are related to farm-level employment using a broad sample of data from Swedish farm businesses. Figure 1 illustrates the links among the studies of this thesis in terms of conceptual basis, research approaches and data use.

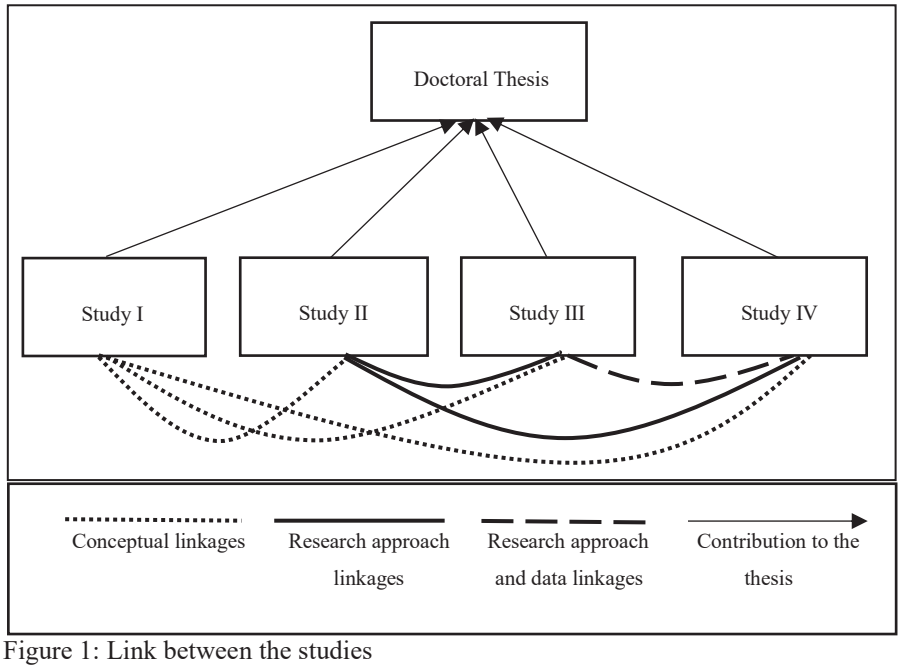

Figure 1: Link between the studies

3. Data

This chapter presents the data that have been included in the studies of this thesis. Overall, there are three types of data in this work: i) interviews, which were obtained from a wide range of farmers located in or close to the county of Uppsala; ii) cross-sectional survey data, which were obtained from participants that are located across Sweden; and iii) administered data, which were obtained from two sources. The first source is the Swedish farm accountancy data network (FADN), which is part of the European system for accountancy data collection from farm businesses, whereas the second source is the Eurostat database, which is related to demographic and population stocks.

The first study used data from 23 interviews with Swedish farmers that were conducted at the participants' houses. Although only a small number of interviews, qualitative research approaches typically supply rich content about the topic of interest (Jemna, 2016). Moreover, the sample encompasses a wide variety of farm types that are engaged in dairy production, crop production, egg production, vegetable production, pig production, honey production, cheese production, wool production, farms providing recreational and educational services, and farms offering accommodation services. The pluralism in farm production types reflects types that are common at the national level. In addition, farm size measured in terms of the number of employees is comparable to the Swedish average. To obtain as rich insights as possible, the interviews followed the ZMET procedure. The ZMET uses images during the interview process, which complement the verbal part of communication with the non-verbal, and encourages the participants to self-explore their thoughts (Zaltman, 1997). In this way, the respondents could generate information that they had not previously thought of.

Study II used survey data that were initially collected for a wider research purpose regarding the possibilities and limitations of the development of farm businesses in Sweden. The selection of those 2397 farm business owners that were primarily included reached out with the information provided by Statistics Sweden. The participants constituted a random stratified sample respecting operational direction, size, and geographical location. In addition, small farms were not included in the sample because it would have been risky to reflect farms that are often not primarily used for business enterprises. The farmers were contacted through regular mail. In the letter that they received, it was clarified that the answers are completely anonymous. Moreover, the survey was organized into two blocks. The first block included general questions about the farm business owners' characteristics (e.g., age) and the farm's characteristics (e.g., size, and distance from urban areas), whereas the second block included questions with a particular focus on the farmers' opinions about the topic and their personality characteristics. In total, 432 farmers responded, which represents an 18 percent response rate. Although this response rate seems low, it is comparable with the response rate from other studies (Höglind et al., 2021; Sok and Fischer, 2020). Nevertheless, the fairly low response rate in questionnaire-based studies might illustrate a more general trend toward farmers' reduced willingness to participate.

Studies III and IV use administered data from the Swedish FADN database. FADN is the European system of collecting annual data related to the production, economic, and financial status of farm businesses across the 27 member states of the EU. This system was introduced by the six founding members of the EU (i.e., Belgium, Netherlands, Luxemburg, Italy, France, and Germany) and has been formally established since 1965. Later, seven enlargement stages have taken place (European Commission, 2019b), which implied the progressive extension of the system. FADN data collection is compulsory for the EU member states while the participation is volunteering for the farm businesses. Overall, the FADN dataset across the 27 member states covers approximately more than 80 thousand farm businesses across the EU (European Commission, 2022). The data collected by each member state are eligible for similar criteria and then are forwarded to the department at the European Commission that is responsible for EU policy on agriculture and rural development. Following the same principles across the EU constitutes the FADN dataset valuable for generating policies and cross-country comparisons. Sweden joined the EU system in 1995, and initially,

the responsible agency for data collection was Statistics Sweden, until 2019. Since 2020, the Swedish Board of Agriculture took over this responsibility. Annually more than 1000 Swedish farms participate in the FADN dataset (European Commission, 2022), and usually, around 10 percent (≈ 100 farms) of the farm businesses are replaced every year. This annually rotating panel of farm businesses is representative at the county level or NUTS3 level (European Commission, 2020). Study 3 consists of 4813 observations for the years between 2016 to 2020, while study 4 consists of 5752 observations for six periods, starting from 2014 until 2019. Finally, the dataset in the fourth study is combined with population density data from the Eurostat Database (Eurostat, 2022).

4. Summaries of appended papers

This Chapter includes a summary of the four studies that comprise this thesis.

4.1 Study I – Values underlying farmers' business development decisions: evidence from the Swedish agriculture using Zaltman metaphor elicitation technique

This study focuses on the values that underlie farm business development through diversification and compares those with non-diversified farms. Generally, farm business development has gained significant attention in academic literature. Several authors, including Damianos and Skuras, (1996), Hansson and Sok, (2021), Methorst et al., (2016) and van den Ban, (1999) have contributed to the body of knowledge concerning farm business development. Moreover, farm business development holds a crucial role in bolstering the viability of farms and facilitating positive economic growth for rural communities. Policymakers in Europe have prioritized the development of rural areas and farms. For several decades, diversified farming activities have been regarded as an approach for supporting rural regions (Chaplin et al., 2004) and promoting the growth of farm businesses. Also, it has been suggested that promoting diversified farming activities can contribute to the development and prosperity of rural regions by making use of underutilized agricultural resources, creating job opportunities, and fostering the expansion of farming businesses. In particular, as stated by McNally, (2001) and Hansson et al., (2013), farm diversification is a potential strategy to revitalize rural economies and promote economic activity in agricultural areas.

Numerous studies have been carried out to identify the determinants and motives for farm diversification (Barbieri and Mahoney, 2009; Hansson et al., 2010; Meraner et al., 2015; Pfeifer et al., 2009). Despite this previous literature, limited attention has been given to the values that drive diversification decisions. Personal values are perceived as concepts or beliefs that direct individuals' actions (Bardi and Schwartz, 2003; Schwartz, 1992), and previous research has consistently emphasized the significance of values in the decision-making process of farmers (Chapman et al., 2019; Darnhofer et al., 2005; Grubbström and Eriksson, 2018). Acknowledging that uncovering farmers' values requires a qualitative research methodological approach, the results of this study are grounded on in-depth interviews with a group of 23 Swedish farmers using the Zaltman Metaphor Elicitation Technique (Zaltman and Coulter, 1995). Thirteen interviews represent non-diversified farms, and ten interviews represent diversified farms. The purpose of using ZMET in this study was to take farmers' reasoning to a higher cognitive level and help them to clarify aspects that were previously unclear. ZMET is therefore the right approach to understanding the profound drivers for the strategic direction and determining the values of agricultural development.

In particular, ZMET is based upon the assumption that images serve as a crucial catalyst for revealing respondents' cognitive processes, behaviors, responses, and feelings. This assumption posits that humans primarily process information through visual representations, as opposed to verbal expressions, and that metaphors serve as essential conceptual building blocks within cognitive processes (Zaltman, 1997; Zaltman and Coulter, 1995). The use of images holds a prominent role in the interview process because they represent a non-verbal part of communication, which acts as a complementary component to verbal communication and therefore stimulates the interviewees to delve into their intrinsic thoughts. Moreover, laddering is a central component in ZMET and is conceptualized through the Means-End Chain (MEC) approach (Christensen and Olson, 2002). The MEC approach was introduced to articulate the consumers' cognitive representations of products, encompassing a hierarchal relationship between attributes, consequences, and values (Gutman, 1982).

To comprehend better the motivations of farmers for strategic orientations, we have employed the framework of economic value, which encompasses the concepts of use and non-use values (Hansson and Lagerkvist, 2015, 2016; Lagerkvist et al., 2011; McInerney, 2004). Next, we

coupled them with the personal value framework (Rohan, 2000; Schwartz and Bardi, 2001). The use and non-use value terminology tried to describe to what extent economic analysis can contribute to understanding policies related to animal welfare (McInerney, 2004). For this reason, McInerney, (2004) used economic theory and categorized the economic values of farmers about the management of their livestock. This terminology was adapted to fit the setting of this study. Use values in the strategic orientation context is taken to imply the benefit that farmers obtain from using their agricultural resources to achieve values related to, e.g., profit enhancement, production efficiency, cost reduction, or profitability preservation, as explained previously. Contrarily, non-use values imply that farmers may obtain economic value from managing their resources in a specific strategic orientation that is not related to any profitability or productivity considerations.

The findings of the study indicate that a complex set of use and non-use values direct decision-making processes regarding the strategic orientation of farms. Within the domain of non-diversified farm activities, this study has identified a total of eight values (help others, make a living, reach optimum, safety, bonds with business/generations, pleasure, improvement, socialization), whereupon three have been classified as use values (make a living, reach optimum, improvement) while the remaining five have been categorized as non-use values (help others, safety, bonds with business/generations, pleasure, socialization). Regarding diversified farms, we have identified a set of four distinct values (social sustainability, pleasure, doing the right thing, offer employment), each of which has been classified as non-use value types. This result suggests that the financial aspect of their choices is not a decisive factor. Furthermore, these outcomes support prior studies suggesting that farmers base their choices on a variety of economic and non-economic benefits (Grubbström and Eriksson, 2018; Howley, 2015).

