Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

Department of Economics

Farmers' Perception of Management Accounting

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Master's thesis · 30 hec · Advanced level
Agricultural Programme – Economics and Management
Degree thesis No 1101 · ISSN 1401-4084
Uppsala · 2017

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Credits: 30 hec
Level: A2E
Course title: Independent Project in Business Administration
Course code: EX0807
Programme/Education: Agricultural Programme – Economics and Management
Faculty: Faculty of Natural Resources and Agricultural Sciences

Place of publication: Uppsala
Year of publication: 2017
Cover picture: Filip Jonsson
Name of Series: Degree project/SLU, Department of Economics
No: 1101
ISSN 1401-4084
Online publication: http://stud.epsilon.slu.se

Key words: farm management, farmer perception, management accounting, means end-chain, Swedish dairy farming, ZMET.

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Förord

Vi vill tacka vår handledare Helena Hansson, på institutionen för ekonomi, för alla värdefulla kommentarer och idéer som bidragit under uppsatsens gång. Vi vill också tacka samtliga lantbrukare som deltagit i studien för att ni bidragit med era egna personliga åsikter. Vi vill även framföra vårt tack till andra som har hjälpt till under processens gång. Ingen nämnd ingen glömd!

Filip Jonsson & Marcus Sandlund

Uppsala, Maj 2017

Summary

The agriculture sector in Sweden is undergoing a fast reformation. Due to different policy changes, the competition from foreign agriculture has increased and the number of Swedish dairy farm businesses is steadily decreasing. Sweden has got good conditions for agriculture and the Swedish food production is an important sector of the Swedish economy that employs 240 000 people throughout the production chain. The increased competition has enlarged the focus on business management within farm businesses to secure a competitive agriculture in Sweden.

In the farm management literature, the manager has previously been acknowledged as an important factor in determining farm performance based on the background that the economic performance differs among farms, even though they face similar conditions. In the business literature, management accounting is highlighted as a set of important practices for decision-making and control within the business. In the agricultural sector, the importance of management accounting has also been acknowledged, however, previous studies suggest that the usage of formal management accounting practices is low among farm managers. Instead, studies have shown that farmers tend to use their social network and experience to evaluate financial decisions. In contrary, previous studies have also shown that more successful farmers think in terms of business management. Therefore the aim of this study is to explore how Swedish dairy farm managers perceive management accounting and use it in order to manage their companies with respect to decision-making, and control.

The results of this study is based on the analysis of nine interviews with farm managers on large Swedish dairy farms. During the interviews, the Zaltman metaphor elicitation technique was used to obtain knowledge and understanding of farmer's perception regarding management accounting. The data was coded with the means-end chain theory and was displayed in a hierarchical value map, allowing for an analysis of the central attributes, consequences, goals and values of management accounting.

The results indicate that management accounting is perceived as an integrated part of farm management practices. However, instead of using formal management accounting practices, farmers rely on informal and simplified management techniques for decision-making and control. The main contribution of this study is the novel use of the chosen method and an increased understanding of management accounting in farm management practices. This increased understanding can be used to develop the field of farm management further and to secure the long-term competitiveness of Swedish agriculture.

Sammanfattning

Den svenska lantbrukssektorn genomgår en omfattande struktur-rationalisering. På grund av en rad politiska beslut har konkurrensen från utländska livsmedelsproducenter ökat. Detta har medfört att antalet svenska mjölkproducenter minskar i antal och de kvarvarande blir allt större. Generellt har Sverige goda förutsättningar för att bedriva livsmedelsproduktion och den svenska livsmedelssektorn sysselsätter 240 000 personer genom hela produktionskedjan. Den ökade konkurrensen har inneburit ett ökat fokus på företagsledning i lantbruksföretag för att säkerställa en god långsiktig konkurrensförmåga.

Tidigare litteratur har uppmärksammat företagsledaren som en viktig faktor för lönsamheten i lantbruksföretag av litteraturen. Detta baseras på vetskapen att lantbruksföretag med liknande förutsättningar skiljer sig gällande lönsamhet. I företagslitteraturen har ekonomistyrning uppmärksammats som en viktig faktor för att bistå företagsledaren med information vid beslut och uppföljning. Detta gäller även inom lantbruksliteraturen även om det har uppmärksammats att användningen av ekonomistyrning inom lantbruksföretagen är låg. Istället tenderar lantbrukare att värdesätta sitt sociala nätverk och sin erfarenhet som viktiga beståndsdelar i sin företagsledning. En paradox är dock att tidigare studier visar att framgångsrika lantbrukare tänker i banor av företagsledning. Syftet med den här studien är därför att undersöka hur svenska mjölkproducenter uppfattar ekonomistyrning och hur ekonomistyrning används för att fatta beslut och utöva intern kontroll.

Empirin i studien är baserat på nio stycken djupintervjuer med företagsledare på stora svenska mjölkgårdar. Vid intervjuerna användes Zaltman metaphor elicitation technique för att skapa kunskap och förståelse för lantbrukarnas uppfattning gällande ekonomistyrning. För att koda datan användes means-end chain teorin och resultaten sammanfattades i en hierarkisk värdekarta. Den hierarkiska värdekartan visar de centrala länkarna mellan uppfattade attribut, konsekvenser, mål och värden. Kartan möjliggör en analys av hur lantbrukarna använder och uppfattar ekonomistyrning.

Resultatet indikerar att ekonomistyrning ses som en integrerad del av företagsledningen. Dock används informella och förenklade ekonomistyrningstekniker för beslutsfattande och kontroll. Det huvudsakliga bidraget från studien är sättet att använda den valda metoden samt en ökad förståelse för företagsledning inom lantbruksnäringen. Den ökade förståelsen kan användas för att ytterligare utveckla företagsledning inom lantbruksnäringen vilken i sin tur kan bidra med att stärka konkurrenskraften i det svenska lantbruket.

Abbreviations

ABC- Activity-based costing

FA- Financial accounting

HVM- Hierarchical value map

MA- Management accounting

MAS- Management accounting systems

MCS- Management control systems

MEC- Means-end chain

SMA- Strategic management accounting

SME- Small and medium-sized enterprises

ZMET- Zaltman metaphor-elicitation technique

Table of Contents

List of figures

List of tables

1 Introduction

In recent years, the market for agricultural commodities has shifted. Dating back to 2007 the price volatility has increased due to the European Union dropping their quotas on agricultural commodities (Annerberg, 2015). This development has created a new situation for farm managers since the stable market they were used to no longer exist (Hansson & Ferguson, 2011). Swedish farming is currently undergoing a drastic change. The number of farm businesses is steadily decreasing while the remaining farms increase in size (Hansson & Ferguson, 2011). The Swedish national commission for increased competitiveness in the agricultural sector predicts that the competitiveness of foreign agriculture industries will continue to be intensified (Annerberg, 2015). Swedish food production is an important sector for the Swedish economy that employs 240 000 people throughout the production chain. Although Sweden has got good conditions for agriculture, there are challenges. The commission concluded that one of these challenges is that Swedish livestock production suffers from low profitability and has deteriorated their competitiveness internationally during recent years (Annerberg, 2015).

The increased international competitiveness fuels a fast reformation of the Swedish agricultural sector (Ferguson & Hansson, 2013). During the period from 2000 to 2015 the quantity of milk produced in Sweden has been relatively stable (see Figure 1). At the same time, the number of Swedish dairy farms has decreased dramatically (Cahlin *et al.*, 2015). This development accelerated during the milk crisis in which many Swedish dairy farms were forced out of business, due to the significant decrease in the milk price (Krumova, 2009). In the proposition for an increased competitiveness (Annerberg, 2015), the commission argues that Swedish farms have suitable conditions to compete on the world market. However, there is a need for an increased focus on business management, strategy development, and market orientation to take advantage of these conditions. Securing a competitive agricultural sector in Sweden in the future has wide-ranging implications not only for the agriculture sector but also for the economy in general. The importance of the agricultural sector in Sweden has significance also besides pure economics since the agricultural sector is also vital for securing future domestic food supply, attaining environmental and rural development goals (Annerberg, 2015).

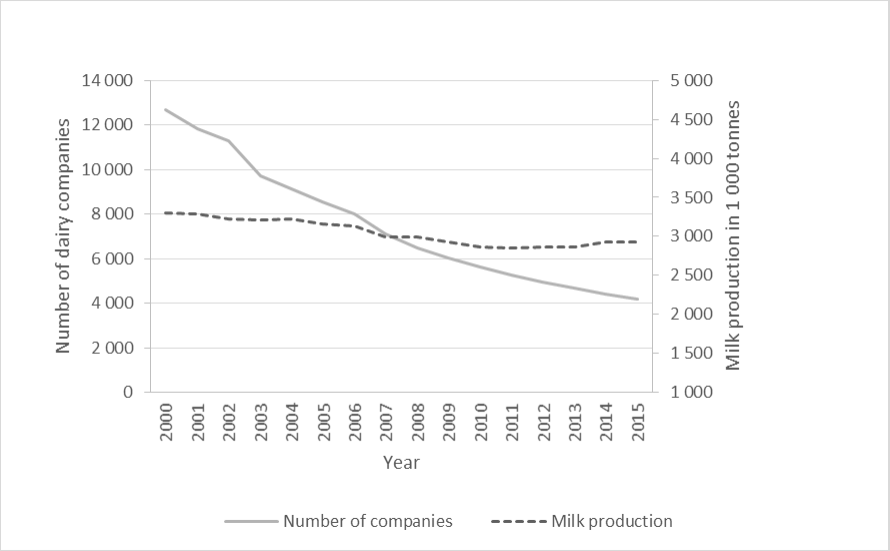

Figure 1. *Statistics from the Swedish Board of Agriculture*

In a recent publication from the Swedish University of Agricultural Science (SLU), researchers in agriculture assess the development of Swedish farm practices until the year 2030 (Andersson *et al.*, 2016). In summary, the important future aspects of farming will involve environmental concerns, technical development and a focus on satisfying consumer needs. The researchers predict that the agricultural sector will be divided into two different types of farms. Large farms, producing bulk products at a low cost, while smaller farms specialise in other values for the consumer, rendering a higher cost of production. From a business perspective, the choice of production orientation is a matter of strategy, business management and making sound economic decisions (Langfield-Smith, 1997). To make successful decisions, these should be based on accurate information and an awareness of future business possibilities (Gullberg & Gullberg, 2016). In the economic literature, the process of collecting and processing financial information is known as Management Accounting (MA). In order to make sound economic decisions, the need for, and the ability to analyse financial data relating to both internal and external factors becomes a critical success factor in management (Taipaleenmäki & Ikäheimo, 2013)

In the farm management literature, the role of the manager has been acknowledged as an important factor in determining farm performance (Manevska-Tasevska *et al.*, 2016; Mäkinen, 2013; Harling & Quail, 1990). For example, Rougoor *et al.* (1997) state that economic performance differs between farms even though they face similar conditions. In addition, Hansson (2007) concludes that the efficiency of farms differs and that there is a potential to increase the total revenue on farms less efficient than their most efficient competitors. The commission for increased competitiveness, also concludes that there are significant differences between the most efficient farms and their less successful colleagues (Annerberg, 2015).

1.1 Problem background

The purpose of MA is decision making and control (Zimmerman, 2011) i.e. pursuing the organisational strategy. In the combination of determining the organisation's future, accounting is also used to understand present implications of past decisions (Brunsson, 1990; Ansari & Euske, 1987). Relating to the importance of MA, for evaluating and steering the business, it becomes evident that MA is a central tool for the organisation in implementing and fulfiling long-term strategies (Chenhall & Moers, 2015). In the ideal world, organisations would be able to form a strategy and then implement it in a way that fulfils their objectives. However, due to a changing business environment, the strategy is often revised when new information becomes available. The process of moving the organisation from where it is today towards where it wants to be in the future will normally request a chain of actions to cover this gap. Accounting is a valued resource for firms to bridge this gap since it provides information and act as decision support. Or as Burchell *et al.* (1985) phrases it:

"[. . .] the social, or the environment, as it were, passes through accounting. Conversely, accounting ramifies, extends and shapes the social" (Burchell et al., 1985, p. 385).

Much of the research done in MA has focused on separate practices, viewed as unconnected from each other and the business context. However, a more holistic view of MA implies that MA practices form a system which operates in connection with the business context (Malmi & Brown, 2008). Chenhall (2003) argues that MA refers to a collection of practices and that Management Accounting Systems (MAS) is the systematic use of MA with the purpose of achieving an objective. Management Control Systems (MCS) refers to a broader set of control instruments, including MAS, since it also includes control of strategic and personal issues.

The broader set of control instruments is usually outside the scope of MA even though they are interlinked. This interlinkage occurs since MA is used both for decision making and control, by providing information and therefore affect behaviour (Zimmerman, 2001).

The focus of MA practice has shifted from cost control, to include more advanced techniques for measuring objectives of both financial and non-financial nature. Popular tools within MA include Activity- Based Costing (ABC), rolling forecasts and balanced scorecard (Joseph *et al.*, 1996). However, traditional MA techniques, such as budgeting, also remains popular (Burns & Vaivio, 2001).

During recent years the interest to study MA in Small and Medium-sized Enterprises (SME) has increased, and researchers have explored the positive effects of MA in SMEs (López & Hiebl, 2015). However, there exist a paradox since the same authors conclude that the usage of MA in SMEs is lower compared to the usage in large companies. The importance of MA for business performance has also been acknowledged in the agricultural sector (Carroll & Halabi, 2015). In the farm management research, the low usage paradox also exists, since the research has shown that farmers tend not to use MA as a way of managing the farm. For example, Öhlmér *et al.* (1998) state that few farmers apply simple MA techniques such as budgeting when making decisions.

1.2 Problem

During the past decade, Swedish farms have increased in size and have expanded from being single person businesses to complex organisations operating on the world market. When farms get larger and more complex the need to gather and process financial information increases, according to Manevska-Tasevska *et al.* (2016) and Fountas *et al.* (2006) a development that leads to an increased need for the farmer to use MA techniques in order to make sound economic decisions. This development implies further demands on the farmer in the role as a manager and makes management control in agriculture more complex. At the same time, several articles and investigations (Manevska-Tasevska *et al.*, 2016; Annerberg, 2015; Hansson, 2007; Rougoor *et al.*, 1997) conclude that economic efficiency differs considerably among farms and that the future competitiveness of Swedish agriculture is dependent on developing farm management practices (Manevska-Tasevska *et al.*, 2016; Annerberg, 2015). For example, the productivity, i.e. the ratio between output and input, in an international perspective is generally high in Swedish agriculture while the profitability is generally low. According to the commission for increased competitiveness, this can be explained by differences in farm management (Annerberg, 2015) which is also supported by the literature (Mäkinen, 2013; Rougoor *et al.*, 1998; Harling & Quail, 1990).

In past studies farm management and farmers' decision-making processes have been described as intuitive and based on the farmer's unique personal experience and site-specific circumstances (Fountas *et al.*, 2006). There is also evidence to support a lack of use of financial information in farm management, since farmers' perceive financial information as difficult to understand and unuseful due to the dependence on uncontrollable environmental variables (Poppe, 1991). Instead, studies show that farmers tend to use their social network and experience to evaluate financial decisions (Öhlmér *et al.*, 1998). In contrary, studies also show that successful farmers think more in terms of business management compared with their less successful colleagues (Mäkinen, 2013; Harling & Quail, 1990).

Harling and Quail (1990) states that farm management can be resembled by a "black box". Representing the incomplete knowledge about farm management and farmers' decision making. Consequently, the knowledge is limited regarding how farmers use and perceive their

financial information and formal planning tools for decision-making and control. In addition, this incomplete knowledge contributes to the fact that we are unable to provide evidence for why some farmers are more successful than others even though they have similar conditions. By exploring the use of MA in agriculture and address the issue of why farmers choose to implement certain forms of control mechanisms it is possible to illuminate the black box. Thereby providing an understanding for the use of MA in farm management and improve the understanding of farm management in general.

1.3 Aim

The aim is to explore how Swedish dairy farm managers perceive formalised management accounting and use it in order to manage their companies with respect to decision-making, and control.

Therefore, we formulated the following research question in order to fulfil the aim:

Which management accounting tools are used in large Swedish dairy farms and what are the perceived implications of their usage when relating decision-making and control?

Our intention is to use the Means- End Chain (MEC) approach to understand why farmers' decide to use different MA techniques and what the perceived implications are. The MEC approach was first developed to understand consumer behaviour in relation to product attributes, consequences of consumption and values of the consumer (Gutman, 1982). Since then the usage of the MEC theory has been applied to several other research areas (Modesto Veludo-de-Oliveira *et al.*, 2006). In agriculture research, the MEC approach has for example been used when studying farmers' decision-making in relation to animal welfare (Hansson & Lagerkvist, 2015) and the adoption of good agricultural practices (Tey *et al.*, 2015). However, the MEC approach has not been used for understanding MA practices in agriculture. By using the MEC approach, this study intends to explain the use of different MA practices by studying the behavioural aspects of management.

1.4 Contribution

According to the Swedish national commission for increased competitiveness in the agriculture sector, Annerberg (2015) argues that farm management is a key factor in shaping the competitiveness of future Swedish farming. However, farm management is an unexplored field, or a "black box" as Rougoor *et al.* (1998) point out. This study can contribute with important empirical knowledge for how farmers perceive and apply MA in their firms. A knowledge that can be used to develop the field of farm management. This is important because the profitability of Swedish agriculture, and in turn, the long-term competitiveness is dependent on the farmer's competence as a business manager (Annerberg, 2015).

