

The Discovery and Exploitation of Opportunities in the Dairy Industry

A Thesis Submitted to the College of
Graduate Studies and Research in Partial Fulfillment of the Requirements
for the Degree of Masters of Science
in the Department of Bioresource Policy,
Business and Economics, University of Saskatchewan

Saskatoon

By

Eduardo Pina

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Abstract

The dairy industry has undergone a dynamic phase during the past two decades. Innovations in terms of technologies, processes, and products have changed the way the production of milk is done. This research takes an exploratory approach to look at the process of opportunity discovery within farm businesses and what firms in the dairy industry are doing to become more innovative. In addition, this research looks at the strategies farmers are using to successfully implement those innovations. An important factor that could affect the performance of a firm is the degree of which the firm is able to become aware of and exploit innovations that help bridge productivity and opportunity gaps.

Data is collected through qualitative tools, including in-depth interviews of dairy producers from Saskatchewan, Canada and Aguascalientes, Mexico. Such data collection provides this research with specific insights into the process of opportunity discovery. It also indicates which managerial practices moderate the successful discovery and exploitation of business opportunities in the dairy industry.

A theoretical framework was developed around four managerial factors; networking, human capital, market orientation and entrepreneurial orientation. Several propositions were built to identify the impact of these factors on the discovery and exploitation of opportunities in the dairy industry in both Canada and Mexico. This research shed more light on why some producers are more productive than others and how this is allowing some dairy producers to be more profitable. In addition, findings compare both industries and the differences and similarities are shown in terms of operations, managerial styles and processes in which the discovery and exploitation of opportunities take place.

Acknowledgements

I want to express my deepest appreciation to my supervisor Eric Micheels for his superior wisdom, guidance and support through all my program. I also would like to thank all my committee members Bills Brown and David Natcher for their time, advice and support throughout this dissertation. In addition, I would like to thank Jaffar Gutierrez and Arturo Valdivia for their help during the collection of data in Mexico.

Dedication

I would like to dedicate this work to my father, who is a leader, a visionary, and my best friend. I would also dedicate this work to my mother, the most special woman in my life. Thanks for everything mom, I love you. In addition, I would also like to thank and dedicate this work to Gabriela Romero and Alejandro Granados that have always provided me with support and advice through everything I've done.

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Chapter 1: Introduction/Background

1.1 Introduction

In the past decades dairy farmers around the world have been looking to increase productivity and performance. The dairy industry has experienced a drastic transformation in terms of technologies, which play an important role in the production of milk. The efficient implementation of technologies and innovative managerial practices needs to be addressed because it represents an important challenge for dairy farmers due to how fast innovations have changed in the dairy industry during the past decade.

Governments, scholars and entrepreneurs are quite interested on the current situation of the dairy industry, which has undergone significant changes in terms of innovation and managerial practices. Despite the policy differences between dairy industries in Canada and Mexico, both industries have been experiencing changes in the processes, technologies and management variables that are key factors necessary to succeed as a dairy farmer. This research takes an exploratory approach to look at the process of discovery of business opportunities, and what firms in the dairy industry are doing to become more innovative. In addition, this research examines strategies farmers are using to successfully implement these innovations. An important factor that could affect the performance of a farmer's firm is the degree at which the firm is able to become aware of opportunities and exploit innovations that help to improve productivity.

1.2 Dairy Industry

The dairy industry in Mexico has been affected by international markets through NAFTA. Mexico was the biggest worldwide importer of milk powder, even before 2008 when the

North American Free Trade Agreement removed all tariffs on dairy products (Carranza-Trinidad et al., 2007). The Mexican dairy industry is structured as a free market with very little supply regulation by government. The existence of multiple farm production units with freedom of production constitutes the Mexican industry.

The farm units in charge of the production of milk in Mexico are heterogeneous and they differentiate themselves by regions, technology, infrastructure, weather, production processes, and social capital. There are three main groups of milk production; the first one, which is the smallest in number of cows, is called “dual purpose”. This group is characterized by using free range cows not only for milk production but also for beef production depending on their needs and what is more convenient for them. The medium group is called “family system” and they are characterized by the production of milk and dairy products exclusively. Finally, the “specialized systems” are farms utilizing leading technologies that specialize on the production of milk in industrial amounts (4 to 6 thousands litre a year per cow or more) and are characterized by more bargaining power in dealings with milk processors, which may result in higher prices.

On the other hand, the Canadian dairy industry is highly regulated by both the provincial and federal government, which use a system of market sharing quotas (MSQ) to match the demand to the supply of milk. By matching the supply and demand, the government through three different agencies, the Canadian Dairy Commission (CDC), the Canadian Milk Supply Management Committee (CMSMC) and the Provincial Milk Marketing Authorities set the milk price using three different tools. The first one is the market sharing quotas, which the government uses to regulate the domestic supply of milk. The second is an international trade barrier in which imported dairy products and fluid milk are assessed with high import tariff-rates. In this matter there is also a use of quota in which

certain amounts of dairy products are imported tariff-free but above that limit there is a negotiated higher tariff (IDFA, 2010). The last tool used is the target pricing and price pooling, in which the farm gate prices are reviewed taking into account cost of production, labour and investments, and market indicators (IDFA, 2010).