In addition, the value of ‘pleasure’ is highlighted by respondents in both strategic orientations. This result likely indicates that those who were surveyed are content with their efforts toward development and can further imply the significance of pleasure in the occupation of farming. In addition, the values of ‘helping others’ and ‘doing the right thing’ may possess a shared meaning concerning avoiding actions that can be harmful to the environment and diminishing the quality of products that they offer to their customers. This finding likely indicates that farmers consider others’ welfare

as important. In addition to their common values, certain values are diverging between these two strategic orientations. As an example, for farmers who are not engaged in farm diversification activities, it tends to be important to 'make a living' from farming, 'reach optimum', and 'improve' farming processes. On the other hand, for farmers involved in farm diversification, it seems that 'social sustainability' and 'the provision of employment opportunities' are important.

In terms of policy, this study's findings enhance the understanding of the reasons behind business development and illustrate that policy-makers should acknowledge that farm development is motivated by more than just the desire to maximize profits. Moreover, the presence of different values among the strategic orientations highlights the necessity to address and focus on each group separately. Policy-makers can structure and incite policy initiatives in a way that encourages the targeted group to participate. By adopting this approach, farmers may become more receptive to alterations in policies and be more inclined to accept them willingly. An example is creating policies that foster the development of farm businesses by recognizing the importance of the relationships between farmers, their families, and their businesses. Moreover, policy measures that aim at enhancing employment prospects in remote regions can focus on farmers who diversify their farming activities. Also, farm advisors can enhance communication with farmers if they acknowledge these results, which could lead to a more profound comprehension of farmers' objectives and subsequently improve the quality and impact of their recommendations.

Finally, the current studies in the literature that focus on diversification activities in agriculture use various quantitative methods (Barnes et al., 2015; Damianos and Skuras, 1996; Evans, 2009; Hansson et al., 2010). These studies are not designed to offer in-depth insights into the underlying drivers or allow for comparison of profound differences between the diversification and non-diversified strategic orientations, and thus offer limited information on farmers' perspectives about their development activities. In this respect, the main contribution of this study is the use of a qualitative research methodological approach to reveal what farmers try to achieve and what are the subtle differences between their decisions regarding strategic orientations.

4.2 Study II – The relationship between entrepreneurial orientation and farm business performance: Insights from Swedish agriculture

This study investigates the relationship between entrepreneurial orientation and farmers' satisfaction with business performance. Key decision-makers use entrepreneurial strategy-making methods, or in other words, Entrepreneurial Orientation (EO), to assist businesses in maintaining their vision, generating competitive advantage, and seizing new market opportunities (Engelen et al., 2015; Rauch et al., 2009). Many researchers have focused on the concept of EO in the literature (Engelen et al., 2015; Nybom et al., 2021; Rauch et al., 2009; Strobl et al., 2022; Thanos et al., 2017; Vaznyte and Andries, 2019). This interest can be justified by the fact that EO has been found to be related to superior business performance. In particular, the findings from Shirokova et al., (2016), Strobl et al., (2022), and Wiklund and Shepherd, (2005) tend to consent that the relationship between EO and business performance is positive. However, these studies suggest that this relationship also depends on other internal or external factors. Regarding the farm businesses, there are limited and heterogeneous insights about the relationship between EO and farm business performance and the factors that likely affect this relationship (Grande et al., 2011; Nybom et al., 2021; Veidal and Flaten, 2014). The shortage of results limits the knowledge of policy-makers, advisers, and farm business owners about this topic and therefore deteriorates the possibilities of suggestions and the embracement of the suggestions regarding how to exploit the benefits of EO.

In this framework, this study aims to provide insights into four related questions: First, it asks what the relationship is between EO and farm business performance. Second, it asks how environmental hostility influences the relationship between EO and performance. Third, it asks how diversification affects the relationship between EO and performance, and finally, it asks how the interaction between farm diversification and environmental hostility affects the link between EO and performance. The focus on the moderating role of farm diversification and environmental hostility on the EO and farm performance relationship is based on the fact that farm diversification is regarded as an important adjustment strategy for farmers (Barnes et al., 2015; Hansson et al., 2010). Similarly, environmental hostility has been highlighted in the literature (Casillas et al., 2010;

Shirokova et al., 2016) grounded on the assumption that firms do not operate in a vacuum. Businesses operating within a hostile environment can typically be deprived of resources crucial for their performance (Shirokova et al., 2016). To investigate these questions, the study uses survey data from a sample of 248 Swedish farm businesses and tests these relationships in a stepwise fashion, using a multivariate ordered probit model.

This research adds to the current body of literature in two respects. First, it supplies insights concerning the link between entrepreneurial orientation and farm business performance, which are much in demand. This link has previously been found to provide mixed results within the agricultural domain. Additionally, it examines this link considering internal and external factors. Second, according to Lumpkin and Dess, (1996), it is important to prioritize the satisfaction of small and private business owners over conventional performance metrics since small business owners may prioritize other objectives as important beyond sales and growth. This study's approach emphasizes the satisfaction of the owner with diverse aspects of the farm business performance such as financial performance, farm income, farm size, leisure time, and employment opportunities for both the owner and other workers. In this way, this work recognizes that the notion of satisfaction with business performance is multifaceted (Carree and Verheul, 2012).

Furthermore, a well-documented approach for EO is grounded in Miller's (1983) work. This approach represents EO as a construct that consists of three dimensions: innovativeness, proactiveness, and risk-taking. Using this conceptualization of EO in this study, we hypothesize that EO has a positive association with farmers' satisfaction with business performance. The key idea of this hypothesis is that more entrepreneurial-oriented businesses can easily adjust to the demands of the markets, being ahead of the competition and chasing new opportunities. In addition, we contend that entrepreneurial-oriented farm businesses that operate in a hostile environment where the resources are scarce tend to perform better than other farm businesses. Thus, we hypothesize that environmental hostility positively moderates the relationship between EO and farmers' satisfaction with business performance. Moreover, farmers engaging in diversification strategies would imply that they organize the farms' idle resources better to obtain revenue from new resources. Thus, diversified farms may benefit from obtaining an entrepreneurial orientation. In this way, this study hypothesizes that farm diversification moderates in a positive way the relationship between EO and

farmers' satisfaction with business performance. Finally, following the configurational approach, which suggests that the alignment of many constructs can lead to better performance (Wiklund and Shepherd, 2005), this study contends that farms that operate in a hostile business environment and are engaging in farm diversification strategies can enhance the relationship between EO and farmers' satisfaction with business performance. For an overview of the hypotheses, see Figure 2.

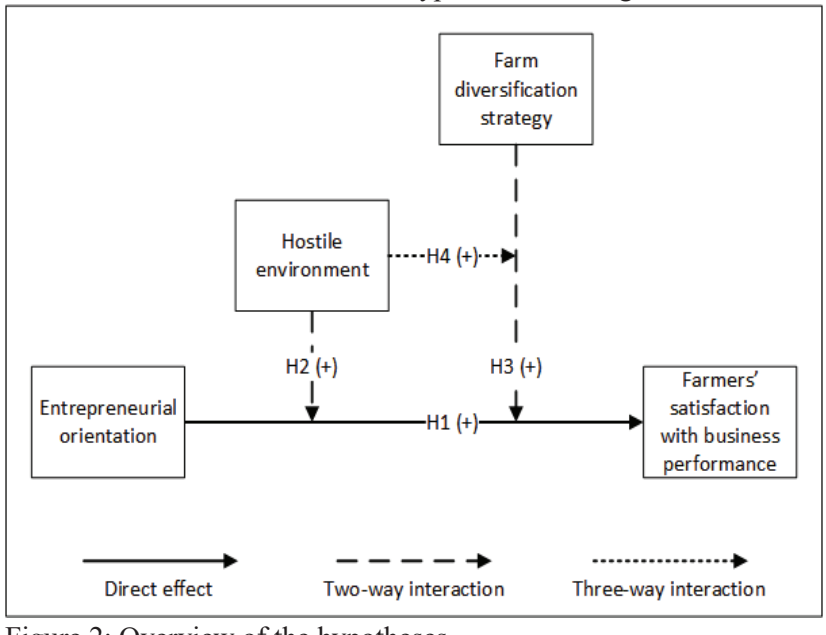

Figure 2: Overview of the hypotheses

The findings suggest that EO is positively related to farm business owners' satisfaction with farm business performance. This implies that farmers with more entrepreneurial orientation are more satisfied with the performance of their business in terms of income. Nevertheless, they seem to be less satisfied regarding their leisure time and the farm size. In addition, the empirical analysis suggests that neither farm diversification nor environmental hostility moderates the relationship between EO and farmers' satisfaction with the business performance, which does provide support for our hypotheses. Turning to the alignment of environmental hostility and farm diversification strategies, the results indicate a significant role in determining the relationship between EO and business performance.

Finally, there are some interesting policy implications to be acknowledged from this study for policymakers and farm organizations. Overall, the results have shown that farmers with an entrepreneurial posture can obtain significant benefits. To reap these benefits better, policymakers could direct public funding on farmers' entrepreneurial training and create programs that can enhance entrepreneurship in the agricultural sector. Also, farm organizations could likely promote entrepreneurship among their members, and through an "entrepreneurial multiplier", the entrepreneurial posture would reach out to all the members.

4.3 Study III – The relationship between entrepreneurial orientation and farm business performance: Insights from Swedish agriculture

The third study of this thesis focuses on the relationship between two diversification strategies and the financial performance of farm businesses while considering the role of farm type. Diversification strategies have been acknowledged to have important benefits for the agricultural sector and the environment, and therefore various policy schemes encourage farmers to engage in such activities (European Commission, 2018b). In this study, we separate the concept of diversification according to the source of revenue for the farm businesses. The first concept is farm diversification, which is taken to imply that farm businesses receive revenue from activities outside of what can be perceived as primary agriculture. An example of these activities can be revenues from agri-tourism or on-farm processing (Barnes et al., 2015; Hansson et al., 2010). The second concept is agricultural diversification, which is taken to imply the revenues of farm businesses from two or more agricultural enterprises, such as crop and livestock enterprises (Barnes et al., 2015; Hansson et al., 2010) (the conceptualization of diversification has been previously discussed in section 1.2).

Furthermore, the role of farm type can be significant because different types of farms might have different resources and requirements and therefore different levels of participation in diversification activities. Also, previous studies have shown that the economic outcome of farm businesses can differ according to the type of production (Harkness et al., 2021; Slijper et al., 2022). The study separates farm businesses into five types, namely, mixed, dairy, other grazing livestock, granivores, and field-crops. Mixed farms

constitute approximately 7 percent of the sample and dairy farms 36 percent. Other grazing livestock represent approximately 28 percent, while granivores comprise almost 9 percent. Finally, field-crops represent approximately 20 percent of the sample.