The results of this study may also prove valuable for advisors in the agriculture sector. According to the commission for increased competitiveness advisors have a key strategic role in developing farm management to secure future competitiveness (Annerberg, 2015). The commission especially emphasises advisors to focus on strategic decision-making, market and sales analysis and practices for continuous economic evaluation. It is apparent that MA is an important instrument in addressing this kind of issues and it is essential for advisors to know how farmers use and perceive MA. Therefore, the empirical contribution of this study can be of value for advisors in their key strategic contribution for securing a competitive business structure in the Swedish agriculture sector.

Concerning the theoretical contribution of this thesis, previous literature has acknowledged a gap in the field of MA. According to Malmi and Granlund (2009), this gap is a result of researchers focusing on developing a "best practice" which has resulted in a gap between how practitioners use MA and what researcher suggest as "best practice". In addition, this gap has resulted in MA research having a minor impact on practice. Therefore, they argue that we need to develop our understanding of how MA is used today. This study will contribute to the overall literature by exploring MA in an agricultural context by using MEC theory. By using the MEC theory we intend to shift the focus from "best practices" to how farm managers perceive and use MA in order to improve the understanding of how MA is used.

1.5 Outline

To give the reader an understanding of what we intend to present in this thesis we have created an outline that you will find in Figure 2 below. When you reach this point in our presentation, we hope you have been given a clear indication of our problem, why this is interesting to study and what our aim is.

The following chapter, chapter two, will present a conceptual framework containing previous research in the field of MA and farm management. Chapter two will thereafter conclude with a presentation of the theory that will be used to analyse our empirical findings. Chapter three presents our methodological approach, in which we discuss our chosen methods, the ethical aspects of the research and our procedure regarding the collection of data.

Chapter four present the empirical findings from the interviews conducted. These results will thereafter be discussed in chapter five. A discussion from which conclusions are drawn, that are presented at the end of chapter five.

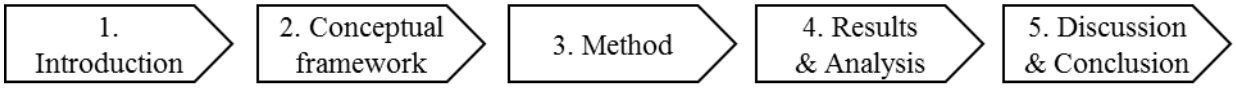

Figure 2. *The outline of the thesis*

2 Conceptual framework

Chapter two consists of a conceptual overview, exploring the field of MA. The overview establishes an understanding about previous research carried out in the field. Large companies have been the focus of much prior research in the field and therefore all aspects and findings are not relevant in the farm management context. Therefore, the literature review includes an introduction to the MA literature in SMEs and some previous findings from the general farm management literature. The chapter then continuous with a description of MA practices commonly referred to in the literature. Section 2.5 presents and introduces a framework describing the usage of the MA practices. This framework describes MA in a broader perspective, linking MA to the overall control system of the firm. The intention of this introduction is to clarify our view of MA as a system that operates alongside with the business' internal and external environment. This view of MA as a "package" or system, provides a broad, yet comprehensive approach when studying MA according to Malmi and Brown (2008). Chapter two concludes with the presentation of the MEC theory. This theory is used to analyse farm manager behaviour with respect to MA and farm control. MEC establishes a framework for understanding underlying factors determining the use and perceived implications of MA.

In general, the there are two classifications for how the literature review can be made, the systematic or the narrative (Bryman & Bell, 2015). In social science and especially in an applied field such as MA it is difficult to specify the theoretical boundaries prior to the start of the literature review. In the narrative approach the researcher can adjust the focus and during the process include, or exclude, different subjects making the narrative approach appropriate for this thesis. At the start of our process several articles, synthesising previous literature, where studied. From there, references in the texts lead to the detection of connected topics and related theories. This method of sampling is called the "snowball method" and is a process of selecting literature as the study unfolds by reference tracking (Greenhalgh & Peacock, 2005). When conducting the literature review standard databases such as Google Scholar, Science Direct, Primo and Web of Science were used.

2.1 Management accounting

As mentioned accounting can be used to make plans for the future, but accounting is also vital when evaluating present and past decisions (Ahrens & Chapman, 2007). When referring to accounting, a distinction is usually made between Management Accounting and Financial Accounting (FA). MA refers to internal accounting conducted with the purpose of providing the manager with information. The information is in turn used for managerial decision-making and performance evaluation (Bhimani *et al.*, 2008). FA is strictly regulated and prepared with the purpose of providing external stakeholders with financial information (Hemmer & Labro, 2008). External stakeholders are, for example, shareholders and the tax authority.

2.1.1 Theoretical overview

The theoretical framework within the field of MA has its origin in several other disciplines. According to Luft and Shields (2003) research in the field of MA has been divided into different streams. Each stream asks different questions and applies different theoretical frameworks. To provide the reader with a brief overview, this section reviews the central theories used in the field.

In the early days of MA, research was grounded in neo-classic economic assumptions. Researchers tried to advance the field by developing mathematical decision models, in order to construct normative models of best practice (Scapens, 1994). In these models, MA is considered to be an optimal rational procedure where the purpose is to maximise the owners' profits. This lead to a gap between research and practice and the models of best practice were criticised for being too simplistic and unuseful in the context of a changing business environment. A gap that was highlighted by several researchers such as Scapens (1994); Drury and Tayles (1995); Johnson and Kaplan (1987) as they stated that the normative textbook literature fails in predicting and explaining the use of MA practice. Hence, there was a need for the development of alternative theories to explain and predict MA practice. Since then, a development in the field of MA has occurred by borrowing theories from a wide range of research such as organisational and social theories (Bromwich & Scapens, 2016).

The classic economic theory has historically ignored the importance of managers and devoted little emphasis to strategic decisions in business (Rumelt & Teece, 1994). According to classical price theory, firms make decisions by observing market prices to determine optimal output levels. In that respect, firms act predictable and rational in relation to demand and supply. However, through the birth of strategic management accounting (SMA) the important role of the manager was recognised. A role that has been recognised as especially important for developing long-term strategies, decisions and implementing administrative structures, as emphasised by Chandler (1962), Ansoff (1965) and Learned *et al.* (1969).

Strategic management accounting

The development towards the modern MA started after a controversial article written by Johnson and Kaplan (1987). In the article, the authors stated that the relevance of MA was lost because the MAS fail to provide relevant and timely information to managers and thus fail to act as a support in decision-making situations. The authors further described their opinions in a book a few years later called *"Relevance Lost: The Rise and Fall of management accounting"*. In the book, the authors argued that MAS fail to measure costs in an accurate way since costs are distributed between products in an arbitrary and too simplistic way. Therefore, they argued that MAS are in fact reducing productivity since manager's time is wasted on understanding inaccurate measures (Johnson & Kaplan, 1991).

SMA was developed by Simmonds (1981), but SMA came to be more important following the article by Johnson and Kaplan (1987) when authors like Bromwich (1990) developed the field of SMA as a reaction to the criticism. In their research, Bromwich and Bhimani (1994) rejected the view that MA had lost its relevance, instead, they argued that the short-term and internal focus of MA was the real issue. In order to address this issue, they incorporated a long-term perspective and a broader approach towards MA.

According to Roslender and Hart (2003), Cadez and Guilding (2008), there is no agreed definition of SMA in the literature but one commonly used is the one written by Bromwich, who states that SMA is:

"The provision and analysis of financial information on the firm's product markets and competitors' costs and cost structures and the monitoring of the enterprise's strategies and those of its competitors in these markets over a number of periods." (Bromwich, 1990, p.28).

In this definition, Bromwich draws parallels to the monitoring of enterprise strategies, and therefore we realise the need to define the term "strategy". The term strategy has been defined in several ways, and one definition is made by Mintzberg (1978) who defines strategy as: *"a pattern in a stream of decisions"* (Mintzberg, 1978, p. 935). Thus, "creating fit among a company's activities" (Porter, 1996, p. 75).

The definition of SMA by Bromwich (1990) does indeed offer a broad approach towards MA. When examined closer, it becomes evident that SMA is about gathering and analysing accounting data or financial information, within the business and from its competitors, with the purpose of fulfilling the business objective. Thus, emphasising the strategic perspective of accounting and focusing both on internal and external cost structures.

According to Cadez and Guilding (2008), SMA can be viewed as a set of strategically focused accounting techniques. The common characteristics of the SMA techniques is a forward and outward perspective on accounting. Cadez and Guilding (2008) identifies 16 SMA techniques which are categorised into five groups: (1) costing, (2) planning, control and performance measurement, (3) decision-making, (4) competitor accounting and (5) customer accounting. Even though the SMA literature does not have a universally accepted definition of SMA, the consensus is that SMA constitutes of a broader set of techniques which is usually outside the scope of conventional internally focused MA.

Contingency theory

The contingency theory was developed for the purpose of explaining the observed differences in MA practice (Otley, 2016). The theory is inspired by the *"contingency theory of organisations"*, developed by Burns and Stalker (1961). The contingency theory of organisation describes which organisational structures that are appropriate in specific contexts and during specific conditions. Thus, the contingency theory in MA refers to the "fit" between the use of MA, organisational characteristic, and the business environment. Otley (2016) describes this "fit" in a good way by declaring that:

"a contingency theory must identify specific aspects of an accounting system which are associated with certain defined circumstances and demonstrate an appropriate matching." (Otley, 2016, p. 413)

Consequently, technology, strategy, organisational structure and environmental uncertainty determines the use of MA in practice and its effectiveness (Chenhall, 2003; Hopwood, 1978). According to Cadez and Guilding (2008), strategy in one of the most important contingency factor determining the use of and the effectiveness of MA. The general strategy research identifies three different organisational strategies: prospector, analyser, and defender (Miles *et al.*, 1978). With the prospector strategy, the organisation tries to exploit new business possibilities. At the opposite side of the continuum an organisation with a defender strategy tries to defend a stable market position. The analyser strategy is a combination between the two extremes, and according to Miles *et al.* (1978), the true analyser attempts to *"minimise risk while maximising the opportunity for profit"* (Miles *et al.*, 1978, p. 553).

Earlier we defined strategy as: *"a pattern in a stream of decisions"* (Mintzberg, 1978, p. 935). In the strategy research, one question is whether the pattern described is deliberate or unconscious. Mintzberg (1978) and Mintzberg *et al.* (1995) suggests that a deliberate strategy is a conscious pattern of decisions and actions which are continuously discussed. At the same time, the emergent or unintended strategy is a pattern of decisions and actions without deliberate intentions. According to Cadez and Guilding (2008), the deliberate strategy management implies a greater need for more strategic information to be provided by the MAS. The difference between deliberate and unconscious strategy is, therefore, relevant to discuss since the fact that they differ has got an effect on the MAS.

Institutional theory

An influential stream of researchers has focused on the implementation of MA within organisations by applying an institutional theory perspective (Granlund, 2001; Burns & Scapens, 2000). With this perspective, the researchers refer to MA practices as a set of rules

and routines that over time can become a given way of thinking and acting within the organisation. The institutional framework was first applied to MA by Scapens (1994) with the concern that neoclassic economics could not analyse the institutional arrangements that in turn governs the economic activity. Scapens (1994) argued that an institutional framework is useful when analysing the development of accounting practices since the focus lies in the economic change rather than the economic equilibrium. Therefore, the institutional framework is suitable when studying accounting practice, as phenomena, rather than comparing practices with theory or an "ideal" best practice. However, the institutional framework does not provide a general theory of MA behaviour, but instead, it serves as a starting point for case studies intended to increase the understanding of MA practice (Scapens, 1994).

2.1.2 Synthesising management accounting theories

Table 1 presents the different streams within the field of MA as they have been presented in the previous sections. The contingency theory often acts as a foundation in MA research implying that business surroundings are of importance for the establishment of MA practices within the firm. The SMA perspective is used as a foundation in order to highlight the broader perspective of MA as presented by Bromwich (1990). The broader definition in SMA gives a more comprehensive view since it entails both internal and external influences, linking the strategic decisions to MA. The different streams of MA research explain different perspectives of the phenomenon MA. Even though the perspectives differ, it does not mean that they contradict each other but rather that the different streams of research try to explain the same phenomena from different points of view. Altogether, the different perspectives offer a comprehensive understanding for the shaping of MA practices in organisations. The purpose of Table 1 is not to provide an exhaustive review of the theories, but instead it intends to offer an introduction to the theoretical frameworks used in MA research. Chapter two continues with a presentation of MA in SMEs.

Table 1. *Overview of different theories in management accounting*

Theoretical framework	**Institutional theory**	**Contingency theory**	**Strategic management accounting**
Description	MA consists of rules and routines "institutionalized practice".	There is a fit between organizational characteristics and MA practice.	MA is the key in achieving long-term organizational objectives.
Authors	*Scapens 1994 *Burns Scapens 2000 *Granlund 2001	*Hopwood 1978 *Otley 1980 *Chenhall 2003 *Otley 2016	*Simmonds 1981 *Bromwich 1990 *Bromwich & Bhimani 1994 *Norton & Kaplan 1996 *Otley 1999 *Roslender & Hart 2003

2.2 Management accounting in small and medium sized enterprises

In general, the use of MA is not only lower in SMEs, but it is also different compared to larger firms (López & Hiebl, 2015). In an extensive literature review, synthesising the research done on MA in SMEs, López and Hiebl (2015) conclude that the observed difference depends on factors related to the organisation, external factors, company size and sector specific characteristics. In other literature, SMEs are usually described as different from larger companies regarding structure and philosophy (Hudson *et al.*, 2001). These differences could be summarised into seven key characteristics (see Table 2). Characteristics that in combination with the factors proposed by López and Hiebl (2015) can be used to analyse the practice of MA in SMEs.

Table 2. *Key characteristics of SMEs, developed by Hudson et al. (2001)*

Personalized management, with little devolution authority
Severe resource limitations in terms of management and manpower, as well as finance
Reliance on a small number of customers, and operating in limited markets
Flat, flexible structures
High innovatory potential
Reactive, fire-fighting mentality
Informal, dynamic strategies

According to Quinn (2011), the lack of resources and adequate training among the owners of SMEs are often one explanation to the absence of MA. As a consequence, the owner lacks vital information concerning the business, leading to a management approach based on personal judgment. López and Hiebl (2015) show that SMEs tend to use MA as a way to conform to external stakeholders. For example, banks may require the company to show formal budgets and calculations when granting credits. Therefore, the preparation of the budget is not done with the purpose of providing information for internal decision-making and control but instead, acts as a way of communicating with external stakeholders.

López and Hiebl (2015) argue that companies facing strong competition and a high level of uncertainty are more keen to adopt MA techniques compared to companies facing less uncertainty. This is the case since uncertainty increases the need for correct information, that can be used in order to adjust the business strategy to changing conditions in the market. At the same time, market sectors characterised by a strong competition are often reflected by companies adopting cost leadership strategies, a strategy that increases the need for MA in order to develop a competitive cost advantage.

The majority of the literature, describing MA in SMEs put emphasis on the point that performance in these companies could be improved by a better use of MA. An interesting question is therefore why SMEs does not use MA to a higher extent. This is partly answered by López and Hiebl (2015) since they highlight the need to align the owners' knowledge about MA and FA with the systems used to control these areas of the firm. This is the case

since the implementation of a system does not automatically increase firm performance. Drawing on the conclusions by King et al. (2010) there has to be a fit between the use of MA and the organisation therein including the most important actors.

Even though the literature identifies key characteristics describing SMEs, it is relevant to conclude that the term "SME" spans from single person businesses to relatively large companies engaged in different industries. Due to the wide range of companies included in the term SME, we acknowledge that there can be differences in the use of MA since the use of MA is affected by organisational factors, firm size and sector specific characteristics (López & Hiebl, 2015). It is, therefore, relevant for us to examine the specific use of MA in a farm management context in order to get a better understanding of the organisational factors and firm-specific characteristics in the field of farm management.

2.3 Farm management

Farm management and decision-making in agriculture have been described as a "black box" (Harling & Quail, 1990). With this perception as a background, the following section review some previous research that has studied farm management and farmers' perception of MA. The purpose of this review is to shed some light on previous findings in the area. According to Puig-Junoy and Argiles (2004), farm management can be described as the practice of optimising or influencing the performance of on-farm processes under certain environmental and economic conditions. The literature suggests that farm management practice can be improved by using accounting information for planning, implementation, and control of on-farm processes, thus improving farm efficiency (Puig-Junoy & Argiles, 2004; Luening, 1989). However, farm management is complex since biological processes are heavily dependent on external factors which cannot be controlled by the manager. Nonetheless, Puig-Junoy and Argiles (2004) argues that farm management practice should be based on reliable accounting information. In addition, Galanopoulos *et al.* (2006) argue that the increased competitiveness in the agricultural sector forces farmers to focus on reducing cost and determine the efficient level of input. In the context of increased competition and stable or even falling output price, the farmers who are able to transfer input into output with the lowest cost is likely to be most profitable (Galanopoulos *et al.*, 2006).

When farms get larger and more complex the need to gather and process financial information increases (Manevska-Tasevska *et al.*, 2016; Fountas *et al.*, 2006). In an article by Fountas *et al.* (2006) the authors state that lack of data is not the primary constraint for progress in modern agriculture. Instead, they emphasise the effect of identifying the importance, usefulness, and relevance of the data that is being gathered, in order to increase farm efficiency (Fountas *et al.*, 2006; Stafford, 2000; Thysen, 2000; Brook, 1988). The need to establish what the essential and necessary information is, becomes important to support decision-making within the farm business (Fountas *et al.*, 2006). The problem is that the data used in European farming today is dispersed and therefore difficult to use according to Fountas *et al.* (2015) and Sørensen *et al.* (2010).