Although diversification has attracted the interest of several researchers, most of them have investigated either the determinants or the motives for diversification (Barbieri and Mahoney, 2009; Dries et al., 2012; Hansson et al., 2013; Meraner et al., 2015; Northcote and Alonso, 2011; Pfeifer et al., 2009), but a few studies have investigated how different diversification strategies are associated to the economic results of farm businesses (Barnes et al., 2015; Harkness et al., 2021). Nevertheless, no study to the best of our knowledge investigates how farm and agricultural diversification, as defined previously, is related to farm businesses' financial performance while considering the heterogeneity across farms. This study uses panel data from 2016 to 2020 for farm businesses in Sweden in combination with a fixed-effects model to investigate this topic. Also, it uses three measures of farm financial performance, return on assets (ROA), debt to assets (DtA), and asset turnover rate (ATO). Although these three measures have been used extensively in the literature and would also cover the profitability, solvency and efficiency aspects of a farm business, we develop a composite indicator following the suggestion of Yi and Ifft (2019) in order to obtain a clear interpretation of the results using factor analysis.

The results suggest that there is significant heterogeneity in the average values of the diversification strategies across farm types, and this heterogeneity might be attributed to the seasonality of agricultural production. For instance, farmers who engage in production that is more seasonal are more likely prone to find additional sources of income through diversification strategies due to the extra time they have available. Moreover, the results suggest that farm and agricultural diversification have a mixed relationship with the composite financial performance indicator across farm types. The results particularly indicate that farm diversification has a positive association with dairy farms, a negative association with granivore farms, and no association with the remaining types. In addition, agricultural diversification has a positive association with dairy farms and no association with the other four farm types. These insights likely suggest that farm and agricultural diversification are two separate diversification strategies that can lead to different outcomes. Barnes et al., (2015) found similar results

regarding the relationship between farm and agricultural diversification with farm viability.

From a policy point of view, this research has several suggestions. First, although engagement in diversification strategies is seen as beneficial from environmental and societal perspectives, farmers may need the necessary financial nudging to develop such strategies on their farms. Therefore, grounded on the results of this study, policymakers can provide public support to enhance farmers' incentives to develop diversified activities. Second, the findings indicate that policymakers need to evaluate which farm types are more likely to engage in diversification strategies to suggest more targeted policies, and third they highlighted the need to measure financial performance as a composite indicator for future policy designs to obtain a holistic view of the financial outcome without contradictions for the farm business.

4.4 Study IV – Does diversification influence farm-level employment and farm income variability? Evidence from Swedish agriculture

The last appended study investigates whether farm and agricultural diversification strategies affect farm-level employment and farm income variability. Employment in the agricultural sector and the stabilization of farm income have long since been the focus of EU policies (European Commission, 2019, 2018), and several studies have examined the effects of various policies on employment in agriculture and income stability. However, there is a gap in the literature because there is no previous study that provides insights into whether farm-level strategies can influence farm employment and income variability. This work strives to fill this research gap by supplying these insights. In particular, this study, by bringing together the findings from previous research (El Benni et al., 2012; Harkness et al., 2021; Meraner et al., 2015), hypothesizes that farmers' participation in diversification strategies can require more labour and likely reduce farm income variability. To provide insights into the formulated hypotheses, the study used a fixed effect model and panel data for Swedish agricultural businesses from 2014 until 2019 while considering the potential endogeneity concerns that can be raised for the farm diversification strategy. To alleviate such concerns, the study controls for endogeneity by using population

density at the regional level as an instrumental variable. The use of population density as an instrument for farm diversification rests on the assumption that farms in more populated areas have a higher incentive to provide alternative services/products to consumers.

The main results of this study indicate that farm diversification reduces the total farm labour hours by approximately 8.6 percentage points and the total family labour hours by approximately 5 percentage points, while it tends to increase the farm income variability. In contrast, agricultural diversification has a positive association with both total labour hours and family total labour hours, whereas it has a negative association with farm income variability. These differences in the results regarding farm and agricultural diversification suggest that they need to be perceived as different phenomena. Furthermore, to enrich the insights of this study, we investigate whether there is heterogeneity in the results across farm size and farm type. The findings show that farm diversification has a significant impact on total labour hours, total family labour hours, and farm income variability for small farms, but there is no significant impact for bigger farms. In a similar vein, this involves the results about agricultural diversification regarding the statistical significance of the coefficients, but the signs are directed in opposite directions compared to farm diversification. Regarding farm type, the results indicate that farm diversification has a significant impact on both variables for farm labour hours and farm income variability, whereas there is no significant impact for dairy farms. Once again, the results regarding agricultural diversification are similar to the results of farm diversification in terms of statistical significance, but the signs of the coefficients are the opposite. These insights suggest that farm and agricultural diversification have heterogeneous implications regarding farm type and farm size, but the difference in the signs between these two strategies is still as present as it is in the main results, which indicates further that these strategies need to be perceived separately. Furthermore, to examine the validity of the instrumental variable to the local economic conditions, we performed a robustness check by netting out the local economic conditions. The results indicate that population density is a valid instrument of farm diversification.

The findings of this study have several implications. In particular, despite initially sharing anticipated hypotheses regarding farm and agricultural diversification, the empirical findings corroborate the suggestion that diversification strategies need to be regarded as different. Furthermore, formulating similar hypotheses about these two strategies could give rise to

erroneous inferences and policy proposals. This work recommends that future policies need to acknowledge the findings on farm diversification, and therefore implement policies to support short-value-chains as a means to enable farmers to gain additional value for their products in the supply chain and enhance their overall welfare. The implementation of such policy design holds great relevance for small-scale farming operations that are prone to have restricted labour accessibility. Additionally, policies that seek to enhance the economic and environmental adaptive capacity of farms may focus on the implementation of agricultural diversification strategies. The adoption of such strategies can promote biodiversity within farms, improve the quality of soil, diminish excessive use of chemicals, and serve as a viable income safety net (Feliciano, 2019). Considering these beneficial contributions, agricultural diversification facilitates the supply of positive externalities, and this can justify that public policies may remunerate farmers for the additional labour inputs that its implementation might require.

5. Discussion

In this last chapter of the thesis, the discussion focuses on the contributions of this work, its implications, and suggestions for future research.

5.1 Contributions

The thesis is a series of papers that share a mutual aim, which is to understand the driving forces for farm business development though diversification strategies in Sweden and the association of the diversification strategies with various social and economic aspects. To succeed in the requirements of this aim, the thesis formulates two types of questions regarding diversification strategies: the 'what type of questions' and the 'how type of questions'.

The 'what type of questions' provide novel insights into understanding what drives farmers in Sweden for farm business development. In other words, the first study investigates what motivates farmers for their choice of farm business development for diversified and non-diversified farms and what differences the separated groups have. Answering the 'what type of questions' requires the use of a qualitative research approach because there are no previous studies that have provided such insights, and such approaches are appropriate to provide exploratory insights. Grounded on the insights of the first study, the remaining three studies aimed to provide insights into the 'how type of questions', more specifically, how diversification strategies as a tool for farm business development are related to various socio-economic factors. Thus, we used a quantitative research approach to augment the insights from the 'what type of questions' with the insights from the 'how type of questions'. This mixed-research approach (i.e., qualitative and quantitative approaches) in combination with its sequential implementation (i.e., first the qualitative and then the quantitative) offers a

holistic perspective when we talk about diversification strategies, and this constitutes the first contribution of this thesis.

Besides the methodological contribution to the literature of agricultural economics by using a mixed-research approach, the thesis contributes to the domain of diversification, which is nested in agricultural economics literature by introducing the ZMET (Barbieri and Mahoney, 2009; Barnes et al., 2015; Hansson et al., 2010; Harkness et al., 2021; McNally, 2001). The application of ZMET is useful because it allows farmers to answer 'the what type of questions' in detail. In particular, it allows to uncover farmers' mental representation of their strategic choices for farm business development with the help of images, which operate as metaphors, and reveals what attributes farmers assign to their strategic choice, as well as what consequences the attributes are assumed to have. It also identifies the values that farmers perceive through the consequences of their strategic choices. In this way, the study explored the underlying driving forces for farmers' choices of different strategies by eliciting what farmers pursue by those choices. Moreover, this information could be depicted on Hierarchical Value Maps (HVM), which reflected farmers' thoughts and line of reasoning about their strategic choices. The HVM for diversified farmers revealed that they are driven by four values (social sustainability, pleasure, doing the right thing, offering employment), whereas non-diversified farmers were driven by eight values (help others, make a living, reach optimum, safety, bonds with business/generations, pleasure, improvement, socialization). These results point to the necessity to consider both social and economic aspects as underlying forces for farm business development and also the need to construct variables that would allow for the inclusion of these aspects when examining further farm business development strategies.

The 'how type of questions' try to provide insights into these inquiries by examining how diversification strategies are related to various socio-economic aspects by using quantitative approaches. Investigating these relationships constitutes the third intended contribution of this thesis because, so far, the literature has provided limited insights regarding the relationship between diversification strategies and economic aspects (Barnes et al., 2015; Harkness et al., 2021), which need further validation and no insights regarding any kind of social aspect. The results in Studies III and IV suggest that diversification strategies have significant relationships with economic aspects such as financial performance and income variability but also with social aspects such as farm employment. Furthermore, based on the

inconclusive and limited findings regarding the relationship between entrepreneurial orientation and farm business performance and how this relationship varies with respect to diversification strategies and external factors, Study II contributes to the intersection of agricultural economics and entrepreneurship literature by providing the much-needed information (Grande et al., 2011; Nybom et al., 2021; Veidal and Flaten, 2014). Moreover, Study IV adds further information to the broader question of how diversification strategies are related to social and economic factors by using a causal inference framework. In particular, Study IV provides information about the direction of the relationships, which constitutes another contribution by the thesis to the literature.

5.2 Policy implications

The results of this thesis are of considerable relevance for future policy design. Policy-makers can acknowledge from the insights in Study I that different types of values drive diversified farmers compared to non-diversified farmers. An implication from this difference is that each strategic group needs to be approached separately for the better implementation of a policy. In addition, considering that the results reveal the importance of social aspects, exclusively economic compensations might not be enough to motivate farmers to develop their businesses in a way that policies suggest. The farmers' motives for farm business development can be argued to be mirrored in Studies III and IV by the statistically significant relationships between diversification strategies and the various socio-economic aspects, which first lends some support to the qualitative insights but is also per se insightful for policy design because it offers further pieces of evidence for the importance of diversification strategies for the farm businesses.

Furthermore, the insights from this thesis suggest that diversification strategies should not be considered as similar phenomena but as different, as inferred by Study IV. In particular, this study points to the fact that agricultural and farm diversification provide contrasting results, which indicates that future policy design needs to perceive them as different strategies. Otherwise, policy recommendations could likely lead farmers to erroneous results and be much different than the ones that initially could have been expected. Moreover, another aspect that needs to be considered in future policy design, and also is related to the current literature (Dries et al.,

2012; McNally, 2001), is the type of farming activities, as indicated in Study III. Farm type can play a crucial role in the farmers' decision to engage in diversification strategies. For instance, farmers who manage arable farms may be more interested in engaging in diversification activities due to the seasonality of production, while farmers who manage farm businesses without such seasonal variation in production, such as poultry farms, might be less interested in diversifying.

5.3 Future research orientations

Examining the driving forces behind farm business development in Sweden and the social and economic effects associated with the different strategies for farm business development is a demanding, complex, and inconclusive topic that requires further research. In this respect, future research can use the work of this thesis to provide more insights into how diversification strategies can contribute to social and economic aspects that this series of studies have not focused on, mainly because existing datasets do not allow for such analysis. More particularly, future research can investigate whether diversification strategies can become a means to achieve a more balanced representation of both genders in the agricultural sector. In this respect, future papers could build upon the estimation framework of Study IV and investigate how diversification strategies can affect the job participation of farmers' spouses in the farm business and whether they can affect the amount of spouses' farm-level labour input. Understanding if diversification strategies can increase spouses' engagement in the farm business would be beneficial not only for the farm household from a societal perspective because of the job provision to a family member but also for the balanced representability of the family members in farm decision-making, which would allow for bringing new ideas regarding how to operate farm businesses. Also, it would contribute to demographic sustainability in rural areas by reducing the potential of migration to urban regions.

Furthermore, this thesis suggested that diversification is related to the economic factors of the farm business. Thus, future research can focus on whether there is a significant role of diversification to reduce any potential income gap between farm and non-farm businesses. This type of research would allow policy-makers to understand better the dynamic that diversification strategies might have and reduce the discrepancies that

market structure can presumably create. Furthermore, examining whether diversification can reduce the economic gap across businesses could be a way to halt the reduction in the number of farm businesses. Providing such insights would be highly relevant for policy-makers in the EU and Sweden because in recent decades the number of farm businesses has gradually decreased (Eurostat, 2022; Lund, 2022). Moreover, the supply of insights regarding the economic gap becomes even more relevant, considering that previous studies that have explored income differences between farm and non-farm households identified that an income differential is still apparent (Nordin et al., 2019; Rocchi et al., 2021).

Future research can also extend the analysis of the first study of this thesis to other countries by using a similar methodological approach to obtain information about what drives farmers regarding their business development at a multinational level and try to validate the current findings. Obtaining insights from qualitative approaches and 'seeing the voice of the farmers' would be particularly interesting for policy-makers in the EU. For instance, understanding what the underlying forces are for farm business development by revealing farmers' views at the European level can increase their willingness to accommodate new policies, which would subsequently have implications for food sufficiency in the EU in the coming years. In addition, revealing farmers' values and line of reasoning at the European level in this turmoil period for agricultural markets can provide insights for policy-makers on how to build a more economically and socially resilient farm sector. For instance, new research can provide insights into how willing farmers are to engage in farm diversification activities by limiting their dependencies on fossil fuels and investing more in renewable energy production (e.g., wind power). Finally, considering that the concept of diversification has attracted the interest of several previous studies, future research can create a systematic classification of the various definitions of diversification that have been used in the literature by time and country while using content analysis to decrease the amount of information into organized segments. Such insights will be beneficial to reveal the evolution of the definition of diversification in time and uncover potential systematic specificities across countries.

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Popular science summary

This work focuses on farm business development through diversification strategies. Most readers of this thesis have probably been to a diversified farm for a tasting experience (e.g., to taste cheese or wine) or recreation purposes, or have bought products from diversified farms at various selling points (e.g., supermarkets, street markets).

This thesis raises some questions regarding these farm business activities. For instance, why are farm business owners engaged in such activities? What drives them to make such decisions? Also, acknowledging that farmers are business owners and there is a need to operate profitable businesses, we ask whether diversification strategies are related to farms' economic aspects. In addition, we ask whether diversification strategies are related to social aspects, acknowledging that farmers live and operate as part of a local community.

This thesis provides answers to these questions through a series of papers using interviews, surveys, and administered data from Swedish farmers. The overarching results of the first study suggest that for diversified farmers, the economic aspect of a farm business is not a decisive factor. This result entails that policy-makers need to consider non-economic factors in the development of policy designs related to farm business development to encourage farmers to embrace such policies. Moreover, the results from the second study indicate that entrepreneurial orientation has a significant association with various indicators of farmers' satisfaction with business performance. However, the findings provide no support for the conclusion that the combination of diversified farms with entrepreneurial orientation has any significant association with farmers' satisfaction with business performance. Turning to the third and fourth studies, the overarching results indicate that diversification strategies have a significant relationship with

farm financial performance, farm income variability, and farm-level employment, which suggests the economic and social importance of those strategies for farm businesses.

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> "When you set out on your journey to Ithaca, pray that the road is long, full of adventure, full of knowledge (…)"
>
> Constantine P. Cavafy (1863-1933)

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Values underlying farmers' business development decisions: evidence from Swedish agriculture using Zaltman metaphor elicitation technique

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ABSTRACT

Purpose: This study aimed to uncover the values that underlie farmers' strategic choices for business development. In particular, we uncovered farmers' values related to business development through farm diversification and compared these with values regarding business development through non-diversified farm activities.

Methodology: We considered diversified and non-diversified farm activities as two possible strategic orientations related to farm development. For each strategic orientation, the study systematically uncovered its values grounded on in-depth interviews with 23 farmers in Sweden, using the Zaltman metaphor elicitation technique. We analyzed values in terms of use- and non-use values related to the choice of strategic orientation.

Findings: The results suggested that a heterogeneous set of use- and non-use values guide choices for farm strategic orientation. Particularly, for non-diversified farm activities, we identified eight values, of which three were categorized as use values and five as non-use values. For diversified farms, we found four values, all of which were categorized as non-use values.

Practical Implications: Our results highlight that policymakers need to approach farm development differently for each strategic orientation, considering that the underlying values between these two groups differ. Also, for farm advisors, results can be useful for improving and adapting the communication and interaction with farmers, which can further improve the content and influence of advisory services.

Theoretical Implications: The Zaltman metaphor elicitation technique expands the methodology of eliciting farmers' values and especially regarding farmers' strategic choices.

Originality: This paper extends the knowledge of the driving forces that underlie farmers' choices for farm business development.

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1. Introduction

Farm business development has attracted considerable interest in the literature (Damianos and Skuras 1996; van den Ban 1999; Methorst et al. 2016; Hansson and Sok 2021), and is instrumental for viable, profitable farms, and rural economic growth. Policymakers in Europe prioritize the viability of rural areas and the development of farms high on their agendas. In particular, measures reflected in the Common Agricultural Policy and echoed at national policies target lively rural areas (Nègre 2021) and farm development. For decades, diversified farm activities have been considered a plausible measure to support rural areas (Chaplin, Davidova, and Gorton 2004) and farm business development. In other words, fostering farm diversification has been proposed to advance rural areas, stimulate economic activities from idle agricultural resources, provide employment opportunities, and enhance farm business growth (McNally 2001; Hansson et al. 2013; Barnes et al. 2015).

Much empirical work has been conducted to establish the determinants of farm diversification. For instance, Pfeifer et al. (2009) showed that a factor for diversification is the landscape properties, and Hansson, Ferguson, and Olofsson (2010) found that business structure and financial conditions influence diversification. In addition, Meraner et al. (2015) provided evidence that geophysical farm characteristics are critical determinants for choosing a diversification trajectory. There is also significant interest in the motives related to diversification. In particular, Barbieri and Mahoney (2009) found that risk reduction and a desire to cope with uncertainty were significant goals for diversification. Also, Northcote and Alonso (2011) supported that farmers' decisions to diversify are driven by lifestyle factors, and Hansson et al. (2013) highlighted the importance of family relationships as a motivating factor in making such decisions.

Notwithstanding the contributions made by previous literature related to diversification, we note that there has been only scant interest in the values that underlie decisions to diversify. In the psychological literature, values are viewed as concepts or beliefs that guide people's behavior (Schwartz 1992; Bardi and Schwartz 2003). The role of values in farmers' decision-making has been highlighted repeatedly by previous research. For instance, Darnhofer, Schneeberger, and Freyer (2005) investigated how values influence the decision for converting or not to organic farming, and Grubbström and Eriksson (2018) highlighted the role of values in land transfer decisions. Also, Chapman, Satterfield, and Chan (2019) indicated the importance of acknowledging farmers' values for participating in conservation incentive programs.

Accordingly, this study aims to uncover farmers' values regarding farm business development through farm diversification, and to contrast those with values underlying farmers' business development through non-diversified farm activities. We base the insights of this study on in-depth interviews, using the Zaltman metaphor elicitation technique (ZMET) (Zaltman and Coulter 1995), with a set of 23 Swedish farmers. The purpose of using ZMET in this study was to lead farmers to higher cognitive levels in their reasoning and to help them articulate aspects that had not been expressed previously. Therefore, ZMET is an appropriate approach to understanding their profound driving forces for strategic orientations and eliciting their values for farm development. Originally, ZMET was developed for marketing purposes and several studies have used it within this literature domain (Lee et al. 2009; Truong 2019; Lin and Yeh 2022). In the

agricultural literature, ZMET has previously been used successfully by Lagerkvist, Okello, and Karanja (2015) and Hansson and Kokko (2018). However, it has not previously been used to understand values underlying farmers' choices of strategic orientation.

Furthermore, in the previous literature focusing on diversification activities in agriculture, a lack of in-depth qualitative approaches was identified. In particular, existing studies that focus on farm diversification use various quantitative methods (Damianos and Skuras 1996; Evans 2009; Hansson, Ferguson, and Olofsson 2010; Barnes et al. 2015). While providing valuable insights about drivers for farm business development across large samples, these studies are not designed to provide in-depth insights into the underlying drivers or to allow for comparison of profound differences between the diversification and non-diversified strategic orientations, and thus offer limited information on farmers' individual experiences about their development activities. The present study contributes to this research using ZMET (Zaltman and Coulter 1995). This approach allows overcoming these limitations by enabling farmers to communicate their thoughts using images as metaphors in order to complement the verbal element of communication with the non-verbal. In this way, ZMET assists in understanding what farmers try to accomplish and what are the subtle differences between their decisions regarding strategic orientations. Such insights can complement the results of quantitative studies and provide a clearer picture of farmers' development decisions.

The results presented here provide insights that would be highly relevant from a policy perspective. In particular, policymakers could increase their knowledge and design policy themes for rural development and business development that align with farmers' values. This alignment will likely lead to higher acceptance of such policies because reaching a policy goal depends on farmers' willingness to embrace this goal. Also, farm advisors acknowledging these values could establish better communication channels with farmers, in the sense of a better understanding of what farmers try to achieve, something that can advance the quality and the influence of the advices. The rest of the paper is organized in the following way. In the next section, we introduce the conceptual framework, and in part three we present the analytical approach and data. Then, we illustrate the results in the fourth part, and the last section contains the discussion and conclusions.