According to Mäkinen (2013), the use of information for decision-making is dependent on the manager's capabilities and abilities. Öhlmér *et al.* (1998) argue that Swedish farmers' rarely use management planning tools such as budgeting techniques or computer based models. Instead, farmers tend to use their social network as a way of gathering information and support for business decisions. Farmers participating in a study conducted by Harling and Quail (1990) were found to be less interested in conducting office work compared to working operationally in the production. The same applies to the managerial work of securing input

goods, which was also found to be less interesting than operational work in the farmers' perception. At the same time, these farmers were most dissatisfied with their marketing management, their scheduling of activities, their general management as well as their financial management. On the contrary, they were most satisfied with their animal husbandry, machinery and cropping practices.

Öhlmér *et al.* (1998) discuss several different explanations for the low level of adoption regarding management tools among Swedish farmers'. One explanation they find possible is that farm businesses have been protected from market forces, due to policy regulations. A situation that can explain the lack of formal management techniques in agriculture since there is less need to manage the cost structures in the firm if the output price is fairly stable over long periods of time. However today, agriculture in Sweden faces fewer EU-regulations and are to a higher degree affected by market forces which imply that the importance of management tools are likely to increase (Öhlmér *et al.*, 1998).

From the articles of Harling and Quail (1990) and Öhlmér *et al.* (1998), some parallels may be drawn to the seven key characteristics of SMEs, presented in Table 2. Farmers seem to be less interested in the use of management planning tools and tend to be more interested in the operation of farm equipment and cropping practices. Thus, the personal interests and characteristics of the farmer seem to be a key component of the personalised management behaviour and its practice. A component that has been disregarded in the general farm management literature were the focus is resource management in order to maximise profits (Mäkinen, 2013; Rougoor *et al.*, 1998). According to Hansson (2007) and Rougoor *et al.* (1997) performance among farms differ even though they face similar conditions. This might be explained by the fourth production factor, "management" according to Rougoor *et al.* (1997). In which the other three production factors are capital, labour, and land in accordance with neo-classic economics.

Since the article by Öhlmér *et al.* (1998) more recent research has explored the connection between the quality of the farmer's decision-making process and farm efficiency. According to Trip *et al.* (2002), farmers' decision-making process can be divided into four steps: (1) goals and policies, (2) quality of planning, (3) quality of data recording and monitoring and (4) quality of evaluation. Since MA is used for both decision-making, evaluation of past decisions and control, the result from Trip *et al.* (2002) show that the farmers' ability to record and evaluate data is associated with farm efficiency and managerial capacity is interesting. Likewise, Hansson (2008), Manevska-Tasevska and Hansson (2011) notice the connection between monitoring the result of past decisions and farm efficiency.

Similarly, in the general literature on SMEs, there are empirical findings supporting that MA provides managers with valuable information (López & Hiebl, 2015). Thus, relating MA to the performance of the manager. At the same time the unwillingness among farmers to use formal planning tools, described by Öhlmér *et al.* (1998), may refer to the informal and dynamic strategies that normally characterise SMEs (see Table 2). If we define MA in a broad perspective, including budgeting, cost management and the use of performance measures, the findings made by Öhlmér *et al.* (1998) may indicate that the use of MA among farmers is low. This would then implicate that farmers, as business managers, lacks important information to evaluate and manage their firms' performance. However, taking into account the increasing size of large Swedish farms, this growth should be an indication for increased usage of MA techniques and that the usage has become more sophisticated. This argument is based on an extensive literature review conducted by López and Hiebl (2015), where they found that an increase in firm size had a positive effect on the use of MA.

2.4 Management accounting practice

In the following section, four MA practices will be presented individually. The balanced scorecard and benchmarking represent techniques supporting the manager with both internal and external performance measures providing an overview of the firm performance in relation to other actors. Budget is presented because it is one of the most commonly used MA practice. Cost management is presented since it is a crucial part of management and can provide valuable information regarding pricing of products and make or buy decisions (Bromwich & Hong, 1999).

2.4.1 Balanced scorecard

The performance measurement system named the balanced scorecard was initially developed by Kaplan and Norton (1992) and is a multi-dimensional tool for performance measurement, interlinked with the organisational strategy (Otley, 1999). The balanced scorecard emphasises the use of financial measurements in combination with non-financial measurements. Were the financial measures provide information on actions already undertaken. These financial measures in complement with operational measures of non-financial character drives future financial performance (Kaplan & Norton, 1992). The balanced scorecard is designed to give managers a fast yet complete view of the business by combining key measurements from four different perspectives of the firm. The four perspectives in the framework are defined as: the financial perspective, the innovation and learning perspective, the customer perspective and the internal business perspective (see Figure 3).

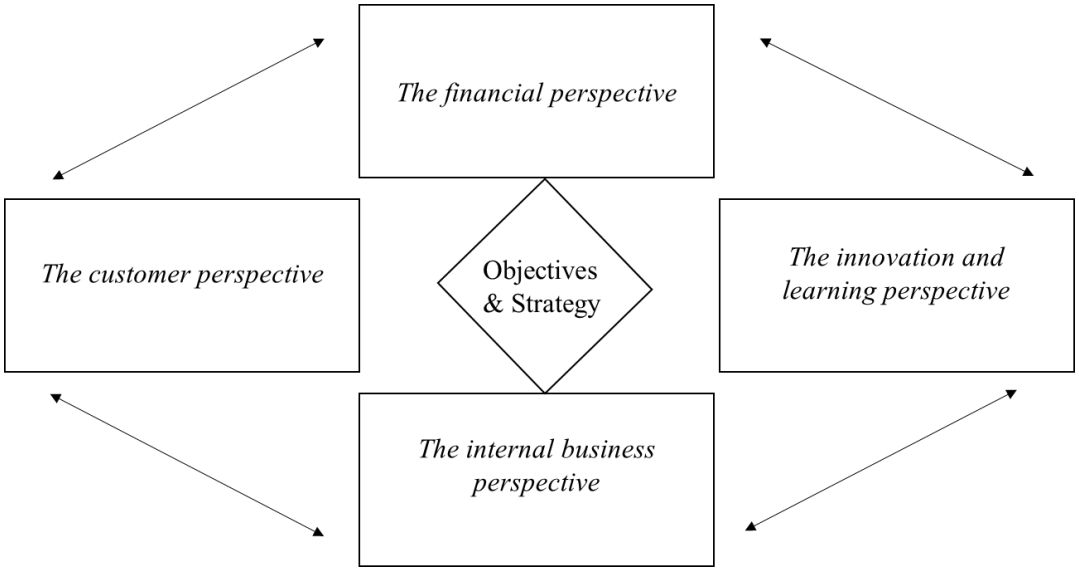

Figure 3. *Balanced scorecard developed by Kaplan and Norton (1992)*

In this thesis, we choose to present the balanced scorecard as a process, even though there have been suggestions to design the balanced scorecard as a linear chain (Otley, 1999). But, as argued by Otley (1999), the idea to present the balanced scorecard as a chain of events is a simplification of reality. Thus, the chosen exposition gives better emphasis to the general idea of the balanced scorecard, i.e. that all performance measures need attention in order to make the balanced scorecard a meaningful tool.

According to Kaplan and Norton (1992) the key insight, provided by the balanced scorecard, is that operational and financial performance is interlinked. As a result, it can help managers to notice the risk of sub-optimal behaviour. If managers were to focus on only financial or non-financial measurements respectively, an improvement in one area could be achieved at

the cost of the other. However, by combining different measures managers can reassure that business activities are in line with the long-term strategy.

When reflecting on the usefulness of the balanced scorecard, one key question is, which criteria managers should use in order to select different performance measures. The obvious answer is that the performance measures need to reflect the overall business strategy. Or as Kaplan and Norton (1992) puts it, *"what you measure is what you get"* (p. 1). In the literature concerning balanced scorecard, there is little emphasis given to the choice of specific performance measures. However, Kaplan and Norton (1996) assume that there is a causal relationship between the measures. A relationship that is described in Figure 4.

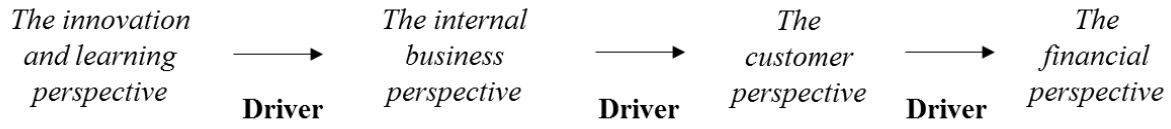

Figure 4. *The cause-and-effect relationship developed by Kaplan and Norton (1996)*

Since Kaplan and Norton (1996) assumes that there is a cause-and-effect relationship the implication is that measures in the perspective of innovation and learning are the drivers of measures in the internal business perspective. The causal relationship, therefore, suggests that the measures in the previous perspective are the drivers of the measures in the next perspective. This assumption is important to notice since the cause-and-effect relationship allows for the non-financial measures to predict future financial performance. This creates the strength of the balanced scorecard according to Kaplan and Norton (1996). They also state that a well-developed balanced scorecard should have a mix between leading and lagging indicators to be as useful as possible.

Kaplan and Norton (1996) argue that the balanced scorecard is a powerful tool for linking strategy to action and predict future financial performance. However, the strength of the balanced scorecard is dependent on the assumption off the cause-effect-relationship, previously described. According to Norreklit (2000), the assumption behind the relationship between drivers and outcome measures in the balanced scorecard is invalid. Thus, faulty performance measures lead to dysfunctional organisational behaviour (De Haas & Kleingeld, 1999). Instead of assuming a cause-effect-relationship, Norreklit (2000) argues that the four different areas are interdependent. For example, the degree which to invest in internal business development is dependent on the financial situation. On the other hand, the internal business processes will affect the financial result, creating an interdependent relationship between the different areas.

When constructing a balanced scorecard, the organisation objectives and strategy are taken for granted. According to Norreklit (2000), the balanced scorecard is a hierarchical top-down model that assumes that the strategic plan is the "right" one. However, in contingency theory, a strategy is viewed as a contingent variable that change over time, which in turn affect the performance measures (Langfield-Smith, 1997). To preserve an adequate "fit" between objectives, strategy and performance measures, managers need to consider the balanced scorecard as a dynamic tool. Thus, acknowledging that performance measures affect the definition of the company strategy which in turn affect which performance measures that are considered to be important for the company.

2.4.2 Budget

Budget is one of the most commonly used and extensively researched MA practice. In the literature, it is described as the cornerstone of MA practice (Covaleski *et al.*, 2006; Luft & Shields, 2006; Hansen *et al.*, 2003). Companies use budgeting for numerous purposes,

including planning, allocation of resources, coordination of activities and performance evaluation. Budgeting is simply defined as the process of balancing the two elements of revenues and costs (Otley, 1999). The underlying assumption is that organisational objectives are to be achieved and that output is fairly given. Thus, the process of budgeting, in its simplest form, is about determining a suitable level of costs.

Even though widely used, budgeting has undergone a heavy criticism for being a top-down command-and-control tool which is rarely strategically focused (Neely *et al.*, 1995). In a dynamic rapidly changing environment the function of an annual budget, as a planning tool, quickly becomes outdated. However, the need for managers to weave together the organisations different activities into one comprehensive and predictive plan remains (Hansen *et al.*, 2003). According to Neely *et al.* (2001) and Otley (1999), the budget is one of few techniques capable of linking the whole organisation into one comprehensible summary.

In response to the criticism against budgeting several modifications of the traditional budgeting have been established, customised to serve as planning tools for organisations in a dynamic environment (Hansen, 2011; Hansen *et al.*, 2003). Rolling forecasts can, on the contrary to traditional budget, cover any time period and is usually updated in incremental steps. The rolling forecast is therefore not produced on an annual basis, but instead, it is constantly updated. Thus, it can produce enhanced forecasting capabilities (Hansen, 2011).

The most radical model is the "beyond budgeting" approach, for a review see for example (Østergren & Stensaker, 2011; Hope & Fraser, 2003; Hope & Fraser, 2000). The principle behind the beyond budgeting approach is that traditional budgeting is too inflexible to reflect the fast changes of the modern economy (Hope & Fraser, 2003). Thus, inflexible budgets lead to dysfunctional behaviour when management is based on out-to-date forecasts (Hansen *et al.*, 2003). Instead, Hope and Fraser (2003) suggest that organisations should focus on key performance indicators. The idea behind key performance indicators is to combine financial and non-financial measures that can be used to compare the performance of the company to one of the competitors as well as internally between different units.

The different approaches of budgeting could be examined with the framework of the contingency theory. That is, every organisation has to design their use of MA in a way that fits the condition the company is facing. Following the arguments of Anthony *et al.* (2014), not all companies operate in a fast changing market that demands quick responses to certain market conditions. Thus, the appropriate budgeting technique is derived from organisational and environmental characteristics. We summarise this relationship in Figure 5 by lending the figure from Covaleski *et al.* (2006).

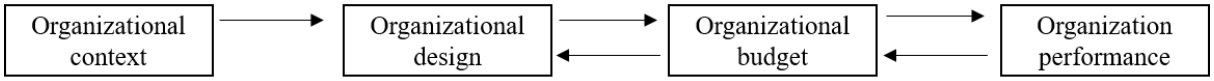

Figure 5. *Budgeting in relation to organisational factors (Covaleski et al., 2006)*

2.4.3 Benchmarking

The importance of benchmarking has been highlighted in the field of MA as a way of formulating competitive short-term performance targets which are linked to long-term strategic goals (Chenhall & Langfield-Smith, 1998; Langfield-Smith, 1997). In the farm management literature, the farmer's network has been described as important for both planning and evaluation. According to Öhlmér *et al.* (1998), farmers tend to compare and evaluate their decisions with persons in their network and use this as a management tool for benchmarking their farms.

The SMA literature encourages managers to focus on both the internal and the external perspective of the business. Since balanced scorecard is designed to make an illustration of key performance measures within the business. Benchmarking serves as a mechanism of comparing these performance measures with external competitors (Langfield-Smith, 1997). Although benchmarking usually focuses on competitors (Neely *et al.*, 1995) it is not solely restricted to competitors. Neely *et al.* (1995), argue that there are four basic types of benchmarking: (1) *Internal,* comparison between different units within the business. (2) *External,* the most beneficial form of benchmarking, although the collection of data may prove difficult. (3) *Functional,* benchmarking among companies similar without being direct competitors. (4) *Generic,* comparison of truly generic, overall, business procedure i.e. accounting, marketing.

In the literature, connections have been made between firm performances and benchmarking. It has been argued that benchmarking leads to outstanding performance since companies can adopt and develop business practice from market leading competitors (Drew, 1997). According to Drew (1997) benchmarking is not just comparison through imitation of strategy and business practice. Instead, the author argues that benchmarking is a process in which companies can develop improved strategic thinking and an ability to change. This relates to the framework of benchmarking proposed by Voss *et al.* (1992) which suggest that companies should continuously benchmark themselves along four dimensions: (1) product innovation, (2) product development (3) process innovation, (4) technology acquisition.

Although benchmarking has been related to increased performance and is a central tool for innovation within organisations (Elnathan *et al.*, 1996). Critics have argued that benchmarking does not impose a market leading position for the individual company, since benchmarking as such enact companies to follow the development instead of leading it (Anderson & McAdam, 2004). Traditional benchmarking has also been criticised for focusing on financial lag indicators, making companies behave in a reactive way instead of focusing on proactive measures. However, by studying the best practice of others, companies can identify which processes should be the target for improvement (Elnathan *et al.*, 1996). This, in turn, can lead to new ideas of how to further developed a certain process, thus making benchmarking a catalyst for continuous development and a cost-efficient way of developing internal processes.

2.4.4 Cost management

Cost management is a crucial part of management since costing systems provide information on pricing, choice of products produced and make or buy decisions (Bromwich & Hong, 1999). Failure to measure and assign cost in an accurate way results in incorrect information which increases the risk for managers to make irrational business decisions. The issue of allocating cost in an accurate way increases when organisations grow larger and more complex. Consider for example a company with two divisions. The process of allocating indirect costs of the support functions, to the divisions, in turn, affect the relative profitability of the divisions. Hence, if indirect costs are assigned in an incorrect way the manager gets misguiding information that affects the decision making. The consequence of these misleading cost figures is that managers fail to realise the correct cause-and-effect relationship between actions and costs (Bhimani *et al.*, 2008).

The process of measure and assigning cost in an accurate way is also vital for determining the price of internal business transactions. In general, transfer pricing is an issue of determining the effective level of trade between separate business units (Holmstrom & Tirole, 1991). When the product traded between business units also is traded on a competitive market, information regarding the market price is sufficient to determine the internal transfer price. In

the case where there exist no competitive market price, the internal transfer price can be determined by the cost-based transfer pricing model (Baldenius *et al.*, 1999). When making strategic make-or-buy decisions, managers are dependent on the cost system to provide accurate information to be able to determine if the business should buy a certain input or produce it internally.

The cost management literature is immense, however, in the scope of this thesis, the ABC-method will be introduced. Proponents argue that ABC is a vital tool for tracking overhead costs and assigning them properly to cost drivers (Ittner *et al.*, 2002). Making ABC an important tool for strategic decisions by providing accurate information for decision-making and control (Cagwin & Bouwman, 2002).

Traditional cost systems usually use direct costs, *direct labour, and direct material,* that are based on volume as the base for assigning indirect costs between cost objects, *products or services*. However, there is no guaranteed cause- and- effect relationship between the products volume based direct cost and the indirect overhead cost (Cooper & Kaplan, 1991). For example, newly introduced low resource demanding products might instead demand plenty of marketing resources. Therefore, it can be argued that traditional cost system usually assigns indirect cost in an arbitrary and simplistic way since indirect cost is not dependent on volume (Bhimani *et al.*, 2008).

In the ABC model, the cause-and-effect relationship is the key to addressing costs. The reasoning is that only costs that can be assigned via a cause-and-effect relationship should be addressed to a certain product (Bhimani *et al.*, 2008). Central concepts in ABC are activities and cost drivers (see Figure 6). The company constitutes of several activities divided into a hierarchical activity map. Cost drivers constitute the link between activities and cost objects and are therefore the key to assign costs. The process of assigning indirect costs begins with a sectioning off different activities and choosing cost drivers that in turn distributes the cost to different cost objects.

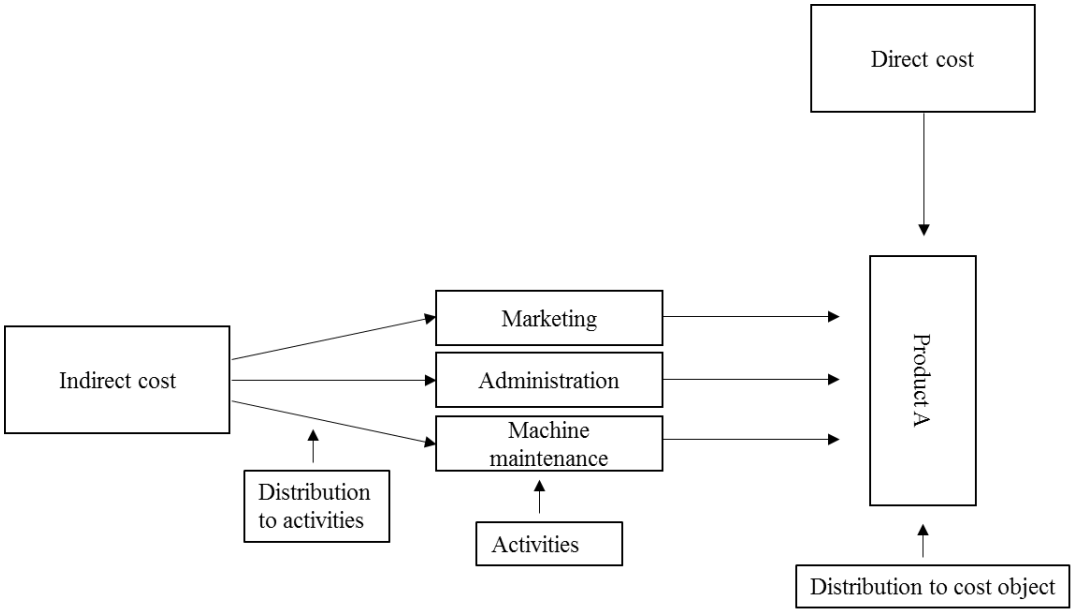

Figure 6. *General model of ABC developed by Ax et al. (2009)*

In Figure 6 the process is described in general. However, we use an example to clarify how activities and cost drivers can be used in farm management. The example concern a farm constituting of both dairy and grain production. The cost of financial reporting is considered as an indirect overhead cost that is assigned to the activity of management. The problem

remains how to divide the indirect cost between the dairy and grain production. In this example, the number of financial transactions is used as the cost driver of the financial reporting.

2.5 Management control systems

This section synthesises MA as a system that is related to the overall MCS (see Figure 7). As previously described MA is viewed as a collection of different practices and MAS is the systematic use of MA practices with the purpose of obtaining an overall objective (Chenhall, 2003). MCS refers to a broader set of management control practices. In this thesis, MCS is understood as a system that *"include all the devices and systems managers use to ensure that the behaviours and decisions of their employees are consistent with the organisation's objectives and strategies"* (Malmi & Brown, 2008, p. 290).

2.5.1 Framework of management control systems

Figure 7 presents MCS as a framework consisting of five types of control: cultural control, planning, cybernetic control, reward and compensation and administrative control (Malmi & Brown, 2008). Figure 7 also maps the tools available for the manager to use in order to establish both formal and informal control.

<table>
<tr><td colspan="6">Culture control</td></tr>
<tr><td colspan="2">Clans</td><td colspan="3">Values</td><td>Symbols</td></tr>
<tr><td colspan="2">Planning</td><td colspan="3">Cybernetic control</td><td rowspan="2">Rewards and compensation</td></tr>
<tr><td>Long range planning</td><td>Action planning</td><td>Budgets</td><td>Financial performance measures</td><td>Non-financial performance measures</td><td>Hybrid performance measures</td></tr>
<tr><td colspan="6">Administrative control</td></tr>
<tr><td colspan="2">Governance structure</td><td colspan="2">Organizational structure</td><td colspan="2">Policies and procedures</td></tr>
</table>

Figure 7. *A framework of management control systems by Malmi and Brown (2008)*

Cultural control refers to a set of norms and beliefs that influence organisational behaviour and is shared by the members of the organisation, thereby creating a mutual organisation culture. Cultural control is illustrated at the top of the model, suggesting that the organisational culture is hard to change and that it affects other forms of control by providing a contextual frame. *Planning, cybernetic control, reward and compensation* are the forms of control that are the most closely related to MA. The *planning* is a form of ex-ante control aiming at directing organisational behaviour and enlighten the performances that have to be achieved to fulfil organisational goals.

Cybernetic control refers to the use of both financial and non-financial measures to provide information and decision support for the manager, thus guiding the organisational performance. The organisational performance is, in this case, a combination of the terms effectiveness and efficiency, that can be quantified into different performance measures (Neely *et al.*, 1995). According to Neely *et al.* (1995), effectiveness refers to the extent to

which the organisation can satisfy its customers' requirements. That is, the ability to supply the market with the demanded product or service. In turn, the term efficiency refers to the measure of the organisation's ability to utilise its resources when providing a given level of output. Even though measurement may refer to the process of quantification, the underlying idea is to stimulate action. Hence, the performance measures need to align with the organisational strategy to provide a consistency of action.

Budgets create the foundation of MCS in most organisations because of the ability to provide a complete picture of the organisation in one comprehensive plan (Neely *et al.*, 2001; Bunce *et al.*, 1995). Financial performance measurement systems is a form of target setting which often refers to measures of organisational efficiency i.e. the ability to utilise resources. Non-financial measurements can be used to identify the drivers of financial performance. These measures can, in turn, be combined in hybrid performance measurement systems, for example, the balanced scorecard.

Rewards and compensation refer to the function of motivating and affecting organisational behaviour by rewarding activities that is believed to increase firm performance and are in congruence with the organisational goals. Rewards are often linked to cybernetic control in the sense that performance targets, which in turn govern the rewards, are often derived from financial measures and budgets.

Administrative control systems are the process of deciding and monitoring behaviour by identifying how tasks are to be accomplished and also determining who is responsible for the accomplishment of certain tasks i.e. the standardisation of work practices (Malmi & Brown, 2008). Organisational structure refers to the level of decentralisation, the degree of vertical and horizontal integration and the specialisation of different functions (Flamholtz, 1983). Organisation structure determines the frame in which the organisation operates and the relationship between different business units and therefore act a strategic response to the business environment. The governance structure relates to the board structure within the company, and it also includes the formal lines associated with authority and accountability (Abernethy & Chua, 1996).

By presenting the MCS framework developed by Malmi and Brown (2008) the intention is to show that MA cannot be studied without considering the overall control systems in the firm. For example, if the study focuses on budgeting and does not consider other aspects of the MAS there might be contradictions occurring in the results of the study (Chenhall, 2003). These contradictions can be a consequence of the narrow approach used in the study. Therefore, it is important to consider the practices conducted by the company with respect to each other and their relation to the overall MCS. Since a study with a narrow scope might miss the most important aspects of the MCS.

Building on the reasoning by and Malmi and Brown (2008) the five elements in the MCS are closely interlinked, and the design of the MAS is interdependent with other organisational variables as well as the environment surrounding the organisation. The intention with the usage of this framework is to discover the links between different MA practices, the implications of these practices and the relation to internal and external factors. These links are more interesting to examine than studying the adoption and implications of individual MA practices within the firm.

2.5.2 Contingency factors and the perceived usefulness of the management accounting system

The framework developed by Malmi and Brown (2008) stresses the importance of internal factors affecting the design of both the overall MCS and the MAS. The contingency theory

describes the importance of both internal and external factors affecting the design of the control system in the firm as has been previously introduced. In this thesis, the framework developed by Chenhall and Morris (1986) will be used to explain the effect of contingency factors affecting the perceived benefits of a MAS. Contingency factors are referred to as contextual factors which in a complex interrelationship influence the design of the MAS. The framework presented in Figure 8, extends the analysis of the firm MAS beyond the internal focus of the framework developed by Malmi and Brown (2008). Thus, extending the possibility to conduct a comprehensive analysis of the factors influencing the design of the MAS and its perceived usefulness.

The framework of Chenhall and Morris (1986) describes the relation between three contextual variables: environmental uncertainty, organisational interdependence, and decentralisation. The perceived usefulness of the MAS is considered in four dimensions: scope, timeliness, aggregation and integration.

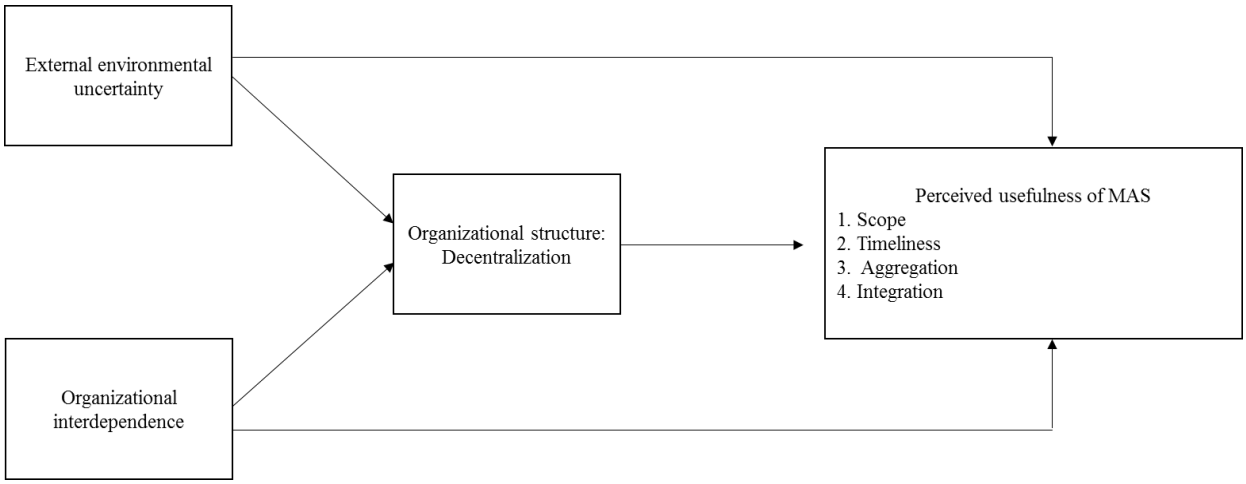

Figure 8. *The contigency model of the perceived usefulness of management accounting systems (Chenhall & Morris, 1986)*

Scope refers to the orientation of the MAS and is traditionally focused on internal, financial measures that are based on historical data (Chenhall & Morris, 1986). A broader scope of MAS would include non-financial measures of a future-oriented character, also accounting for competitors and market changes. One example of this kind of MAS is the balanced scorecard. Chenhall and Morris (1986) propose that all three contextual variables affect the perceived usefulness of a broad scope MAS. Environmental uncertainty is likely to increase the need for future-oriented measures were the focus of the information is the causes of uncertainty (Govindarajan, 1984). Uncertainty also makes planning and control practices more difficult since future events become more unpredictable and static planning tools, such as budgeting, quickly becomes outdated. The level of decentralisation and interdependence between sub-units also increases the complexity of the organisation, thus the need for coordination and alignment of the variety of the decisions made by people further down in the organisation increases.

Timeliness of the MAS affects the ability for managers to respond rapidly to events (Chenhall & Morris, 1986). A Timely MAS is a system which can provide fast feedback on decisions and provide the most recent information to support future decision making in the business. Uncertainty is the contingency variable assumed to affect the perceived timeliness of the MAS. Hence, uncertainty increases the perceived usefulness of timely information because of the need for fast responses to unpredictable events increases.

Aggregation refers to the summation for how the information is presented. The MAS can provide information in a range of aggregations, from a bunch of unprocessed data to highly aggregated data that is focused on specific business units or products. Formal decision models, such as linear programming and simulations, is an additional type of aggregated data in this case. Chenhall and Morris (1986) suggest that uncertainty and the level of decentralisation affect the perceived usefulness of aggregated information. Hence, in organisations that face a high level of uncertainty and have a high level of decentralisation, aggregated measures is perceived as useful because decision models can assist managers in handling the uncertainty.

Integration- coordination between different business units is one important part of the organisational control. Specific MAS characteristics may contribute to the ability to coordinate. For example, an integrated MAS can provide information for how decisions affect operations throughout the business, spanning over several units. Thereby, showing how decisions made in one unit affect the others within the business, providing a comprehensive picture that makes it possible for the manager to make decisions that are the most beneficial for the overall business. Chenhall and Morris (1986) propose that the perceived usefulness of an integrated MAS is higher in more decentralised organisations with high organisational interdependence.

In addition, the literature suggests that one recurrent variable affecting the perceived usefulness of the MAS is the firm size (Cadez & Guilding, 2008). When a company expands the problem of controlling the business, communicate with employees and evaluate firm performance becomes more difficult. The increased size, therefore, results in more formal and sophisticated MAS reflecting the increased complexity of the communication and control process.

To summarise, Malmi and Brown (2008) presents a framework that acknowledges that the MAS is a part of the overall control system in the firm. A control system that is used for both decision making and control. Malmi and Brown (2008) also presents what characteristics of the firm that influence the design of the overall MCS. The framework by Chenhall and Morris (1986) also extends our analysis to include environmental factors and extend the analysis of the internal factors, i.e. interdependence and decentralisation. Therefore, these two frameworks in combination allow an analysis of the MAS of a firm in relation to internal and external contingency factors.

2.6 Means- end chain

So far this chapter has presented four MA practices and linked them to the overall organisational MCS. This section presents the MEC model with the purpose to provide a theory that explains the behavioural aspects of farm management. In this thesis, the MEC model is applied to understand why farmers' decide to use different MA techniques and what the perceived implications are.

The MEC theory was first developed to explain how consumer values affect consumer behaviour when making consumption decisions (Gutman, 1982). The *means* refers to a product or activity, and the *ends* refer to a preferred state of being i.e. secure, happy, confident. The *chain* provides a link between the means and ends, thus explaining how different means (attributes, consequences) can contribute to the realisation of preferred end-states (Gutman, 1982). The MEC approach has previously been used when conducting research in the agriculture sector. Tey *et al.* (2015) used the MEC model to study the adoption of good agriculture practice certification schemes. Hansson and Lagerkvist (2015) studied

dairy farmers' decision to work with animal welfare, and Lagerkvist *et al.* (2012) studied the use of pesticide in fresh vegetable production by using an MEC approach. However, the model has not been used to study farm MA techniques. Although the MEC approach has not been used to study farm managers behaviour with respect to MA, Langfield-Smith (1997) and Chenhall (2003) emphasise the need to include behavioural aspects when studying the usage of MCS. The study of the behavioural aspect can provide key insights for how MCS are designed and used. This is done by providing information regarding the perceived usefulness of these systems in the farmer's view.

The model consist of four assumptions: (1) people simplifies choices and reduce complexity by grouping products and activities into clusters. (2) The preferred end-states (happy, secure, confident) play the main role in determining patterns of decisions. (3) All decisions have consequences, and (4) people acquire knowledge in order to determine specific consequences associated with specific actions (Gutman, 1982).

The model (see Figure 9) distinguishes between functional and psychosocial consequences (Peter & Olson, 2010) that can be positive or negative, direct or indirect (Gutman, 1982). Functional consequences refer to tangible functions of a product or service, in contrary psychosocial consequences refers to intangible aspects (emotional) of the product (Peter & Olson, 2010). Attributes refer to the characteristic of the product and can be both tangible and subjective, however, the selection of products chosen by the consumer is based on the attributes they hold (Peter & Olson, 2010; Gutman, 1982). In this thesis, attributes refer to the characteristic of a specific MA tool which has consequences for the overall farm control system if it is used. The usage of the different MA tools is based on the attributes they hold and their perceived consequences for the overall control system in relation to an overall goal or value.

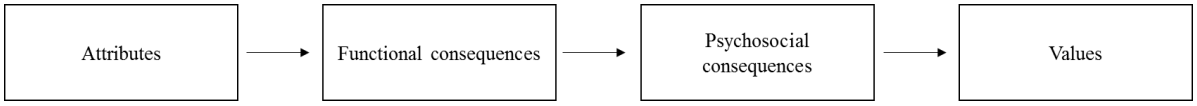

Figure 9. *The means- end chain model (Peter & Olson, 2010)*

Values are assumed to be the personal beliefs of preferred end-states of existence that are ordered in a "value system" with respect to the relative importance (Schwartz, 1992; Rokeach, 1973). Rokeach (1973) distinguishes between two sorts of values: terminal values and instrumental values. Terminal values refer to ideal end-state of existence. In a farm business context, terminal values may, for example, refer to the long-term survival of the farm. Instrumental values concern a "code of conduct" or certain behaviours, skilled, honest, competent, that are preferred or of assistants to realise the ideal end-state of existence.