2. Conceptual framework

2.1. Farm strategic orientations

Despite the research interest in farm diversification as evident from the literature, the concept has not been clearly identified (Barbieri and Mahoney 2009). However, many researchers consider farm diversification based on the use of farm resources such as land, labor, or capital for non-conventional farm activities or non-agricultural enterprises in order to generate additional income streams (Ilbery 1991; Barbieri, Mahoney, and Butler 2008; Hansson et al. 2013; Barnes et al. 2015). Following the conceptualization of farm diversification from prior research, the present study determined whether a farm business was diversified if it generated revenues from activities outside conventional agriculture or non-agricultural enterprises.

The above definition of farm diversification has several implications. The first is related to the unit of analysis. The literature considers three analysis units: the farm

business, the farmer, and the farm family (Hansson, Ferguson, and Olofsson 2010). The previously mentioned definition focuses on the farm business. Therefore, the approach taken in this paper should not be confused with the adjacent concept of pluriactivity, which refers to all the income-generating activities of the farmer and the farm household, and thus includes off-farm work and farmer's and farm family's involvement in additional off-farm businesses.

The second implication is related to the aspect of determining what conventional farming is in order to decide whether a farm is diversified or not. In this study, we considered conventional farming activities to be related to regular farming activities such as crop and livestock production following previous studies focusing on Swedish agriculture (Hansson, Ferguson, and Olofsson 2012). However, it should be acknowledged that the definition of conventional agriculture in this respect is time and place dependent: first, as Turner et al. (2003) highlighted, the definition of conventional farming is time dependent. For instance, organic farming used to be considered a diversified activity, but nowadays would be more suitable to be perceived as mainstream farming. Second, Barnes et al. (2015) explained that the definition of conventional farming is geographically determined because what is perceived as conventional farming can vary from place to place. Thus, these call for attention in comparison of studies between different periods and places.

The third implication is that farm diversification refers to activities outside of conventional farming. Therefore, farms that run several agricultural enterprises, such as milk and grain, are not perceived as diversified according to this definition. Hansson, Ferguson, and Olofsson (2010) found that approximately 70% of the larger Swedish farms run more than one agricultural enterprise.

In this paper, diversification is considered in relation to income-generating activities from farm resources as determined by the previous definition. Thus, farm diversification implies that a farm uses its resources to produce revenues from activities such as hospitality and agri-tourism, direct marketing (e.g. farm gate sales, farm shops and delivery rounds), processing (e.g. cheese, ice cream, bottling and yarns), renting out of farm buildings, and educational activities. This concept of diversification is similar to that of several previous studies (Ilbery 1991; Barbieri, Mahoney, and Butler 2008; Hansson et al. 2013; Barnes et al. 2015). We consider farm businesses that are not diversified in this way as focused on non-diversified farm activities. Farms in this category are likely to obtain revenue from one or more conventional agricultural enterprises, such as milk and grain, but not from the previously mentioned activities. We contrast values associated with the choice of strategic orientation across these two groups of farms.

2.2. Eliciting farmers' values

Farmers' values are related to farm diversification and non-diversified activities, and we use ZMET to elicit these values. ZMET is grounded on the premise that images are essential for stimulating thoughts, actions, emotions, and feelings. It builds on the assumption that people think in images, not words, and that 'metaphors are imperative units of thought' (Zaltman and Coulter 1995; Zaltman 1997). Images play a significant role during the interview process. They complement the verbal part of communication with the non-verbal, and encourage the interviewees to self-explore intrinsic thoughts

and feelings (Zaltman 1997). Metaphors are used in communication to illustrate or explain something in terms of something else, such as cold water in terms of color (Zaltman 1997). The metaphors allow the interviewees to use their imagination to bring out self-generated notions that are otherwise difficult to express, and to dig into higher cognitive levels and evoke deeper meanings, thoughts, and values.

A central aspect of ZMET is the laddering element, which can be conceptualized through the Means-End Chain (MEC) approach (Christensen and Olson 2002). MEC was developed to describe the hierarchical relationship between the attributes, consequences, and values of consumers' mental representation of products (Gutman 1982). Consequences are any physiological or psychological result that accrues from consumer behavior; values are defined as desired end-states of existence, and attributes are the instruments to achieve desired consequences (Gutman 1982). MEC has been used in agricultural literature to describe farmers' behavior related to various choices (Okello et al. 2014; Hansson and Lagerkvist 2015).

In this study, we construct the hierarchical links among attributes, consequences, and values using MEC. In particular, this approach serves to uncover what attributes farmers associate with their choice of farm development, what consequences are related to specific attributes, and the values farmers try to attain. Uncovering their values, we can understand farmers' underlying driving forces for farm diversification and non-diversified farm activities.

2.3. Personal values and previous value frameworks in agriculture

Farmers' values can be explained in terms of personal values. A personal value typology was developed by Schwartz (1992, 1994), and several studies have used this particular typology within agricultural literature (Hansson and Kokko 2018; Graskemper, Yu, and Feil 2022). Personal values guide people in what to perceive, how to interpret, and how to process the information (Manfredo, Teel, and Dietsch 2016). Therefore, personal values resemble a map that serves people in making decisions. Schwartz (1992, 1994), and Bardi and Schwartz (2003) developed 10 universal values (i.e. power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security) in cross-cultural research and their existence was confirmed by Schwartz and Boehnke (2004) using confirmatory factor analysis.

Moreover, other value frameworks have been developed in agricultural literature. Gasson (1973) classified farmers' values into four categories: economic or instrumental values, social values, intrinsic values, and expressive values. In addition, McInerney (2004) sought to explain to what extent economic analysis can contribute to understanding policies related to animal welfare and how market forces affect the economic actors. For this reason, McInerney (2004) and later on Lagerkvist et al. (2011), Hansson and Lagerkvist (2015, 2016) used economic theory and categorized the economic values of farmers concerning the management of their livestock into two types: use values and non-use values. Use values refer to the benefits farmers obtain from the productivity and profitability values obtained from the use of production factors, whereas the non-use values are associated with the benefit farmers may derive from their production factors irrespectively of their use in the production process. Also, Ferguson and Hansson (2013) identified three value constructs: farmer identity values, the

business-related values, and the farm-living values. The previous literature suggests that farmers are driven by financial and non-financial values, and Howley (2015) found that non-financial benefits have a substantial role in better understanding farmers' behavior across various activities. The pluralism in the values of farmers described in the literature indicates that farm development cannot be determined exclusively by one type of value.

To conceptualize farmers' motives for strategic orientation, we applied the framework of economic value (i.e. use- and non-use values) (McInerney 2004; Lagerkvist et al. 2011; Hansson and Lagerkvist 2015, 2016), coupled with insights from the personal value framework (Schwartz and Bardi 2001; Rohan 2000). Use and non-use values are related to the broader concept of economic value, which represents the benefit or utility that people derive from something (McInerney 2004). This terminology serves in our context to distinguish which decisions related to farm choice of strategic orientation are due to use values and which to non-use values. Use values in strategic orientation would relate to the benefit that farmers obtain from using their agricultural resources to achieve values related to, e.g. profit enhancement, production efficiency, cost reduction, or profitability preservation as explained previously. The main idea behind use value is that resources are essential, to the extent that they contribute through the production processes, e.g. the profitability and productivity of the farm (McInerney 2004).

Moreover, McInerney (2004), Lagerkvist et al. (2011), Hansson and Lagerkvist (2015, 2016) noted that farmers can deviate from pursuing profitability or productivity, even though they use their production factors for economic purposes. The underlying idea in their work was that farmers may enjoy providing their livestock with amenities that run counter to economic goals related to increasing the profitability or productivity of the farm business. In addition, farmers may act to preserve natural resources and heritage to satisfy their wants, irrespective of the direct use of these resources in the production process. Also, McInerney (2004), Lagerkvist et al. (2011), Hansson and Lagerkvist (2015, 2016) emphasized that farmers may derive utility from the well-being of their livestock since farmers may perceive as important the sentimental value of animals, which offsets the potential associated financial cost. In general, when farmers seem to act irrationally from a financial perspective, their actions are economically rational if they obtain utility from them. In such cases, farmers may be driven by non-use values. An additional explanation for why production factors may be approached without financial rationality, and used for choices that are not optimal from a profitability or productivity perspective, is that societies prescribe moral codes and ethics related to food and agriculture (McInerney 2004). In our case, the notion of non-use values thus implies that farmers may obtain economic value from managing their resources in a specific strategic orientation that is not related to any profitability or productivity considerations.

In comparison to the use and non-use values, which refer to the type of benefits that are associated with farmers' management of their resources, personal values as developed by Schwartz (1992, 1994), Bardi and Schwartz (2003) refer to desirable end-states. Therefore, use and non-use values may be considered end goals and reflect or correspond to specific personal values (Hansson and Lagerkvist 2015). An illustration of the conceptual framework comprising the relationship between the attributes,

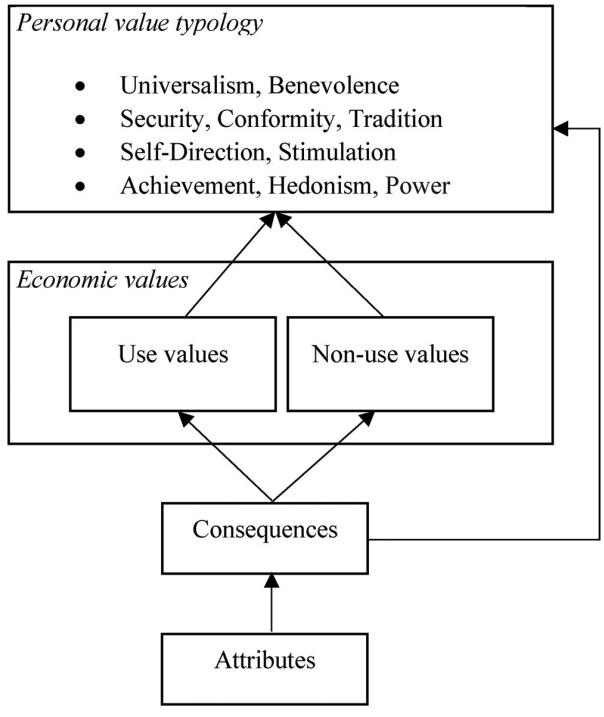

Figure 1. Presents the conceptual model linking the attributes, consequences, economic values (i.e. use and non-use values) and personal value typology according to Schwartz (1992, 1994) regarding farm business development.

consequences, and use- and non-use values for farm business development is provided in Figure 1.