Although Rokeach (1973) distinguish between terminal and instrumental values, more recent research argue that this distinction does not affect how people perceive values (Schwartz, 1992). Therefore, the MEC model in this thesis does not distinguish between instrumental and terminal values. Instead, the values identified in the interviews are categorised according to the value theory. The value theory contains ten motivational types of values, as presented by Schwartz (1992). The ten values are: Universalism, Self-Direction, Stimulation, Hedonism, Achievement, Power, Security, Conformity, Tradition, Benevolence, and are considered universal for expressing motivational goals (Schwartz, 1992). When studying a homogenous group, the universal values identified are likely to be similar between respondents. Using Schwartz (1992) value theory provides a framework which facilitates the process of categorising the values identified in the interviews.

The hierarchical ordering in Figure 10, is a result of the assumption that people strive to reach the preferred end-states at a higher level of abstraction. This ordering is also in line with the

nature of the levels i.e. that the attributes affect the outcomes, *consequences*, and not the opposite (Gutman, 1997). The chain in the general MEC model, therefore, provides the link between the place a person wants to be and the means to get there (Leppard *et al.*, 2004). In this thesis, this chain will provide an understanding of farmers' use of MA by linking attributes of different systems for control to its perceived consequences and also relating this to the preferred end-states.

Gutman (1997) argues that *"consumer choice can be regarded as a person's movement trough a goal hierarchy*" (p. 547) and that the goals motivate and influence actions since people compare their current state with their wanted goal, thereby creating a pattern of decisions. Gutman (1997) propose that MEC can be understood as a goal hierarchy in which the traditional elements in MEC, *attributes, consequences and values*, are components and the hierarchy's final goal can be found at any level. When the final goal refers to the value level of abstraction the lower levels, *attributes, consequences*, are understood as sub-goals in the traditional model. The goal hierarchy is an attractive way of thinking when observing manager behaviour in businesses since there are similarities to the concept of firm objective and strategy. For this thesis, the goal hierarchy is understood as a complement to the traditional model of MEC. And values are assumed to describe goals of actions, in accordance with (Gutman, 1997).

To clarify how the model is used in this study, Figure 10 provides the reader with an example. Considering a hypothetical example of a farmer who considers the attribute of an annual budget to be "planning". Planning is the function of determining future actions which benefit to a "sense of being in control" of the business. Being in control of the business is a consequence or a sub-goal of planning which in turn reflects the overall goal of "continue to be a farmer". This, in turn, reflects some personal value or as stated in the example, the "freedom to have my one business". The distinction between goals and values is considered as *"Goals are what we want; values are why we want them"* (Gutman, 1997, p. 558). This implies that values are slow to change while other aspects can change more quickly as we move down the HMV.

By considering this simple example, the MEC provides connections between attributes, consequences, goals and values which is displayed in a hierarchical value map (HVM). Were the HVM is created from the frequencies of connections between the different levels of abstraction in the model (Reynolds & Gutman, 1988).

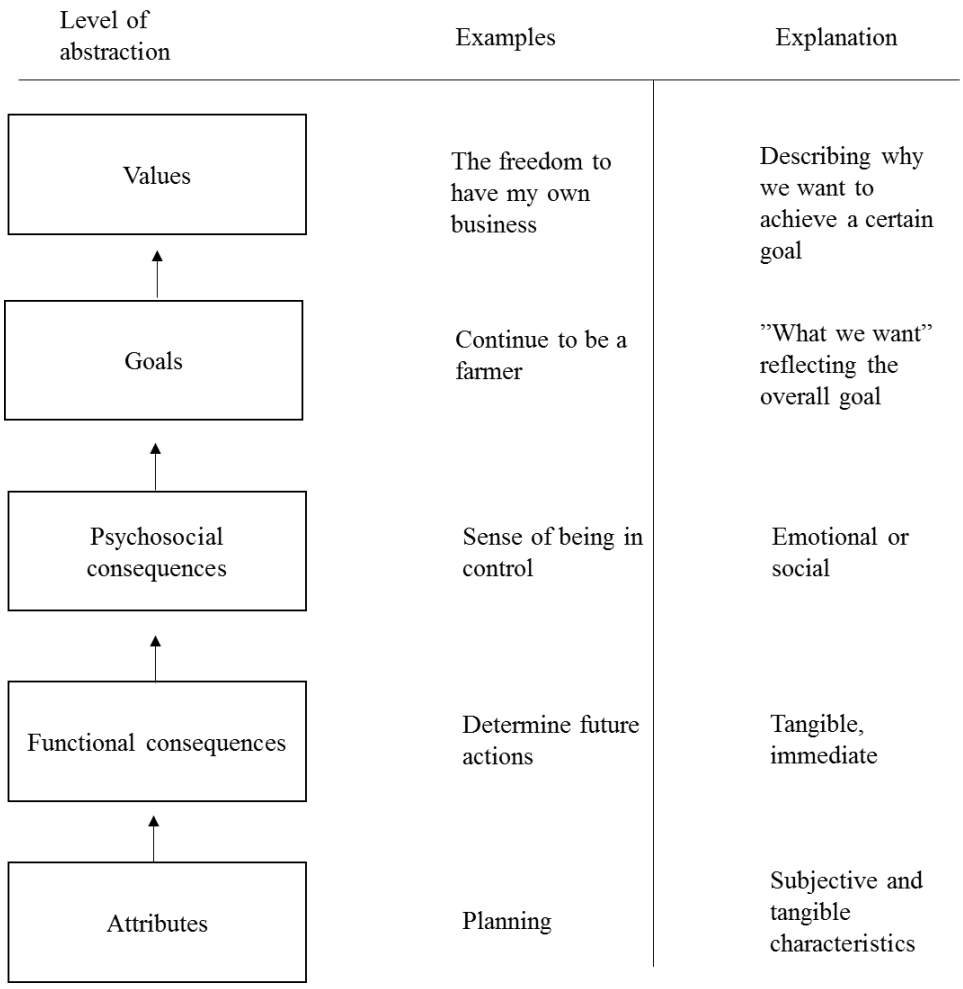

Figure 10. *The hierarchical value map inspired by Peter and Olson (2010) and Gutman (1997)*

3 Method

In this chapter, we present our methodological approach. To fulfil our aim, we have conducted a qualitative study with semi-structured interviews. The interviews were based on the Zaltman metaphor-elicitation technique (ZMET) (Zaltman, 1997) with nine respondents.

3.1 Research approach

The aim of this study is to explore how Swedish dairy farm managers perceive formalised MA and use it in order to manage their companies with respect to decision-making and control. This involves studying individual farm managers in their unique companies. To fulfil the aim, our intention is to use an approach that makes it possible to acquire a deep understanding of the individual perspectives. Hence, a qualitative research approach is seen as appropriate (Golafshani, 2003).

The strength in qualitative research is the ability to emphasise complexity and to give a detailed understanding of the case studied (Bryman & Bell, 2015). Using the qualitative approach does not allow us to generalise our findings in the same way as quantitative research does (Golafshani, 2003). This is the case since the data is not statistically valid concerning the number and selection of respondents. Consequently, valid statistical conclusions generalisable to an entire population can not be made. However, there is support for using the findings in a broader context, based on the notion that our findings will resemble the findings made when studying settings, times and people that are similar to the ones studied in this thesis (Burke, 1997; Lincoln & Guba, 1985)

Several researchers emphasise the need to develop the empirical knowledge in the field of MA (Malmi & Brown, 2008; Langfield-Smith, 1997). To accomplish this development, they suggest that conducting case studies is a good way to obtain a better understanding. This is also the case in farm management according to Rougoor *et al.* (1998) who describe farm management as a "black box". Thus, there is a need for an enhanced knowledge of the empirical practice whithin farm management. Ittner and Larcker (2001) highlights that in an applied discipline such as MA, research progress is found in the careful examination of practice. A point that also Zimmerman (2011) acknowledge when declaring that theory building is interlinked with empirical research and that they stimulate each other. However, Zimmerman (2011) also argues that the empirical findings in case studies do not contribute to building a theory beyond the point of describing the practice in the empirical setting. Instead, Zimmerman (2011) argues for more theoretically based research since the descriptive research alone will not build a coherent literature with the purpose of understanding MA. The case study aims at giving an exhaustive description of a single case rather than providing a theoretically based explanation of the phenomenon. The use of MEC in our study is, therefore, an attempt to provide a more theoretically based explanation to the usage of MA and its perceived usefulness by farm managers, thereby extending our study beyond the description of MA in one specific setting.

To obtain deep knowledge and understanding of farmers' perception for the internal control in their farm business we choose to conduct qualitative interviews with the farmers. Kvale (1997) states that qualitative interviews allow the researchers to get a deep understanding of the respondent's experiences. The qualitative interviews conducted in our research were based on the ZMET (Zaltman, 1997). The ZMET is an interview technique that was developed within the marketing research area for the purpose of studying how different product attributes are evaluated by the consumers (Zaltman, 1997). A ZMET interview is structured

around a few research topics and uses pictures that the respondent can associate with these topics. The usage of the pictures is emphasised as a good way of widening the respondent's associations to a certain topic and is a central part of the ZMET (Zaltman, 1997). The interviews in our study are therefore semi- structured in their design and execution (Kvale, 1997). The interview guide was developed by studying the different steps of ZMET (Chen, 2008) and contained the six different steps presented in Figure 11 below. The guide was used in order for us to control that every part of the ZMET was covered before ending the interview (Robson & McCartan, 2016). By conducting these interviews with nine different farmers, we were able to construct the HVM showing the links between the perceived attributes, consequences and values.

3.2 Course of action

In the following part, the course of action is presented which includes the selection of the respondents, a description of the interview process and the analysis of data.

3.2.1 Respondents

The nine respondents selected for this study are all dairy producers and have a herd size of more than 150 units. In addition, they all have one or several employees. In order to use the MEC theory successfully Modesto Veludo-de-Oliveira *et al.* (2006) acknowledge that there is a need to have a homogenous group of respondents, building a strong argument for us choosing respondents with the same type of production. The selection of large dairy farms is based on the perception that these types of firms have an extended need for control mechanisms within the company. This is the case because there is a constant need to monitor the dairy heard, the internal transactions within the farm, such as grain and silage, as well as the coordination of employees. In addition, the choice to study large farms is based on the commission for increased competitiveness (Annerberg, 2015). Since the commission predicts that Swedish farms will continue to expand in size implying that fewer but larger companies will be more important for the Swedish agriculture production. A growth development which is especially apparent in the dairy sector. There is also a need to develop farm management practices in order for large Swedish farms to be profitable and competitive on the international market. In that context, it is considered important to explore current farm management practices on large farms. Knowledge which in the future can be used to develop farm management even further in order to facilitate the ongoing reformation of the Swedish agriculture sector.

The choice to conduct nine interviews is based on Zaltman (1997) statement that *"at most, data from four or five participants … are generally required to generate all of the constructs on the consensus map."* (Zaltman, 1997, p. 432). This relationship is also noted by Christensen and Olson (2002) who states that their group of fifteen respondents far surpasses *"the heuristic threshold required to assure saturation in the study"* (Christensen & Olson, 2002, p. 483). Therefore, nine respondents are appropriate in our case since it surpasses the heuristic threshold and allows us to get a clear view of the central aspects of farm management.

In the framework of ZMET, the relationship between attributes, consequences, and values are usually displayed in a consensus map. When referring to MEC and laddering, the same connections are usually displayed in an HVM. In this thesis the choice is to use the HVM since it conforms to the underlying assumption of the MEC theory i.e. attributes, consequences and values are hierarchically ordered by the level of abstraction.

The respondents were initially contacted by telephone, during the conversation the project and our intentions was presented briefly. This contact was followed by an e-mail with a suggestion of a potential time for the interview and a follow-up call a few days later where the date and time for the interview were set. The interviews were conducted between the 20th of March 2017 and the 4th of April 2017 and lasted approximately one hour per respondent. All the interviews were conducted on the farms in order to build a contextual understanding of the manager. The choice of conducting the interviews on the farm is also seen as a way of making it easier for the respondent to participate in the study. Using ZMET in the interview also works better if the interview is conducted face to face and therefore also increase the willingness to visit the farms.

One important aspect to highlight in this part is the choice of respondents in the respect that these managers have different approaches in their way of controlling their firms. Our analysis is also hampered in the cases where there are several owners working within the business, and all of them bear equal responsibility for the control within the firm. In that case, the owners were free to decide which one of them who should participate in the interview. This was based on the owners view that one of them had more information to contribute with.

3.2.2 The Zaltman Metaphor- Elicitation Technique

The ZMET was developed by Coulter and Zaltman (1995) and Zaltman (1997) in an attempt to allow researchers to develop a deep understanding of customer patterns. Zaltman (1997) stated that there is a need for researchers to enable respondents to represent their thinking fully. The mental models that underlie feelings and involvement must be understood, as Christensen and Olson (2002) write. The ZMET provides help with codifying nonverbal data and the presentation of findings (Coulter & Zaltman, 1995). The background to this approach is the need to explore different levels of thought, allowing a deeper meaning for the topic of interest (Coulter & Zaltman, 1995). The ZMET includes two theoretical assumptions, the first referring to unconsciousness of respondents and the need to reveal hidden knowledge and create deep meaning through theories. The second assumption is that spoken language as a tool is not sufficient enough to create rich pictures when a mental picture is being described since people seem to think in terms of images (Zaltman, 1997). The argument made by Kosslyn *et al.* (1990) that *"two-thirds of all stimuli reach the brain through the visual system"* (Zaltman, 1997, p. 424) makes graphical images an effective way of encouraging respondents to communicate (Damasio, 1989).

By using the ZMET approach, we intend to raise the interpretative validity of this research since our hope is that the method allows us to gain a good understanding of the participants' viewpoints, feelings, and thoughts (Burke, 1997). The technique will also allow us to portray the standpoints of the respondent better, in our report. In order to establish this, we are keen to include feedback loops into the interviews and thereby establish whether or not we have understood the respondent in a correct way (Burke, 1997).

In this thesis, six of the eight steps presented in the original ZMET (see Zaltman, 1997) is used. These six were considered enough to gain sufficiently comprehensive data from the respondents. A consideration which is supported by Chen (2008). The six steps are presented in Figure 11 below. From Zaltman (1997) original ZMET framework we have deducted the metaphor elaboration step and included it in the construct elicitation part. The final parts of Zaltman (1997) original ZMET were combined into one step in our approach which is found in step six.

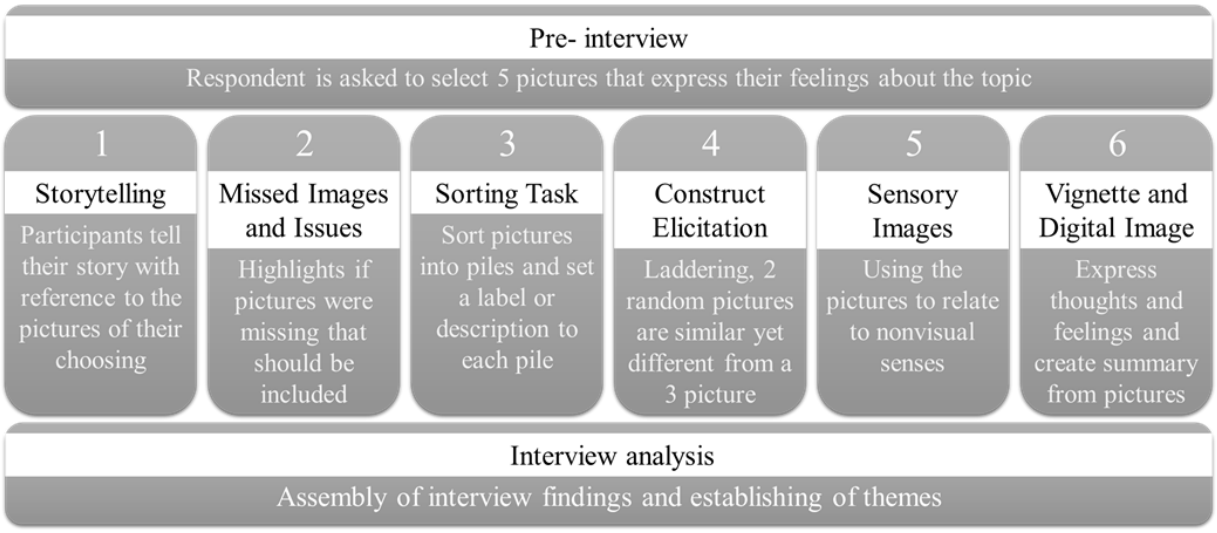

Figure 11. *The ZMET interview guide (Coulter & Zaltman, 1995)*

The framework was used to create our interview guide and began with us choosing 25 pictures. The reason for us making a sample of pictures for the respondents to pick from is not in line with the original ZMET method, see Zaltman (1997) but has previously been used in research (Dickson & Magnusson, 2013). This was a way for us to make sure that the pictures were available to the respondents prior to the interview. It was also a way to facilitate for the respondents to make a selection of pictures due to time constraint. One might argue that this creates a bias in the selection of pictures. To minimise this risk of researcher bias, step two (see Figure 11) allowed the respondent to include missing pictures.

The pictures were chosen based on keywords inspired by the literature review. These keywords were *Swedish farming, management accounting, business management, strategic planning and business coordination.* The pictures were sent to the farmers beforehand with the instruction to select five pictures that they thought represent their farm management and control practices. Due to copyright reasons, we cannot publish the pictures used during the interviews, but interested readers can contact us to see them. To provide a general description of the pictures, the 25 pictures contained both abstract and concrete constructs. Some of them show a direction in an abstract way, some show statistics and financial performance measures in different settings and some show farming practices in a concrete way. Along with the pictures, we sent a cover letter explaining the purpose of the study and instructions concerning interview preparations and how the interview would be conducted.

The interviews began with the respondents explaining their choice of pictures and how these represented their MA practice and overall farm management. This is represented by the storytelling phase presented in Figure 11. When these choices were well understood, and the respondents had given a clear indication for the central themes we asked them about missing images in the picture sample. The aim of these first two steps of the interview was to allow the respondents to speak freely about their internal control which allowed the interviewers to note keywords that were later used during part 4 (Figure 11) of the interview. During these parts of the interviews, some recaps were made in order to assure that the thoughts were captured in the right way, but the overall objective was to allow the respondent to create a detailed picture through storytelling.

Step three of the interview was the sorting task (see Figure 11). In this part, the respondents were asked to sort the pictures into different piles and label the piles with keywords, in accordance with their perception of what the pictures represent. This allowed the respondents

to view the pictures in a more aggregated way, thereby also allowing connections to be made between them.

The following step included the laddering technique and is presented below. After going through the different concepts and ladders, we asked the respondents to use their other senses, besides eyesight, to describe their associations to the concepts (Coulter & Zaltman, 1995).

In the final step of the interview, the respondents were asked to create a short summary based on their feelings regarding the concepts and systems we had discussed previously during the interview. The summary, alongside with the digital image, in which the respondent was asked to summarise the pictures, created an adequate summarization of the overall takeaways from the interviews. This step also allows us as researchers to discuss and review the concepts explored to make sure nothing was missed.

3.2.3 Laddering technique, Construct Elicitation

Within the frame of ZMET, we used the laddering technique to identify essential personal perceptions of attributes, consequences, and values concerning MA. The laddering technique is frequently used in combination with the MEC theory to construct an HVM (e.g. Hansson & Lagerkvist, 2015; Lagerkvist *et al.*, 2012; Peter & Olson, 2010; Lind, 2007; Russell *et al.*, 2004; Grunert & Grunert, 1995). The laddering technique allows the researcher to understand important personal constructs (Chen, 2008). In this study, we used a soft laddering technique because it can yield more redundant data, according to Grunert and Grunert (1995). The method allows the respondents to move in between ladders and therefore makes the reconstruction of ladders in the coding step easier. This choice is also motivated by our limited knowledge about the cognitive structures of the respondents and our sample size as described by Costa *et al.* (2004). Costa *et al.* (2004) also express that the soft laddering technique increases the probability of uncovering relevant MEC:s.

The laddering interview technique begins with the identification of the entry concept. The second step is the identification of linked meanings (Olson, 1988). The entry concept was established through the storytelling part of the ZMET (see Figure 11). The entry concept is the starting point for a series of questions relating to why the respondent feels that these attributes are important. Questions that force the respondent to climb a mental ladder by motivating the importance of the concept, reaching the point where the importance can no longer be motivated (Hansson & Lagerkvist, 2015).

Reynolds and Gutman's (1988) present six different thinking points that were valuable to us during the interviews, *evoking the situational context,* what is the most relevant theme, *postulating the absence of an object or a state of being,* try to unblock the respondent, *negative laddering,* ask the respondent why they do not believe something, *age regression contrast probe,* allow the respondent to move backward in time, thereby remembering feelings from the past, *third-person probe,* how do others the respondent knows feel about this matter, *redirecting techniques: silence/ communication check* leave the respondent more space to find better answers, repeat and check if you interpreted it correctly. Following their examples and knowledge in the technique allowed us to construct the ladders from the interview material.

3.2.4 Analysis of interviews

When conducting the analysis, we used Reynolds and Gutman (1988) recommendations that are frequently used in several other laddering studies (e.g. Lind, 2007). We analysed the interviews for attributes, consequences, goals and values. These findings were then summarised into *master codes* in which similar responses were categorised into clusters with the same heading. The master code was then used to construct an implication matrix in which

we present how many times one element leads to other elements thereby presenting direct and indirect relations (Reynolds & Gutman, 1988). Then we summarised the results into an HVM, representing the chain in which the respondents perceive their use of MA. For the creation of the HVM and the implication matrix, we used the computer program Ladderux in accordance with Hansson and Lagerkvist (2015). The Ladderux program provides an understanding of links between attributes, consequences, goals and values. In this program, the direct and indirect links between the elements are described and understood in accordance with the number of times they have been mentioned.

The cut-off value, described by Reynolds and Gutman (1988), represent the number of times a connection between elements has to be mentioned in order to be illustrated in the HVM. Reynolds and Gutman (1988) suggest a cut- off value between three and five if the sample is based on 50-60 respondents. This recommendation indicates that the cut-off value, in this thesis should be less than three since the study constitutes of nine respondents. The selection of different cut-off values is also discussed by Modesto Veludo-de-Oliveira *et al.* (2006). In general, low cut-off values results in a comprehensive yet complex HVM. By raising the cut-off value the complexity of the HVM is reduced thereby increasing the transparency of the HVM. However, there is a trade-off since data has to be excluded to decrease the complexity of the HVM.

Since the interviews lasted around one hour and the pictures were included, in accordance to ZMET, the interview material is extensive. In order to create an HVM that is understandable for the reader and facilitate the analysis of the most important links, the cut-off value was set to four. The cut-off value of four is higher than the recommendations by Reynolds and Gutman (1988), however, since the data is extensive the analysis shows that a lower cut-off value would result in a far too complex HVM in which the most important links are hard to follow.

From the interviews conducted we were able to identify 229 ladders and an average of 25,4 ladders per respondent. In total, the interviews provided 1352 links of which 601 was direct links, and 751 was indirect links. The constructed HVM contains 27 elements and 39.27% of the total links which exceeded the cut-off value of four.

3.2.5 Method discussion

The laddering technique in combination with the MEC theory is well recommended and widely used (Modesto Veludo-de-Oliveira *et al.*, 2006). This is because laddering is suitable to elicit the hierarchical constructs of the MEC theory. However, there is also challenges and limitations to the MEC theory in combination with laddering. In this section the major drawbacks are presented and how they are handled. Modesto Veludo-de-Oliveira *et al.* (2006) argues that the laddering interview technique is demanding both for the researchers and the respondents. To facilitate for the respondents, the soft laddering technique was used because it is perceived as less troublesome. To elicit the ladders and overcome usual problems during the interview the recommendations by Reynolds and Gutman (1988), presented in section 3.3.3, were used. According to Grunert and Grunert (1995), the researcher can have a substantial influence on the respondent, thus affecting the validity of the study. To minimise the risk of researcher bias the storytelling phase of the ZMET (see Figure 11) is designed to make the respondent speak without interruption, making the researcher identify keywords which are used during the laddering phase of the interview. This reduces the risk for the researcher to suggest attributes, consequences and personal values to the respondent.

Lin (2002) discuss the main challenges when analysing the data to construct the HVM. According to Lin (2002), the process of categorising variables into attributes, consequences, and values is a simplification that not necessary reflect the beliefs of the respondent. In

addition, the process of categorization is subjective and heavily influenced by the researcher. Especially pre-defined cut-off values are seen as problematic since there is no valid method of choosing the appropriate level (Lin, 2002; Grunert & Grunert, 1995). Therefore we decided the cut-off value after the analysis of the interviews.

According to Modesto Veludo-de-Oliveira *et al.* (2006), the researcher can improve the validity of the data analysis by using a homogenous group of respondents. The argument is that the aggregated set of ladders will constitute an estimate of the cognitive structure of the group studied. In addition, an appropriate computer program can overcome the issue with pre-determined cut-off value. In this thesis, Ladderux was used which allows for extensive manipulation of the cut-off value which let the researcher to determining an appropriate cut-off value after the analysis (Modesto Veludo-de-Oliveira *et al.*, 2006).

3.3 Ethics

When conducting a study based on individual perspectives, ethical aspects concerning personal integrity are important to consider. These aspects include the sensitive information shared by the respondent and our interpretation and use of this information. Since the respondents trust us with sensitive information and entitle us to make our interpretations, it is our responsibility to cherish this trust. To handle the sensitive information in a responsible manner is important both for the concerned individuals and for future research. The trust established between the respondents and us is also important for future research since the respondents will have a positive experience from their participation. This positive experience increases their willingness to accept participation in future studies.

Bryman and Bell (2015) presents ethical directives that were used as guidelines throughout this study. These directives include informing the respondents about the aim of the research, thereby avoiding misunderstandings. Another directive is the voluntary participation of the respondents. Voluntary participation also includes checking if the respondents are willing to be recorded during the interview. For us, the most important directive is to reassure the respondents of their anonymity. To guarantee this anonymity, the cases are anonymized and consequently, no names or locations are presented in the study. The anonymity is not problematic since the information concerning individual respondents not contributes to the results of the study, see Trost (1997). The information provided by the respondents is therefore presented in a way that prevents the reader to identify the individual respondent.

To guarantee anonymity imposes difficulties for the reader to validate the results of this study. This conflict is discussed by Kvale (1997) who argues that anonymity contradicts transparency, which is a fundamental principle of research. Transparency in research concerns the researchers' ability to describe choices and how the surroundings affect the study. The possibility for other researchers to replicate the study is reduced when information concerning the respondents and the context surrounding them is concealed (Kvale, 1997). Although there are problems concerning the possibility to validate and replicate the results, Trost (1997) argues that anonymity should always be prioritised. The anonymity contributed to the confidence of the respondents to speak open-heartedly and without hesitation. For some respondents, the anonymity was considered essential for their participation.

3.4 Practical implications of chosen method

In general, the chosen method worked well during the interviews. We draw this conclusion since the respondents thought the use of pictures were stimulating and allowed them to think

about their farm management in a novel way. However, some problems related to the method occurred during the interviews. Three of the respondents did not study the pictures beforehand. In these cases, we had prepared backup questions which were used to initiate the interviews. The pictures were then used to summarise the interview along with some keywords chosen by the respondent. The cover letter that was sent to the respondents prior to the interviews instructed the respondents to choose five pictures out of 25. However, a few respondents expressed that five pictures were not enough to describe their farm management practices. If we had allowed the respondents to choose more pictures the answers might have been more exhaustive. The motive to limit the respondent to only choose five pictures was to force the respondents to make conscious and well-motivated choices which aimed at highlighting the most central part of their farm management practices.

In step five of the ZMET framework, the respondents were asked to describe their farm management with a colour. In general, the respondents thought this question was demanding, and one respondent expressed that we should have included this question in the cover letter that was sent before the interview. In that case, the respondent would have been able to reflect on this question beforehand which would have assisted the respondent to provide an adequate answer.

All interviews were recorded to facilitate the analysis of the data since the interviews were quite exhaustive ranging around one hour. Before the interviews started the respondents were asked if they approved for the interview to be recorded. Several respondents were reluctant, and therefore we had to guarantee their complete anonymity and that the recording was only to be used for the purpose of this study. In addition, several respondents hesitated to participate in the study since they thought the subject to be controversial. In conclusion, we suspect that some respondents might have been cautious to express deeper thoughts that they viewed as controversial in the subject during the recorded interviews. However, after expressing the purpose with the recording and how their contribution was to be used in the study most of them relaxed and gave approval. One way to prepare the respondents to be recorded would have been to ask them for approval in the cover letter. This might have contributed to making the respondents more relaxed during the initial part of the interview.

During the interviews, the laddering technique was used in combination with ZMET. The laddering phase was based on both pre-determined questions, see appendix 1, and follow-up questions from the storytelling phase. During some interviews, the laddering technique was difficult to apply since the respondents were unwilling to answer direct questions. For example, some respondents gave contradicting answers on direct questions compared to what they previously stated in the storytelling phase. The contradicting answers might be explained by confusion concerning concepts or the notion that the respondents did not fully understand the question asked. To handle this problem we allowed the respondents to talk more freely and tried to adjust our questions. In addition, we tried to make feedbacks to earlier statements and how these statements related to our question. After the third interview, we adjusted the pre-determined questions to get a better flow during the interviews. In practice, we shortened the questions and adjusted their ordering. During the following interviews, this adjustment enabled us to be more specific and created a better structure during the interviews.

One common problem during the construction and analysis of the HVM was to separate the different hierarchical levels from each other, i.e. to separate between attributes, consequences, goals and values. In addition, it is also demanding and highly subjective to sort answers from different respondents into a master code. For example, when the interviewed farmers referred to profitability they used several different synonyms. To handle this problem, it is important to be aware of the context in which the expression is used and to make follow-up questions

which can clarify what the respondent include in different expressions. It is also important to acknowledge the fact that the respondents give different meanings to the same expression. For example, some of the interviewed farmers made no distinction between profitability and productivity while others were clear of the differences between the two expressions.

Another problem occurring during the interviews was that several farmers first answer was located at the value level of the HVM. Since the main function of the MEC theory is to provide an explanation of how different means (attributes, consequences) can contribute to the realisation of the preferred end-state (Gutman, 1982). It is consequently problematic to begin at the value level since the hierarchical assumption of the model is violated. To counteract this problem the questions during the laddering phase needs to be designed with the purpose of fitting the hierarchical ordering of the HVM. When adjusting the pre-determined questions after the third interview this problem was taken into consideration with the consequence that the questions in the succeeding interviews were shorter and therefore more suited to provide answers which could be used to construct the HVM.

4 Results

In chapter four the results from the interviews are presented. The ZMET framework used during the interviews contained six phases (see Figure 11) and the sections in this chapter, therefore, present each step of the ZMET. The first section starts with the presentation of the storytelling phase, a section that also contains a presentation of the sensory images which is step five in ZMET. These two steps are presented together since the results in the storytelling and sensory image phase is similar and both contributes to a contextual understanding.

In section 4.2 the missing images are presented with a focus on the delimitations with the pictures. The missing images section also contribute to an understanding of what the farmer aim to achieve in the future because several respondents linked the pictures to future goals and aims. In section 4.3 the sorting task part is presented, a part in which the respondents were asked to make connections between the pictures and link them to keywords representing their businesses. Section 4.4 present the construct elicitation part of the ZMET and provides an overview of the constructs found in the HVM. In section 4.5 the HVM is presented, and the important ladders are discussed. In the final section (4.6) the results found in the HVM are discussed in relation to the theoretical framework. The implications of the results are further discussed in relation to previous literature in chapter five.

4.1 Storytelling

The farmers are treated anonymous, meaning that no specific locations or farm specific information are provided that allows the reader to identify the farmers. The study focused on large dairy farms all located in southern Sweden that ranged from 150 to over 1000 cows in production and had between five and 30 employees. During the storytelling phase, the farmers were asked to describe the farm setting with highlighting their view of MA and farm management.

In the interviews, the farmers were asked to select five pictures describing their perception of MA. The consistent points from the chosen pictures are highlighted in order to build an understanding of the HVM that is presented section 4.5. One important factor highlighted by several farmers is that they are price takers. Consequently, they have limited control of the price of their output. This limited control means that they have to find other ways to affect their potential profitability. To handle this inability to control the output price most of the farmers express their production strategy by stating: *"we constantly have to monitor the cost of production"* and: *"we continuously work to increase the quantity of milk in the tank"*. Implying that there is a constant need to decrease the cost of production and improve productivity.

A few of the interviewed farmers do not make a distinction between productivity and profitability. Some of the farmers link increased productivity directly to increased profitability without highlighting the potential of an increased marginal cost. Other farmers instead make a clear distinction between productivity and profitability by stating that an increased production cannot come at any cost. The close connection between productivity and profitability means that the performance measures used to evaluate the firm are often of a non-financial character. The non-financial measures are often tied to short-term productivity and animal health. This refers to the scope and timeliness of the MAS as described by Chenhall and Morris (1986). Since non-financial performance measures can support the farmers with fast feedback on decisions, the farmers find these measures more useful and to give them a better and a more active control over their operations compared to the financial measures.

In addition to the timeliness of MA, one farmer stated: *"we only have a turnover of… which makes this a small firm that is not too hard to control"*. The farmer continued with: *"I could make more detailed calculations and planning, but there has to be some Rock & Roll"*. The scope and timeliness together with the relatively uncomplicated organisational structure imply two things. The first is that the importance of daily operations surpasses that of financial control. The second is that even though these farms are considered big in a farm business context, they are small compared to businesses in other sectors which affect the perceived usefulness of detailed planning and calculations.

The first implication above is also interesting from another point of view, specifically the farmers' interests. One farmer said: *"the strategic decisions are made in the daily operational work"*, and another one expressed it as: *"the daily operations with the cows and the crop production is the reason for why I started"*. Several of our respondents expressed the fact that their interest in the farming practices is the foundation for their choice to start their dairy production. This implies that their interest for the operational aspects of the business surpasses their interest regarding the business management aspect of the firm. Consequently, this interest is also the basis for how the farmer develops farm management practices since the farmers are interested to participate in the daily routines.

The interest in the operational work among the farmers also have implications for decision-making and production changes on the farm. The interest in combination with knowledge created from many years in the business allows the farmers to make decisions based on gut feeling and experience. These informal decision-making and control mechanisms have given them enough knowledge to make small changes in incremental steps with continuous production evaluation to establish the best results. An evaluation that the farmers are able to do since the business structure is flat with short decision paths. The incremental improvements are often tied to a strategic notion of becoming more efficient and improving production but not necessarily to grow larger in size, *"my intention is not to increase in size only to become more efficient"* as one farmer puts it.