3. Data collection and analytical approach

3.1. Pre-interview preparation

Prior to conducting the interviews, we obtained farmers' contact information through online sources. Then, we contacted farmers through a phone call to explain the purpose of the study. Farmers who were interested in participating in the study were further contacted via regular mail to inform them about the study procedures, and we followed up with a phone call to book an interview. Following this, we sent a letter of confirmation to those farmers who agreed to be interviewed. In this letter, we asked the farmers to collect images that illustrated the development activities they had carried out. A couple of days before the meeting, the interviewer (the second author) made further telephone contact with the farmers to remind them about the image collection and confirm the interview date. The images could be obtained from newspapers, magazines, drawings, the internet, or other available sources (Zaltman 1997). Having participants collect the images increases the representativeness of the images concerning the topic and increases the farmers' likelihood of involvement and preparedness.

The inclusion criteria for participants were determined in advance by the research team to fit with the aim of the study. In particular, the approached farmers first had to be categorized into either of the two strategic orientations, and second to live close or in the county of Uppsala. We selected farmers located within or around Uppsala for convenience regarding traveling time and because Uppsala has many inhabitants who constitute potential customers of farmers' with diversified products and services. Uppsala is located near the east coast of Sweden and approximately 70 kilometers to the north of Stockholm. The interviews were scheduled from the second week of October through the third week of December 2018. We decided to conduct all meetings within these two months to facilitate farmers' involvement, since the workload for farmers typically decreases during this period. In total, we arranged 23 face-to-face interviews, of which 10 were considered engaged in farm diversification and 13 in non-diversified farm activities. According to Zaltman (1997), four to five interviews are sufficient to gather enough MECs from which to extract reliable results. The sample included farmers practicing a variety of farming activities that are also commonly undertaken by farm enterprises in Sweden at large. For instance, dairy farms, crop farms, egg producers, vegetable growers, pig farmers, honey producers, cheese producers, wool producers, farms offering recreational and educational activities, and farms providing accommodation. Regarding the farm size, participants were operating micro or small businesses in terms of the number of employees. Whereas farm size was not part of the participants inclusion procedure, it was comparable to the average Swedish farm size in terms of employees (Jurdbruksverket 2021). Descriptive statistics of participants are given in Table 1.

3.2. Interview process

The interviews were conducted in participants' homes and ranged from one to two hours. The interview process followed the eight steps of ZMET, which are: storytelling, missing images, sorting, construct elicitation, metaphor elaboration, sensory images, the vignette, and the digital image (Zaltman 1997). At each meeting, the interviewer brought a set of pictures (8–12) relevant to the research, in case farmers had not collected images because of time constraints (for a description of the images see Table A1). In total 12 respondents used the researchers' image bank, whereas 11 respondents brought their own. In the cases that the respondents used the image bank, before step one of the interview, they chose the most representative images for them. The 'image bank' probably limited the breadth of discussion, but in step two of the interview participants were given the opportunity to

Table 1. Descriptive statistics on the 23 farmers interviewed.

Age of participants (years, average value)*	50.5
Number of male participants	17
Number of female participants	6
Number of non-diversified farms	13
Age of non-diversified participants (years, average value)*	49
Gender of non-diversified participants	female: 1, male: 12
Number of diversified farms	10
Age of diversified participants (years, average value)*	52
Gender of diversified participants	female: 5, male: 5

Note: *The average age was calculated using the base year 2019. The average age of farmers in Sweden in 2016 was 55.5 (Swedish Board of Agriculture and Statistics Sweden, 2017).

elaborate on the missing images. For instance, some farmers highlighted that some images relating to administration or network were missing, and others were pleased by the variety of images. Overall, no particular trend of missing images was found. Therefore, we can conclude that the 'image bank' covered participants' interests to a satisfactory level. The types of images that respondents prepared for the interviews were related mainly to their products, themselves, their family, their spouse, their animals, and/or their equipment.

During the first step of the interview process, the respondents were asked to justify the reasons they selected their images and how the images are related to their experiences with farm development. In other words, farmers were encouraged to describe their stories. Then, the respondents were asked to indicate if any images were missing about the topic and at the third step, to provide the major themes that were relevant for them regarding their farm business development. In the fourth step of the interview, the aim was to indicate the most important attributes for the topic, based on the previous discussion from steps one through three, and through probing questions, such as 'why is that important for you?' to generate associations between attributes, consequences, and values. Therefore, the interviewees revealed and self-generated the associations between attributes, consequences, and values, by answering the probing questions. In addition, the purpose of probing questions was to guide respondents to a point where they could not motivate further. The last point during the laddering process was taken to imply the underlying value of guiding a specific behavior (Hansson and Lagerkvist 2015). In the fifth step, the aim was to explore further farmers' thoughts about farm business development, whereas, in step six farmers were asked to use metaphors that are related to the topic in order to obtain additional insights about farm business development. In the seventh step, respondents were asked to describe their thoughts and feelings about farm business development while imagining their own story as a short movie. In the last step, the aim was to create a 'summary' image consisting of only the most relevant images, and to express the most central issues regarding farm business development.

3.3. Post-interview analysis procedure

All interviews were recorded and transcribed. First, we examined the transcripts to trace attributes, consequences, and values. Following this, we created the master codes summarizing the attributes, consequences, and values under common headings while using wording based on our elaborations. Then, we entered the master codes into the online program LadderUX to construct the implication matrix and the Hierarchical Values Maps (HVMs) (Grunert, Beckmann, and Sørensen 2001). LadderUX uses an algorithm that aggregates the frequency of direct and indirect linkages between the summarized elements. The laddering part during the interview process assisted to reveal the participants' self-generated associations between attributes, consequences, and values and thus contributed to the post-interview process by developing a 'blueprint' for constructing the implication matrix and the HVM. The HVM illustrates the most important (i.e. most frequently mentioned by the respondents) links between the attributes, consequences, and values for the two strategic orientations. The main advantage of the HVM

in contrast to the implication matrix is that the results can be more easily understood, remembered, and compared.

A key aspect in constructing the HVM is the cut-off level, which is the minimum number of times a link has to be mentioned before being illustrated on the HVM. The appropriate determination of the cut-off level is essential because it can affect the conclusions drawn from the study (Leppard, Russell, and Cox 2004). Gengler, Klenosky, and Mulvey (1995) used, as a guideline for the cut-off level, the method of 5% regarding the sample size. This method implies that the smaller or larger the sample, the lower or higher the corresponding cut-off level. Leppard, Russell, and Cox (2004) suggested the 'top-down' approach to determine the cut-off point. This approach uses different cut-off levels for the different levels of abstraction, because the number of elements gradually reduces as the level of abstraction increases. In addition, Reynolds and Gutman (1988) suggested that a cut-off value that provides the most informative and stable links among the different levels of abstraction should be selected.

The above literature thus indicates that there is no clear consensus about the selection of cut-off value. A typical strategy is that researchers seek a golden ratio between retaining as much information as possible and illustrating manageable information on HVM (Grunert, Beckmann, and Sørensen 2001). In this study, we used the same cut-off point for all levels of abstraction and assessed HVMs using different cut-off values from one through four in both strategic categories. The cut-off value of two was chosen for non-diversified farms, which means that any link appearing on the HVM was elicited at least two times from the interview material. This cut-off leads to retaining approximately 43% for all links (between attributes, consequences, and values) on the HVM. We chose the same cut-off value for farm diversification, corresponding to 45% of all links above the determined threshold. Finally, the thickness of lines in the HVM emphasizes the strength of association for the illustrated links (Lagerkvist et al. 2012).

4. Results

4.1. Non-diversified farms

After analyzing the 13 interviews representing non-diversified farms, a total of 69 ladders were obtained, with approximately 5.3 ladders per farmer. Each ladder contained nearly five elements. In total, we uncovered 705 direct and indirect links, of which 302 were above the cut-off level. The results presented in Figure 2 show that farmers perceive 15 attributes, 32 consequences, and eight values as necessary for this type of strategic orientation. The ladders circled with dashed lines indicate those that are the most prominent.

The illustration of the results in the HVM is based on farmers' thoughts about farm development. The results indicate that farmers perceived the following attributes as important in their choice of strategic orientation: 'gather knowledge', 'organic production', 'work with animals', 'farmyard', 'business owner', 'rules', 'animal welfare', 'milk production', 'development', 'peer collaboration', 'build good relationships', 'consumers', 'understand the market', 'local production', and 'family/work balance'. Several of the attributes were considered by the farmers to lead directly or indirectly to the following key consequences: 'environmental actions', 'new ideas', 'care for farmyard', 'business

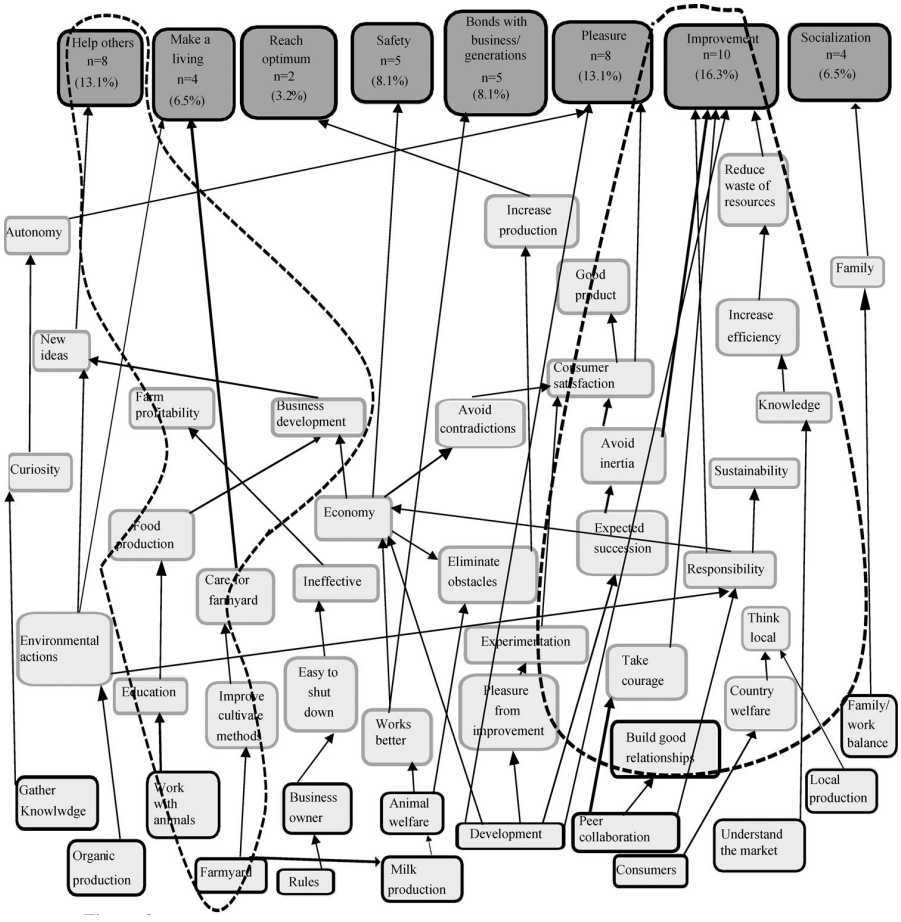

Figure 2. Hierarchical value map for non-diversified farms. The cut-off level is two and attributes are presented in boxes with the thick bold outline. Consequences presented with gray outline and values are in the boxes with thick bold outline and shaded area. The thickness of the arrows reflects the strength of association. In the values boxes, 'n' equals the number of farmers who responded that this value was a driving force for farm development, and the percentages in the parentheses show the proportion of 'n' to the total number of responses

development', 'economy', 'works better', 'eliminate obstacles', 'consumer satisfaction', 'avoid inertia', and 'responsibility'. For instance, according to Figure 2, the attribute 'organic production' leads directly to the critical consequence of 'environmental actions'. In contrast, the attribute 'work with animals' leads indirectly to the key consequence 'business development', and both attributes lead indirectly to the consequence 'new ideas'.