In the sensory image phase of ZMET, we asked the farmer to choose a colour and motivate how the chosen colour could describe their business and their perception of MA. The colours mentioned were red, blue and green. The most mentioned colour was green, which was mentioned six times, and the motivation was that the farmers are actors in the green sector where the focus is to collaborate with nature. The farmers referred the colour green to the fact that they work with nature, which implies a very specific context that has a yearly cycle. This means that the decisions made once a year can only be changed to a certain degree and therefore will have effect for a long period of time, or as one farmer expressed it: *"it is no use for me to make quarterly follow-ups since I cannot say anything about the result before the harvest is over"*. The second most mentioned colour was blue which was mentioned three times and relates to a sense of happiness and positivity. The farmers expressed this positive feeling in connection with their businesses and highlighted the fact that the business has to render a profit for them to keep going. The importance of making profits is also a connection that was mentioned when the colour green was chosen. One of the farmers mentioned both blue and red were red related to the management of employees and the farmer's perception regarding it.

4.2 Missing images

During the interviews, we asked the farmers if they thought that any pictures were missing that could describe important aspects of MA. When asked the question none of the farmers

had any missing images that they wanted to discuss. This lack of missing images can have two possible explanations; the first is that the pictures we choose to send beforehand were exhaustive enough and the second is that the farmers did not have time before the interview to sit down and look at the pictures and think about their role in the business. The second explanation seems to be the most likely since three of the respondents had not looked at the pictures beforehand. The fact that the ZMET approach is new for the farmers might also have an effect since the farmers have not been exposed to this type of questions before.

When asked to describe missing images, the farmers instead related their reasoning to pictures that they had not chosen for the explanation of their current farm management practices, and perception of MA. For example, several farmers choose pictures which described undesirable farm management practices. In addition, several of the respondents also related the pictures to an ambition of where they would like to be one day. These perceptions differ compared to the ones presented in the storytelling phase because the pictures do not describe the current situation and instead relates to future goals.

In one of the pictures, some arrows have hit the centre of their mark. When looking at this picture, several of the farmers have expressed a will to be in a spot where all decisions hit their mark, for them to be on top of their production. This is a way of expressing a strive for improvement and at the same time acknowledging that there is some way to go before reaching it. One connection made in the pictures is the will to distribute responsibility to employees. When looking at pictures showing one man in the centre of several others and a picture showing a man standing in front of a line with workers carrying hard hats several respondents have expressed an unwillingness to be in the centre and instead lead by giving responsibility to the employees. The farmers want to lead by creating consensus and having a flat structure where the responsibility is divided among the employees.

When looking at the pictures, the farmers also relate a few of them to strategic decisions. For example, when looking at a picture with arrows in different lengths, they point out that they want to be among the top 25 percent to be profitable. Some of the farmers also relate this to their farm development and claim that they want to lead the development while others are satisfied with being in second place and thereby avoiding some mistakes that might affect the ones in front.

4.3 Sorting task

During the interviews, the farmers were asked to describe keywords representing their business and their MA practices. Some of the farmers related these keywords to the pictures and created a story while others did not, and instead related the keywords direct to MA without using the pictures. In this section, we provide a summary of these keywords and the motivation behind them. This section also contains the aspects that were raised in the summary made at the end of the interviews. This means that this section also includes the presentation of part six in the ZMET framework. When asked about the keywords, one farmer expressed it as a story:

“it all starts in the fields, if we manage to get the harvest right, we have set the most important cornerstone in our production. At the same time, external influences that we cannot control affect our possibilities to conduct business. I have to consider all these aspects along with daily routines, employees, bookkeeping, fodder, overall management and all these aspects will contribute to the results in my business, results that I can check and follow up in my accounting. No wonder I feel bit absent-minded sometimes.”

This quote implies that farm management is perceived as a chain of decisions and control actions which are integrated and together form the basis of farm management practices. For the business to be viable, the farmer has to have an overview of the entire business and have control of the whole chain of events. This implies that the farmer has to be skilled in many different practices for the business to be viable. In addition, the quote shows that MA is an integrated part of the overall control system as described by Malmi and Brown (2008). This integration is based on a notion that MA is used for controlling and evaluating the economic output of the operations when the farmer states that *"results that I can check and follow up in my accounting"*.

Several of the farmers also highlight the importance of raising the level of abstraction to establish the overall perspectives of the business. One respondent states: *"it is important for me to get the time to see the overall perspective and not get too caught up in the daily routines"*. In this statement, the farmer expresses an opposing view were the personal interests contradicts the importance of having a helicopter view of the firm. The contradiction also relates to the will to distribute responsibility in the firm to achieve a structure that does not imply that the farmer has to be everywhere at once. Several of the farmers describe a difficulty in distributing responsibility to the employees because of the lack of clear routines. The lack of the clear routines relates to the fire-fighting mentality found in Table 2 which is described as one characteristic of SMEs. This indicates that the farmers lack important routines which allow the employees to solve daily problems as they occur. Consequently, the farmers need to solve these problems themselves implying less time to develop clear-cut strategies for the long-term operations, underlining the fire-fighting mentality.

In addition to the quotes above, we choose to highlight three examples of keywords that the farmers related to their MA practices.

"Control, responsibility for all employees, decision-making and control, financial management, interest and team spirit" As well as: *"make strategic decisions that reduce risk, make a move and see what happens, focus on producing a lot of milk and make continuous improvements"*. And: *"you need to have a vision, and in order to reach it you need a good strategy that can lean either to the left or the right, this strategy then has to be executed, and during this process, it is important to be responsive"*.

The presented keywords along with cost management and economic evaluation were the central aspects that were raised during the sorting task part of the interviews. The central contribution of the presented keywords is that the interviewed farmers perceive farm management as a chain of actions which has an internal focus but is affected by external factors. The main focus for the farmers is to adjust their internal operations and improve their production to become more efficient. In addition, the farmers perceive MA as an integrated part of farm management, however, when describing the most important aspects of farm management, MA is not mentioned to any further extent.

4.4 Construct elicitation

During the fourth phase of ZMET, the laddering technique was used to identify the constructs of the HVM. The attributes were identified during the storytelling phase of the ZMET and elaborated during this part of the interview to construct the ladders displayed in the HVM (see Figure 12). In section 4.4 we describe the constructs by presenting the attributes, consequences, goals and values. In section 4.5 the links found in the HVM are presented. The purpose with the HVM is to display how the interviewed farmers perceive MA and how they

use it for decision-making and control. The links displayed in the HVM represents the linkage between the attributes of MA in relation to the farmers preferred end-states.

4.4.1 Attributes

In the HVM there are six attributes which were mentioned in connection to another element more times than the cut-off value of four. The six identified attributes represent characteristics of MA that are perceived to be important for decision-making and control among the farmers. The attribute “Collaboration” was mentioned 12 times and include joint machine investments with other colleagues and cooperation during periods with a heavy workload. The attribute “Benchmarking” was mentioned 29 times and include when the farmers compare internal operations to others solutions. “External factors” was mentioned 52 times which is the most mentioned attribute displayed in the HVM. External factors include all aspects that affect the farm which is beyond the manager's direct control, for example, input and output prices. “Routines” was mentioned nine times and refers to internal operational practices which are linked to the role of the manager in the HVM. Implying that the farmer's interest has an impact on routines and the process of establishing them. “Non-financial performance measures” were mentioned 29 times and include short-term operational measures connected to productivity and animal health. “Financial performance measures” were mentioned 27 times and include long-term financial measures related to debt, average interest rate and milk profits minus cost of fodder.

4.4.2 Consequences

In the HVM 18 consequences exceed the cut-off value of four. The 18 consequences are divided into two categories, consisting of four psychosocial and 14 functional consequences. The psychosocial consequences are “Motivation”, “Sense of control”, “Flexibility”, “Uncertainty” and “Growth”. While the functional consequences are “Economic evaluation”, “Control liquidity”, “Convince external stakeholders”, “Operational decisions”, “Owner management”, “Profitability”, “Marginal production decisions”, “Investment decisions”, “Cost management”, “Strategic decisions”, “Production evaluation”, “Internal communication” and “Human resource management”.

The most mentioned and central functional consequences are described in more detail below. Operational decisions were mentioned 59 times and is, therefore, the most mentioned consequence. Operational decisions relate to short-term production decisions, for example, the combination of different types of fodder and which crops to grow in the fields. The second most mentioned consequence is strategic decisions that were mentioned 49 times. The element of strategic decisions relates to long-term strategic decisions such as the level of self-sufficiency and production orientation. Cost management was mentioned 47 times and relate to the process of constantly monitoring the cost of production. Investment decisions were mentioned 43 times and related to long-term investments in machinery equipment and buildings.

Profitability was mentioned 47 times and was described in different ways by the farmers. For example, several farmers viewed productivity and profitability as synonyms, consequently, an increase in productivity was perceived as an increase in profitability. In contrary, some farmers made a clear distinction between productivity and profitability by stating that an increase in productivity should not be made at any cost. Marginal production decisions were mentioned 22 times and refered to small, short-term production adjustments mostly related to the produced quantity of milk. Owner management was mentioned 45 times and constitutes of the farmer's role in the business. Human resource management was mentioned 24 times and refers to how much responsibility that is assigned to the employees and their role in the business.

4.4.3 Goals

In the HVM, the goal of "Developing the milk production" was identified as the overall long-term goal. The long-term goal was identified in one particular question during the interviews and was mentioned nine times. In the interviews, the farmers also expressed several sub-goals that relate to strategic and operational decisions. These sub-goals were, for example, the will to increase the quantity of produced milk, being self-sufficient regarding fodder and develop planning and control practices. The sub-goals are related to the overall goal of developing the milk production and thereby contribute to the pattern of decisions but are found at a lower hierarchical level since they act as a part of reaching the overall goal (Gutman, 1997).

4.4.4 Values

To categorise the values identified in the interviews the value theory developed by Schwartz (1992) was used. Out of the ten universal values presented in the value theory, we were able to identify two values that exceeded the cut-off value of four. "Security" was found to be the most important value highlighted by the farmers which were mentioned 31 times. The second most mentioned value was "Stimulation" which includes the farmer's personal interest and was mentioned 24 times.

Security was mentioned in relation to owner management. For example, one farmer expressed it as: *"my role as a manager is to evaluate and decrease the potential risk of the business"*. Security is also linked to flexibility concerning both the production and the level of invested capital. Stimulation was also mentioned in relation to owner management. This relationship exists because farmers base their role in the business on their interests. For example, several farmers expressed a will to participate in the daily routines. The two identified values constitute the highest level of abstraction in the HVM and are therefore the preferred end-states corresponding to the use of MA.

4.5 The hierarchical value map

In this section, the strongest links in the HVM are presented (see Figure 12). The most influential chain in the HVM starts at the attribute of external factors and links to the consequences of strategic decisions, cost management, investment decisions, profitability, marginal production decisions, operational decisions, owner management and the values of stimulation and security. This chain is based on the farmer's inability to affect output price since the milk price is determined by the world market which is a factor of uncertainty. Instead, the farmers make a strategic decision to concentrate on producing milk at the lowest cost which links to the psychosocial consequence of being in control. The link between strategic decision and cost management is based on that the farmers make strategic decisions based on cost considerations. For example, the interviewed farmers closely observe the cost for fodder, based on that information they make strategic decisions about the level of self-sufficiency regarding fodder.

Cost management is strongly related to investment decisions on the basis that the cost of investment constitutes of a large share of the total production cost of milk, over the investment cycle. The magnitude of the investment, decide the level of formalisation of the investment decision. For example, one farmer highlights that *"if I need a new plough I just buy one".* With this statement, the farmer expresses that there is no need to make deliberate and detailed investment plans for small expenses but rather to focus on large investments such as new housing or more land.

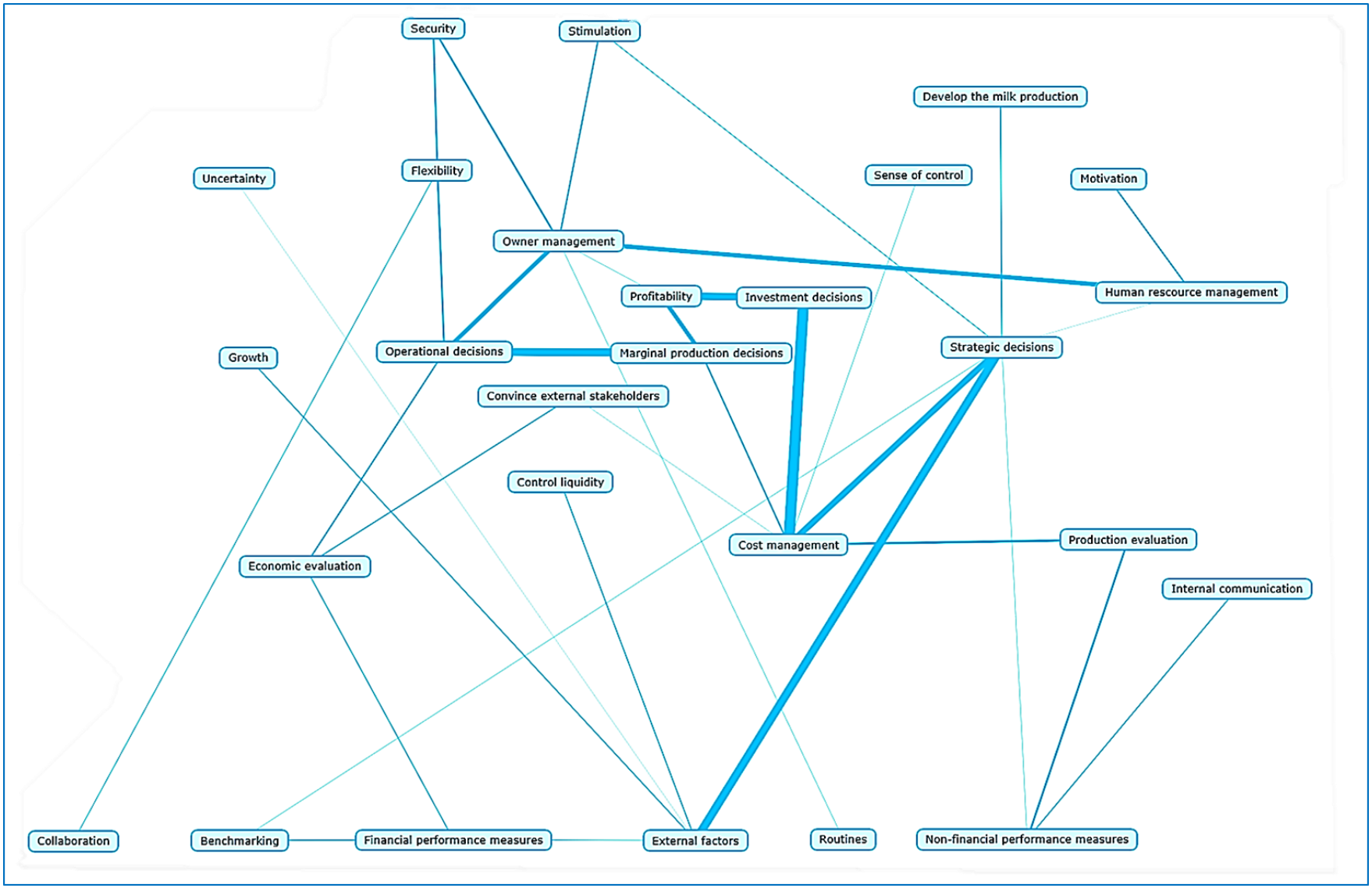

Figure 12. *The Hierarchical value map with a cut-off value of four*

The link between investment decisions and profitability is quite substantial in respect that the farmers consider the investment decision to determine the potential future profitability. One farmer highlights this aspect when expressing the importance not to build too expensive buildings since the costs associated with these buildings will affect the whole production cycle. This reasoning means that the fixed cost of the building has to be distributed on to the potential production capacity of the building.

The links between profitability, marginal production decisions and operational decisions are strong which demonstrates the importance of continuous improvement in the daily operations. The interviewed farmers continuously monitor the quantity of milk produced and keep track of important cost figures in the production. This information is evaluated through key performance measures connected to the quantity of milk, animal health, the cost of fodder and the turnover per employee.

Most of the farmers that were interviewed started their business based on their interest to farm. Therefore, the farmers are extensively involved in the daily production. One farmer states: *"I started this business because I like the daily operations not because I want to be a business manager".* This close connection is displayed in the link between operational decisions and owner management since the farmers participate in the daily routines and make most of the operational decisions. The consequence that the farmers are highly involved in the production implies that they, to some extent, lacks an overall perspective.

Owner management is also linked to human resource management which includes how much responsibility that is assigned to the employees. Several farmers express a will to assign more daily routine responsibility to the employees. However, the farmers find this difficult since they lack both financial resources to employ the extra workforce needed as well as the MCS that is needed to manage the daily routines without their participation.

From the consequence of owner management there are two links to the values of stimulation and security. The preferred end-states represented by the values of security and stimulation is founded in the farmers will to feel secure and the will to continue to be a farmer and thereby achieve stimulation. The farmers, therefore, use MA tools that are perceived to contribute to these preferred end-states.

The chain between the attribute of non-financial performance measures and the consequences of production evaluation and cost management implies that the farmers rely on non-financial performance measures and short-term production evaluation to control costs. The interviewed farmers constantly monitor the quantity of milk produced and keep track of important cost figures in the production. This information is evaluated through some key performance measures connected to the quantity of milk, animal health, the cost of fodder and the turnover per employee. Based on an overall assessment of the key figures, the farmer makes operational decisions and adjust the optimal quantity of milk produced. Important characteristics of the key performance measures used are that they should be easy to monitor, interpret and also useful for internal communication to steer the employees, a connection that is represented by the link between non-financial performance measures and internal communication. When asked, the farmers considered the chosen key performance measures vital when making decisions and controlling the production.

The final important chain presented, starts at the attributes of benchmarking and financial performance measures which are linked to the consequences of economic evaluation and convincing external stakeholders. The formal economic evaluation is mostly used as a mean to convince external stakeholders and negotiate credit terms with external financiers. Even though the farmers prefer short-term non-financial performance measures for decision-making and control, there is a link between the attribute of financial performance measures and the

consequences of economic evaluation and operational decisions. This link is based on that financial aspects are more important to consider in operational decisions with a longer perspective compared to daily production decisions. For example, several farmers used financial measures to evaluate decisions regarding which sort of services to buy from external contractors. The most important financial measures include the cost of capital and cost of labour.

The attribute benchmarking is also linked directly to the consequence of strategic decisions and indirect to cost management. Benchmarking is therefore used to control costs by taking the influence of others solutions and applying them to the own business. As one farmer puts it: *"Everything we do is inspired by others solutions, take for example…".* This highlights the importance of external influences to inspire own solutions, not only from other farm businesses but also from construction and processing industries. The interviewed farmers use benchmarking both in order to evaluate short-term production measures and long-term financial measures. For example, several farmers compared their average interest rate and their level of amortisation with colleagues. The process of evaluating short-term production measures are mostly based on benchmarking groups called "ERFA". The purpose of the benchmarking groups is to compare short-term production measures related to animal health, productivity, and quality of the production.

4.6 Results related to previous literature

Formal planning and control tools were not used to any further extent among the interviewed farmers. For example, a budget is perceived as quickly outdated and inflexible, thereby unuseful for operational planning and evaluation, which is discussed in the previous literature written by Neely *et al.* (1995). The farmers perceive short-term non-financial performance measures as more useful for making decisions and control production compared to the inflexible and out-of-date budgets. This phenomenon is earlier described by Hope and Fraser (2003) and Hansen *et al.* (2003) who argued that rigid MA tools can lead to dysfunctional managerial behaviour in a fast-changing business environment.

Contingency factors such as organisational context and design (Covaleski *et al.*, 2006), can explain the low use of formal planning and control tools among the farmers. For example, the farmers perceive budgets as unuseful because of the unstable and fast changing organisational environment. The farmers also perceive their organisational design to be flat and flexible with short decision paths. Consequently, the farmer can personally make operational decisions and evaluate the production on a daily basis. Therefore, the short-term performance indicators are perceived as more suitable for guiding managerial decisions in the changing and uncertain business environment.

The importance of short-term non-financial measures relates to the timeliness of the MAS, as discussed by Chenhall and Morris (1986). They highlighted that a timely MAS is one that can provide fast feedback on decisions, and since the farmers work continuously in the operations they see little need to rely on long-term financial measures for decision-making and control.

One interesting finding displayed in the HVM is that financial measures and economic evaluation are not directly linked to investment decisions. Instead, there are strong links between strategic decisions, cost management, investment decisions and profitability, and several farmers consider successful investment decisions to be the key to profitability. For example, the strategic decision to be self-sufficient in the production of fodder determines the investments in land, machinery and storage facilities. Some farmers also describe a strategic

lock-up effect which means that past decisions, for example regarding self-sufficiency, to some extent determine future investments.

The farmers considered financial performance measures as lagging indicators and perceive them as an outcome rather than indicators that guide future strategic decisions. This relationship was described by Kaplan and Norton (1996) as the balanced scorecard cause-and-effect relationship. Based on the balanced scorecard approach (Kaplan & Norton, 1996), the interviewed farmers focus on the internal business perspective instead of using financial measures to control cost. The lack of financial measures to control cost is, therefore, based on the perception that financial measures are unuseful and to long-term for controlling costs in the fast-changing production.

The distribution of cost between different production units differs among the interviewed farmers. The largest farms use internal pricing for determining the optimal level of trade between different business units. The transfer price is determined by the cost-based transfer pricing model, as described by Baldenius *et al.* (1999). The farmers that do not use formal internal pricing use informal and simplified calculations instead. The informal calculations are perceived sufficient enough and do not have to be as extensive as an internal pricing system to provide the farmers with useful information. The farmers are therefore aware of the considerations concerning the distribution of costs but indicate that they have little use of a rigid MA system for decision-making and control concerning these sort of transactions.

As mentioned, the level of formalisation regarding the investment decision process is dependent on the magnitude of the investment. One of the larger farms in the group had an investment plan for the upcoming five years describing the future investments in production facilities. This sort of long-term planning was not as distinct in the other interviews, but there were indications that there is a general idea of which investments to make in the coming years. Depending on the magnitude of the investments different MA tools are perceived as useful for decision-making and control. When making smaller investments simplified calculations, and gut feeling is perceived as sufficient for the investment decision.

When making larger investments more formalised and comprehensive MA tools, in the form of investment budgets and calculations are used. These investments plans are used as roadmaps and link strategic decisions to the long-term goal of developing the milk production. The performance measures used for decision-making and control regarding large investments is long-term and of a more financial character compared to the ones in the daily operations. Since the HVM shows that the usage of MA corresponds with the preferred end-state of security, one implication is that the increased risk of a large investment, affecting potential future profitability, requires the farmer to make more formalised and detailed plans for achieving the value of security.

The long-term financial measures are also used for communication with external stakeholders. In this usage, MA is seen as a tool for negotiation with financiers regarding credit terms and amortisation, which is previously described by López and Hiebl (2015). One long-term financial performance measure mentioned in the interviews that links strategic investment decisions to long-term profitability is debt per head lot. This key measure gives an indication of the capital structure in the firm and can be compared between different farms. The key measure does also provide detailed information for the cost of new housing and can evaluate the potential to amortise and pay interest on the loans taken.

5 Discussion and conclusion

In this study, we investigated how nine large Swedish dairy farmers perceive formalised MA and use it in order to manage their companies with respect to decision-making and control. For this investigation, we used the MEC theory and applied the framework of ZMET. Previous literature within the field of MA has highlighted the importance of MA for decision-making and control (Chenhall & Moers, 2015; Zimmerman, 2011; Brunsson, 1990; Ansari & Euske, 1987; Burchell *et al.*, 1985).

In addition, the ongoing reformation of the Swedish agricultural sector implies an increased focus on business management to ensure the long-term competitiveness of Swedish farm businesses (Annerberg, 2015). Previous studies within the field of farm management have described farm management practices (Galanopoulos *et al.*, 2006; Puig-Junoy & Argiles, 2004; Öhlmér *et al.*, 1998; Harling & Quail, 1990) and several researchers have discussed farm management with respect to farm efficiency and decision-making (Manevska-Tasevska *et al.*, 2016; Hansson, 2008; Trip *et al.*, 2002; Rougoor *et al.*, 1997). These previous studies have highlighted the importance of farm management for farm efficiency, but Rougoor *et al.* (1998) states that farm management is an unexplored field. With the novel use of the MEC theory for describing the perceived importance of MA within farm management, this study contributes to knowledge that can be used to develop the field of farm management further. This is done by raising the understanding for how MA is used among large Swedish dairy farmers.

5.1 Farmers' perception of management accounting

The result of this study indicates that the interviewed farmers perceive formalised MA as unuseful for decision-making and control in the business. Consequently, the usage of formalised MA tools is low among the interviewed farmers. This finding contradicts the majority of the MA literature in which MA is described to provide business managers with relevant information for decision-making and control (Chenhall & Moers, 2015; Zimmerman, 2011; Brunsson, 1990; Ansari & Euske, 1987; Burchell *et al.*, 1985).

Instead of using formalised MA, the dairy farmers interviewed in this study use informal MA practices for decision-making and control. The farmer's close connection with the daily operations allows them to make fast decisions regarding the production and also allow the farmer to base their decision-making and control practices on operational non-financial performance measures and informal calculations. Also, benchmarking is perceived as a valuable tool of MA in farm management. This relates to the timeliness of the MAS as described by Chenhall and Morris (1986) since the farmers work close to the production they can make decisions and control the production without using formalised MA tools.

By using the MEC theory, we can describe the central aspects concerning the farmer's perception of MA and which underlying goals and values that affect their usage of MA tools. The results provide an understanding of how the values, stimulation and security, effects how the farmers structures their MAS. The farmers highlight the importance of external factors affecting their businesses but recognise that their internal effectiveness is the central aspect to be profitable. These results indicate that farmers use formalised MA when they believe it is a relevant tool for the overall goal of developing the milk production. At the same time, they see little need to use formalised MA in the daily work since it does not contribute to the realisation of the preferred end-states of security and stimulation.

The contradiction concerning the importance of a formal MA in farm businesses has its foundation in several contingency factors affecting the usage of MA in farm businesses. Much in line with previous studies conducted by Öhlmér *et al.* (1998) and Harling and Quail (1990) farmers seems to apply different management tools for decision-making and control compared to the ones suggested by the normative MA literature.

As presented in chapter four the farmers highlight the connection between different parts of the company and perceive farm management as a chain of actions, indicating a system thinking that is seen in the MCS literature (Malmi & Brown, 2008). The farmers perceive MA as an integrated part of the MCS, however not as formalised as suggested by the literature. As suggested by Malmi and Brown (2008) MA is presented as cybernetic control with the purpose of guiding the organisational performance and stimulating action. Since the long-term goal for the farmers is to develop the milk production, they choose MA tools and performance measures that stimulate actions and guide the organisation towards that goal. Consequently, decision-making and control are based on non-financial performance measures and informal MA tools which reflect the importance of continuously monitoring the production and provide information for fast decisions that can contribute to reaching the long-term goal. This highlights the importance of creating performance measures in line with the organisational strategy, for them to be useful for decision-making and control (Cadez & Guilding, 2008; Malmi & Brown, 2008; Chenhall, 2003; Kaplan & Norton, 1992; Hopwood, 1978).

Decreased complexity regarding the sales of products implies that there is little need to have formal MA tools for controlling and evaluating the sales of the business. For example, when considering the four perspectives of the balanced scorecard (Kaplan & Norton, 1996) the importance of the consumer perspective is reduced. This means that the most efficient way of controlling the profitability is cost management and being able to produce at a lower cost compared to the competitors. Cost management in combination with high productivity is, therefore, the basis for profitability and consequently, the internal business perspective in the balanced scorecard is considered the most important perspective. The choice to produce at a low cost is, therefore, a deliberate strategy that has been in the centrum for agricultural commodities for a long time. The deliberate strategy of lowering production cost means that there is a constant need to monitor costs and a will to increase productivity without raising the cost of production.

When evaluating internal cost structures, formal MA tools are perceived as inflexible and to extensive. Instead, farmers make informal simplified calculations and in combination with non-financial performance measures, make decisions and control the production. The usage of formalised MA has its foundation in convincing external stakeholders. Implying that the formal MA tools and financial performance measures are perceived more useful for external communication than internal decision-making and control. This is displayed in the HVM where the attribute of financial performance measures and the consequence of formal economic evaluation is linked to the consequence of convincing external stakeholders. This linkage implies that external stakeholders affect the perceived importance of financial performance measures and formal economic evaluation. This is based on the will to establish trust and create a description of the business that can be presented to external stakeholders.

One reason for the low usage of a formalised MA is the perceived low usefulness which is determined by contingency factors, as described by Chenhall and Morris (1986). The flat and flexible structure and the size of the farm business, are examples of important contingency factors. This is previously described in the literature by Cadez and Guilding (2008), who argues that size is one of the most important contingency factors determining the perceived usefulness of MA and the shape of the MAS is, therefore, influenced by these factors. The

findings in this study correspond to Cadez and Guilding (2008) since the managers of larger farms perceive formalised MA as more useful than managers on smaller farms.

The results indicate that the low usage of formalised MA on smaller farms can be explained by the fact that it is possible for the farmer to make both long-term and operational decisions based on informal calculations and personal experience. This is possible since the farm manager is highly experienced and have detailed knowledge of the production and business environment. In addition, the organisational structure in these businesses is uncomplicated in the sense that the farmer does not have to convince middle managers or a board of directors to make decisions.

When asked about the importance of formalised MA for farm management the farmers foremost perceive other aspects of farm management to be more central. For example, the farmers highlight a will to develop their general business management capabilities and practices to be able to reach the long-term goal of developing the milk production. Since we have interviewed large dairy farmers that have grown rapidly during the recent years the need for them to develop new systems for decision-making and control has increased. The farmers realise that to be successful they need to distribute the responsibility for daily routines and focus more on long-term strategies. One key factor for this is to develop systems that facilitate the possibility to distribute responsibility to employees. To some extent, the rapid development over the recent years concerning the size of farm businesses has not lead to a corresponding development in MAS. The farmers seem to continue to be satisfied with less formal and simplified MAS for decision-making and control.

5.2 Policy implications

The findings in this study suggest that the importance of traditional MA for decision-making and control among the studied farmers is not perceived in the same normative way as described in the MA literature. According to the commission for increased competitiveness advisors have a key role in developing farm management and securing the future competitiveness of Swedish agriculture (Annerberg, 2015). From a policy perspective, the finding may be of importance for advisors to consider since farmers pay the most attention to operational decision-making and control which is determined by short-term evaluation of a non-financial character. In order for the advisors to provide meaningful advisement, for decision-making and control, in the farm management area there needs to be a connection between operational management, financial management and performance. The connection can provide useful information for how operational management and productivity changes links to long-term profitability.

According to the commissions for increased competitiveness, the productivity of Swedish agriculture is generally high while the profitability is generally low. This might be explained since farmers usually focus on short-term operational management and performance measures. This implies that farm managers and advisors should focus on linking the productivity to long-term profitability. For example, several farmers discuss the importance of good animal health and focus on performance measures relating to different aspects of animal health. However, few of them discuss the economic consequences of good animal health in terms of increased profitability. This might imply that it is difficult for the farmer to make economic evaluations of improvements in the production which in turn decreases the possibility for the farmer to make correct marginal production decisions.

In addition, the findings suggest that the key to profitability is in the operational management in combination with strategic decisions and investments. To improve the on-farm operations

and improve strategic investment decisions one central aspect that is mentioned by the farmers is benchmarking. The interviewed farmers perceive benchmarking as a central tool for developing on-farm practices and evaluating farm performance. In order to facilitate this process of acquiring new knowledge, both advisors and governmental organs should be aware of this connection. Policymakers and advisors should, therefore, consider supporting current suitable forums and developing future possibilities for the farmers to share knowledge and ideas, both in relation to other farmers and other industries.

5.3 Future studies

The qualitative approach used in this study has contributed to the understanding of farmers perception of MA and highlighted important aspects of farm management. From these results, we cannot make generalisations and draw statistically valid conclusions concerning the perception of MA among all Swedish farmers. However, in the results, we have identified certain differences concerning the perception of MA related to farm size. The results indicate that larger farms seem to perceive MA as more useful for decision-making and control. To further investigate this relationship quantitative methods is required in order to draw statistically valid conclusions.

Previous literature in the field of MA has described the relationship between the usage of MA and firm performance (López & Hiebl, 2015). Since the result of this study suggest that the usage of MA among the interviewed farmers is relatively low the question is whether the farmer could improve farm performance by using more formal MA techniques. Or if, as this study suggest, that traditional MA is perceived as less useful because of several contingency factors. Future research should develop an understanding of the connection between the usage of MA and farm performance and also which factors in the usage of MA that contributes to farm efficiency. For example, the results of this study indicate that the farmers thinks in terms of budgeting but perceive the formal written budgets as unuseful. It would be interesting to develop an understanding of differences concerning the efficiency in decision-making and control processes when comparing the informal MA to formal MA tools. This has partly been done by Manevska-Tasevska *et al.* (2016), in the Swedish pig farming sector. However, it would be interesting to see a similar study made on Swedish dairy farm managers.

5.4 Conclusion

The aim of this study was to explore how Swedish dairy farm managers perceive formalised MA and use it in order to manage their companies with respect to decision-making and control. The results of this study indicate that farmers perceive formalised MA to be one part of farm management practices, but when discussing the importance of MA several aspects of farm management practices are perceived to be of great importance for decision-making and control within the firm. The farmers highlight aspects such as employee management and daily operational management which is perceived important for the business to be profitable. This finding indicates that formalised MA is perceived as secondary compared to the mentioned practices.

The relevance of the normative description of the formal MA found in the literature can, therefore, be questioned in a farm management perspective. The results of this study suggest that farm managers rely on informal and simplified MA techniques connected to daily routines for decision-making and control. Since the farmers are heavily involved in the daily operations, they can make decisions and control the production in an effective way but lacks the ability to have an overview of the long-term operations of their businesses. This lack of

oversight might cause problems for these firms and should, therefore, be considered for potential improvements.

By using the ZMET approach in combination with the MEC theory, this study has increased the understanding of the practice of MA in farm businesses. With this approach, we have shifted the focus from “best practices” to how farm managers perceive and use MA, thus allowing an improved understanding for MA. In addition, the increased understanding of farm management practices can contribute to policymakers and advisors ability to create settings that allow increased long-term competitiveness of Swedish dairy farms.

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Appendix 1: Pre-determined questions

Do you actively use management accounting?

Which concrete tools are used?

Which financial performance measures do you use for decision-making and control?

Which non-financial performance measures do you use for decision-making and control?

Do you work with internal pricing?

Do you have external collaborations and how is these collaborations evaluated?

Do you take inspiration from others solutions to develop your own?

If you are to make an investment, what kind of information is most relevant in your opinion?

What are the possibilities and delimitations for your business management?

How do you plan your operations?

How do you perceive your employees role in your business?

How do you create possibilities for your employees to be as productive as possible? What is the main information that is communicated?

How do you follow up on your economic results?

How do you perceive the differences between productivity and profitability?

Which external factors affect your business?

If the milk price would decrease, how would you react to that situation?