Furthermore, the attributes 'development', 'peer collaboration', and 'animal welfare' were perceived by interviewees to lead directly to more than one consequence each. For example, 'development' leads directly to the consequences 'economy', 'pleasure from improvement', and 'expected succession'. Moreover, the attribute 'animal

welfare' leads directly to the consequences of 'works better' and 'eliminate obstacles', and the attribute 'peer collaboration' leads to the consequences of 'take courage' and 'responsibility'. Finally, the attributes 'gather knowledge', 'rules', 'business owner', 'understand the market', 'local production', and 'family/work balance' were not connected, either directly or indirectly, to any of the central consequences as presented on the HVM, or linked to any consequence more than once. Apart from the links between attributes and consequences as described above, the HVM presents the connection between consequences and values. The consequences 'autonomy', 'environmental actions', 'new ideas', 'care for farmyard', 'economy', 'works better', 'increase production', 'consumer satisfaction', 'avoid inertia', 'take courage', 'responsibility', 'reduce waste of resources', and 'family' were perceived to link directly with the values 'help others', 'make a living', 'reach optimum', 'safety', 'bonds with business/generations', 'pleasure', 'improvement', and 'socialization'. Nevertheless, some MEC elements, such as 'farm profitability', 'good product', and 'sustainability', do not link directly to any value. Focusing on the strength of the links between the MEC elements, some elements appear to be related strongly to each other. For instance, there is a strong link between the attributes 'work with animals', 'development', 'peer collaboration', and the consequences 'education', 'expected succession', and 'take courage'. In addition, strong links were demonstrated on the HVM between consequences and values. For instance, the consequences 'care for farmyard' and 'avoid inertia' were perceived to be strongly linked with the values 'make a living' and 'improvement'. Finally, the values 'help others', 'pleasure', and 'improvement' were mentioned by farmers several times, which implies that these values may be decisive driving forces in farm development.

4.2. Farm diversification

The HVM for farm diversification in Figure 3 shows the results obtained after the analysis of 10 interviews categorized into this strategic orientation. The HVM suggests that farmers perceived 12 attributes, 36 consequences, and four values in their conceptualization of farm development. Additionally, we obtained 56 ladders, which means 5.6 ladders per farmer and approximately 4.9 elements per ladder. Out of 609 direct and indirect links, 278 were above the cut-off level. As previously, the ladders circled with dashed lines indicate those that are most prominent.

The most essential attributes elicited from the farmers for characterizing farm development are the following: 'transgenerational knowledge', 'maintain lifestyle', 'direct sales through personal contact', 'accessibility', 'farm visits', 'small-scale production', 'build network', 'own label', 'personal identity', 'organic production', 'farmer collaboration', and 'historic farm'. These discovered attributes were perceived to lead directly or indirectly to various indispensable consequences related to farm development, such as 'try new ideas', 'knowledge', 'reduced imports', 'resource management', 'agrifood education', 'think local', 'good product quality', and 'consumer'. The attribute 'maintain lifestyle' is only linked to more than one consequence, while all the other attributes connect directly to one. In addition, the attributes 'accessibility' and 'farm visits' lead to the same consequence, 'resource management', and the attributes 'own label' and 'personal identity' lead to the same consequence, 'consumer'. Even though the majority of attributes

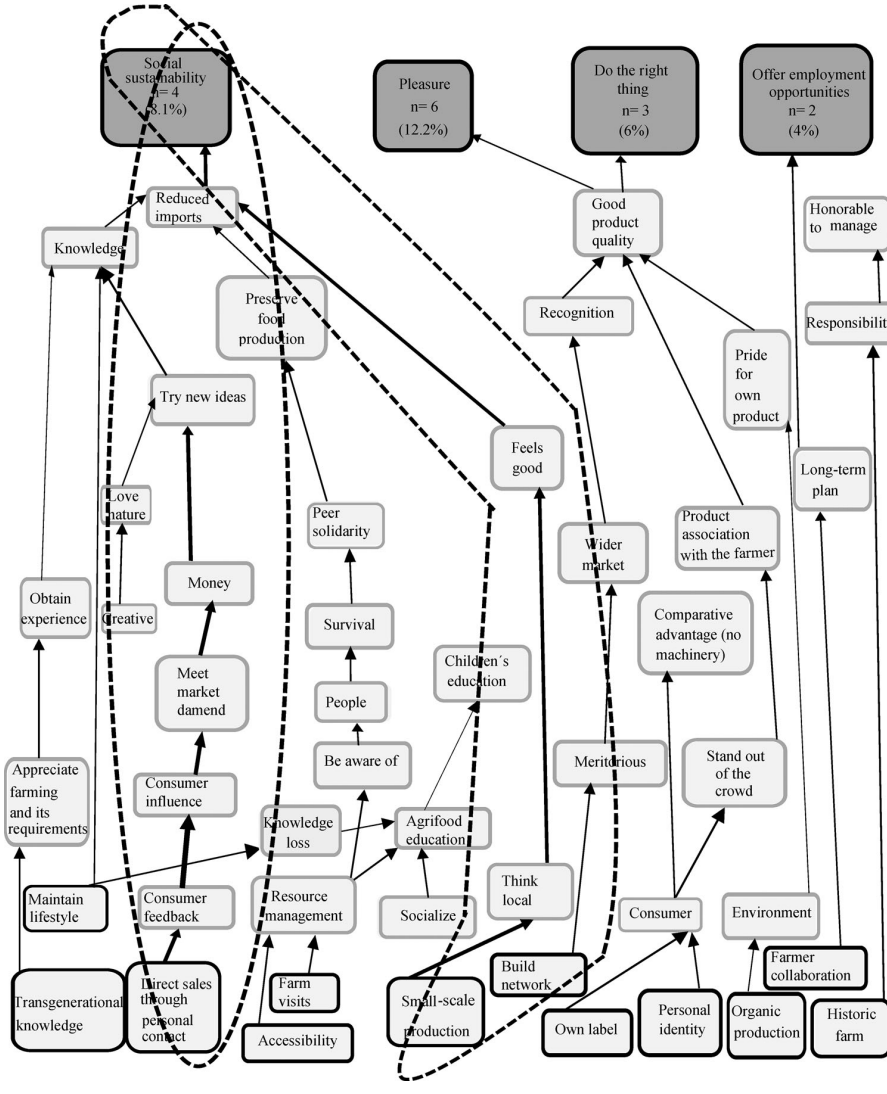

Figure 3. Hierarchical value map for farm diversification. The cut-off level is two and attributes are shown in boxes with the thick bold outline. Consequences are presented with gray outline and values are in the boxes with thick bold outline and shaded area. The thickness of arrows reflects the strength of association. In the values boxes, 'n' equals the number of farmers who responded that this value was a driving force for farm development, and the percentages in the parentheses show the proportion of 'n' to the total number of responses.

lead directly or indirectly to key consequences, the attributes 'farmer collaboration' and 'historic farm' are exceptions. Finally, the attributes 'direct sales through personal contact', and 'small-scale production' were seen by farmers to be the entry elements for the most prominent ladders on the HVM.

Regarding the connection between consequences and values, the HVM indicates that there is a direct link between the consequences 'reduced imports', 'good product quality', and 'long-term plan', with the values 'social sustainability', 'pleasure', 'do the right thing', and 'offer employment opportunities'. All the elicited consequences are linked directly or indirectly to the discovered values, except for the following five consequences: 'education', 'children's education', 'comparative advantage (no machinery)', 'responsibility', and 'honorable to manage'.

Finally, we look at the strength of association among the elements. The HVM shows that the attribute 'small-scale production' leads to the consequence 'think local', which in turn leads to the consequence 'feels good', which is connected to the consequence 'reduced imports', which leads to the value 'social sustainability', creating a chain of salient elements. In addition, as highlighted on the HVM, farmers perceive the association between the links 'direct sales through personal contact' as leading to the consequence 'consumer feedback', which in turn links to the consequence 'consumer influence, which is directly associated with the consequence 'meet market demand', which leads to the consequence 'money', and arrives at the consequence 'try new ideas', creating another chain of salient links.

5. Discussion and conclusions

In this study, we mapped the attributes, consequences, and values that farmers use to characterize their choice of farm business development strategies. The findings are useful for understanding farmers' motives for farm development throughout diversified and non-diversified farm activities, and in what manner desirable values may differ between these two groups. Identifying the farmers' values and comprehending how they differ between the two considered orientations can improve understanding of how farmers can react to and embrace agricultural policies. There has long been significant research interest in farm diversification (Damianos and Skuras 1996; Evans 2009; Hansson, Ferguson, and Olofsson 2010; Hansson et al. 2013; Barnes et al. 2015) through quantitative approaches. We used the ZMET approach (Zaltman 1997) in this study to interview farmers and elicit their values related to farm diversification and non-diversified activities, respectively. Using the ZMET approach, we were able to discover profound differences in values that may guide farmers with diversified and non-diversified activities, thus complementing quantitative methods that cannot offer such insights.

Our findings suggest that for respondents with non-diversified farm activities, the MEC element 'economy' is a key consequence. This element has a critical role in respondents' mental representations of attributes, consequences, and values, as it is connected to several attributes and consequences. Additionally, it is linked directly with the value 'safety', and indirectly with the values 'goodwill', 'reach optimum', and 'pleasure'. In the terminology of McInerney (2004), 'help others', 'pleasure' and 'safety' can be interpreted as non-use values, while 'reach optimum' can be categorized as a use value. 'Help others' can be classified as a non-use value, as it indicates that respondents do not relate this value with any concept, such as the efficient use of a production factor. 'Pleasure' can be classified as a non-use value, as it represents the autonomy that respondents receive through farming, and indicates that respondents derive utility from using

their agricultural resources to produce 'good product'. It is worth mentioning here that the consequence of 'good product' is not linked to any value. However, it could be reasonable to argue that 'good product' could be related to 'pleasure' as an end-state, but probably this link is too trivial and therefore respondents did not make this connection. Moreover, the value 'safety' can be categorized as a non-use value in the terminology of McInerney (2004) because respondents perceived 'safety' as related to notions such as economy, animal welfare, responsibility, and not as ensuring the production process. 'Reach optimum' can be classified as a use value, because it refers to notions related to increasing production and the elimination of obstacles that prevent the production process, and this indicates motivation for the efficient use of resources.

Furthermore, the results indicate that respondents perceive the value 'improvement' as an end-state for several consequences. 'Improvement' can be considered a use value in the typology of McInerney (2004) because it is linked with aspects such as reduction of resource waste (i.e. in production) and evolution of production. 'Improvement' suggests, on the one hand, that resources should be used efficiently in the production procedure and, on the other hand, avoiding stagnation of the farm business. The respondents link the value 'make a living' with the concept of caring about their fields as a production factor and with improving methods of cultivation. This suggests that 'make a living' can be categorized as a use value in the terminology of McInerney (2004) because care for farming is motivated by the monetary benefit of this asset. The final values illustrated in the HVM are 'bonds with business/generations' and 'socialization'. Both can be categorized as non-use values in the terminology of McInerney (2004), since they are not related to productivity or efficiency concerns, and indicate a more societal point of view.

The classification of the values for this strategic orientation can also be interpreted and categorized through personal value typology, as developed by Schwartz (1992, 1994), Bardi and Schwartz (2003). The obtained values 'making a living', 'reach optimization', and 'improvement' reflect that farmers care for their fields, aim to successfully earn a living, desire to increase production and reach the best production potential they can, and want to progress. These values in the context of personal values are related to 'achievement', which is defined by Schwartz (1992, 1994) as personal success through demonstrating competence according to social standards. In addition, 'pleasure' and 'socialization' are related to the satisfaction that farmers gain from farming, but also the joy when they interact with their family members. Therefore these two values can be related to 'hedonism', which is defined as pleasure and sensuous personal gratification (Schwartz 1992, 1994). Furthermore, 'help others' and 'bonds with the business/generations' are related to consequences and attributes such as no actions harmful to the environment and animal welfare, which reflect the personal value of 'universalism', encompassing notions such as understanding, appreciation, tolerance, and protection of the welfare of all people and nature (Schwartz 1992). Finally, 'safety' can be categorized with 'security' because 'security' is defined as safety, harmony, and stability of society, relationships, and self (Schwartz 1992) (see Table A2 for a summary). Linking the discovered values to personal values implies that the framework of use and non-use values corresponds to some personal values.

Turning to the respondents with diversified farm activities, the results depicted on the HVM suggested that the consequences 'reduced imports' and 'good product quality' have

a central role in respondents' mental representation of attributes, consequences, and values for farm development. 'Reduced imports' in the sense of avoiding a surplus of imports were connected directly and indirectly with various attributes and consequences that were perceived as crucial for farm development. Moreover, respondents consider 'reduced imports' to lead to the value 'social sustainability'. Using the terminology of McInerney (2004), 'social sustainability' can be classified as a non-use value because respondents perceive in it aspects such as a concern for nature, knowledge, appreciation of farming, and maintenance of food production, which is not directly related to maintaining their own production. Several attributes and consequences lead to the element 'good product quality', which in turn leads to the values 'pleasure' and 'do the right thing'. This element is part of several ladders, and respondents consequently consider it important in decisions for farm development. The value 'pleasure' is related to the utility that respondents derive from selling good quality products that the customers can recognize, but also the utility that farmers derive from being associated with their own high-quality products. Therefore, 'pleasure' can be classified as a non-use value because it is not linked with the efficient use of any production factor or anything similar. Additionally, the value 'do the right thing' can be classified as a non-use value according to the typology of McInerney (2004) because respondents perceive that providing good-quality products to their customers is a responsible choice. Also, it is not linked to the efficient use of any production factor. Finally, the value 'offer employment opportunities' is related to the non-use values following McInerney (2004) as respondents perceive that 'offer employment opportunities' would be achieved through long-term collaboration with other farmers and this may suggest that collaboration can be a way of contributing to local society.

Relating the interpretation to the personal value theory as proposed by Schwartz (1992, 1994), Bardi and Schwartz (2003), the value of 'social sustainability' can be related to the personal value of 'universalism'. The mapped value 'pleasure' linked to the satisfaction that farmers obtain from selling good-quality products to their customers can be related to the personal value of 'hedonism'. The value 'do the right thing' connected with farmers' motivation to offer a good product to customers, and contribute to their satisfaction, can be related to the personal value 'benevolence'. Schwartz (1992, 1994) defined 'benevolence' as the preservation and enhancement of the welfare of people with whom one is in frequent personal contact. 'Offer employment opportunities' connected to working with other farmers together on a plan to provide jobs can be categorized with the personal value 'universalism' (see Table A3 for a summary).

Taken together, our findings suggest that respondents engaged in non-diversified farm activities are guided not only by use values but also by non-use values. Hence, both types of economic values are associated with this choice of strategic orientation. However, respondents in the farm diversification orientation are guided only by non-use values. This indicates that farmers who choose to engage in activities outside of conventional agriculture do not consider the financial outcome of their choices as a determining factor. In addition, these results support the findings in the literature that farmers are motivated in their decisions by a range of pecuniary and non-pecuniary benefits (Howley 2015; Grubbström and Eriksson 2018). Respondents in both strategic orientations highlight the value 'pleasure'. 'Pleasure' implies that respondents are satisfied with their development activities and in both strategic orientations is linked to

offering good-quality products to their customers. 'Pleasure' may also suggest that it is important to enjoy farming as a profession. Moreover, the values 'help others' and 'do the right thing' may reflect a similar underlying meaning in the sense of avoiding actions that contribute to the environmental burden and reduce the quality that their customers receive from their products. This likely suggests that farmers take into consideration the enhancement of others' well-being, such as customers and the environment. Apart from shared values, the HVMs also revealed values that the two groups appear not to share. For instance, respondents with non-diversified activities perceive it essential to 'make a living' from farming, 'reach optimum', and 'improve' farming processes. Conversely, for farm diversification respondents, it is essential to contribute to 'social sustainability', and to 'offer employment opportunities'.

From a policy perspective, the results of this study increase the knowledge regarding the driving forces for business development and indicate that policymakers cannot perceive farm development as driven only from a profit maximization perspective. In addition, divergent values between the strategic orientations point to the need for these two groups to be approached and targeted separately. Policymakers can frame and motivate policy measures accordingly to ensure participation by the intended group. In this way, farmers could be more open to policy changes and could embrace these policies more easily. For instance, policies aiming to stimulate farm business development can be based on the bonds between the farmers, their family, and their business. Also, policies focusing on increasing job opportunities in rural areas can target farmers that are engaged in farm diversification activities.

In addition, farm advisors can benefit from using the insights provided by this study to better understand the driving forces for farm business development and, thereby to better target advice regarding each strategic orientation. In particular, results provide insights about the desired end-stages of the two considered groups of farmers. Such insights can be used to better target and focus the sessions with farmers from the different groups. For instance, farmers who need suggestions on how to operate better their diversified activities or develop further their diversified activities could be assisted by advisors on how to succeed in relation to their specific needs (e.g. create their own label or create good quality of products). In addition, farmers without diversified activities could be assisted with suggestions related to the economic aspects of the farm. Insights provided here can also be used to improve communication and interactions with farmers, something that can also improve the content and influence of advisory services. Previous literature suggests that advisory services can stimulate the adoption of rural development policies (De Rosa and Bartoli 2017). In this respect, grounded on the results of the present study, the interaction and communication between farmers and advisors may facilitate the development of agricultural businesses.

Using the ZMET approach, we gained a deep understanding of the respondents' values for farm development through diversified and non-diversified farm activities. This approach allowed for mapping differences in values between respondents in these strategic orientations under relatively similar external conditions such as that all interviewees have market access. In addition, the geography of Uppsala county, where a large city of consumers is surrounded by farms, resembles the market structure of several counties in Europe and beyond. Nevertheless, some limitations of this study, due to its limited generalizability, should be acknowledged. Farmers in other counties of Sweden or

other countries may possess different value types. Therefore, future research should validate or increase the knowledge of the values that reflect farms with diversified and non-diversified activities, both in Sweden and in a wider context, using the in-depth approach outlined in this study. Also, future studies could examine the link between farmers' values and farm size in relation to these strategic orientations. In addition, there is room for other approaches that use insights from the broad field of ethnography/sociology or quantitative studies to investigate further the differences in values between these two strategic orientations.

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Appendix

Table A1. Description of images included in the image bank.

Images	Description
Image 1.	This image depicts yellow coins stacked into columns, while the columns' height differs.
Image 2.	This image illustrates a farm tractor that has plowed a field, while it is sunset.
Image 3.	This image shows a customer pushing an empty supermarket trolley. In front of the trolley are three arrows with different colors directing up, middle, and down.
Image 4.	This image shows a farmer standing in a big field full of yellow grain ready to be harvested, while the farmer uses a tablet.
Image 5.	This image shows a green arrow, which at some parts increases and some parts, decreases. There is also a legend indicating the word 'profits'.
Image 6.	This image depicts a happy child laughing while holding cobs of corn.
Image 7.	This image shows money in paper form with a red decreasing arrow.
Image 8.	This image illustrates a few cows walking in a green cattle field.
Image 9.	This image shows a young farmer standing in a green field looking forward at the sunset, with raised hands up towards the sun.
Image 10.	This image illustrates a farmer in the sun, wearing a hat, and standing behind a bench selling vegetables.
Image 11.	This image depicts a traditional Swedish countryside house.
Image 12.	This image shows an untitled opened document with many empty cells.

Table A2. Classification of farmers' values with non-diversified activities according to Schwartz (1992, 1994) personal value typology and McInerney (2004) use and non-use value framework.

Farmers' values with non-diversified activities	Personal value typology	Use and non-use value framework
Help others	Universalism	Non-use value
Make a living	Achievement	Use value
Reach optimum	Achievement	Use value
Safety	Security	Non-use value
Bonds with business/generations	Universalism	Non-use value
Pleasure	Hedonism	Non-use value
Improvement	Achievement	Use value
Socialization	Hedonism	Non-use value

Table A3. Classification of farmers' values with diversified farm activities according to Schwartz (1992, 1994) personal value typology and McInerney (2004) use and non-use value framework.

Farmers' values with diversified farm activities	Personal value typology	Use and non-use value framework
Social sustainability	Universalism	Non-use value
Pleasure	Hedonism	Non-use value
Do the right thing	Benevolence	Non-use value
Offer employment opportunities	Universalism	Non-use value

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This thesis investigates farmers' motives and the effects of diversification strategies in Sweden. Paper I uncovers the values that underlie farmers' strategic choices for business development. Paper II examines the relationship between entrepreneurial orientation and farmers' satisfaction with business performance. Paper III investigates the role of diversification strategies in enhancing farm financial performance. Paper IV examines the impact of diversification strategies on farm-level employment and farm income variability.

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