In order to make the milk production a more sustainable and profitable business, the implementation of innovative business strategies and managerial skills are prioritized through an appropriate allocation of resources. On one hand, the resources can be spent towards a more efficient production in which economics of scale and size play a role. On the other hand, resources could be spent in marketing efforts with a goal of getting a better price. An important factor that can positively impact the performance of a firm is the degree in which the firm is able to innovate and effectively exploit market opportunities (Slater & Narver, 1995).

Unlike Canada, the Mexican dairy industry is confronting a big trade deficit from international producers, in particular from American dry milk and dairy products (SAGARPA, 2010). In order to strengthen the national dairy industry, the government of Mexico is promoting programs in which technology and other financial resources are made available to farmers at low interest rates. The reason for this intervention is the dairy industry had experienced low levels of producer innovativeness coupled with lower levels of integration between producers, which consequently leads to a poor bargaining position with milk processors. According to the Secretary of Agriculture Livestock Rural Development Fishing and Feeding (SAGARPA), this deficit and loss of market share from the Mexican dairy industry is due mainly to poor strategies of production and a lack of competitive advantages that will not allow producers to be profitable and consequently lowering

production. As a result, approximately 80 percent of the demand for milk in Mexico is produced domestically while the rest is imported (SAGARPA, 2010).

In addition, an important managerial factor is innovation and the way the firms respond to these challenges with new products and processes and new value to create a more attractive market without putting aside the communication and coordination with buyers and suppliers. Successful entrepreneurs independent of their motivation (i.e. money, fame, power, etc.) tend to create value and to make a contribution (Drucker, 1985). Entrepreneurs not only exploit existing opportunities or modify existing processes but also combine resources to come up with more productive configurations. This thesis examines what managerial factors directly impact the exploitation of opportunities. Drucker (1985: p. 69) claims the “opportunity is the source of innovation” therefore this study focus around exploited opportunities by dairy farmers to determine if market oriented and proactive firms are better able to identify and integrate new process innovations, or if it is a result of new knowledge, development of broader networks and human capital. These are some of the characteristics of market-oriented firms that this study will further describe in more detail.

These challenges in productivity demand distinctive managerial skills, in which dairy producers develop managerial competencies that enable them to reduce cost of production and identify current opportunities. The question here is how do firms compete in terms of the attributes and resources they are trying to exploit and also explore what are the market opportunities or programs they are using to reinforce their strategy?

The main challenge within the dairy industry is the level of uncertainty surrounding policy changes, price fluctuations and production technologies from the input and the output markets to stay profitable in comparison with other firms. It is essential to study and discover why some producers are outperforming others and how this is allowing these dairy producers

to be more profitable. Through constant research, the state and provincial governments of Aguascalientes, Mexico and Saskatchewan, Canada have provided their own dairy industry with a portfolio of programs to develop managerial skills, reduce cost of production, increase food safety, and have provided information to the producers to be able to respond to changes in the dairy market. Despite this, there are dairy producers that are outperforming and having greater growth rates than others. This study will identify the process dairy producers are going through to generate and make use of more information, who is helping them and which resources enable them to effectively manage the innovation process.

The competitive global market is subject to different environments and industries, some countries, such as Mexico, are forced to import production in order to cover their home market needs because their producers do not have access to the latest technology (SAGARPA, 2010). On the other hand, there are some countries that possess the managerial competences and access to technology that enable them to not only satisfy their domestic demand, but also enable them to expand to foreign market and export their dairy products.

The deficit of innovation capabilities from dairy farmers in both industries has captured the interest of public actors and scholars to research best management practices relating to innovation integration. Increased knowledge in this area would enable policy makers to develop tools to allow their entrepreneurs to acquire the information, technology and skills to improve performance. Effective processes of production will then consequently diminish trade deficits, increase production, and provide national food security at affordable prices.

1.3 Dairy Industry Managerial Skills

The dairy market offers an appropriate economic context to study the opportunity discovery

and exploitation process of managers since it requires managers to be aware of new technologies and processes, while also offering price incentives for increased quality. Currently, very few studies with this description have been conducted. This research will shed more light on why some producers are more innovative than others are and how this is allowing some dairy producers to be more profitable. In this thesis, I examine why those dairy producers seem to be more aware of opportunities, but also how they are utilizing programs and processes in the implementation of these innovations.

Greater levels of political change, globalization, and input prices end up increasing competitiveness and uncertainty in the dairy industry. The constant political and economic pressures to eliminate trade barriers are increasing, which often result in agreements to integrate multiple markets that have fewer trade barriers, for example the case of NAFTA. These political changes produce highly competitive markets and caused tremendous levels of uncertainty for farmers, who require managerial skills to perform better in terms of lowering their cost of production (i.e. use of technologies and process innovations) and receiving the most profit out of their production (marketing innovations and taking advantage of volume incentives).

1.3.1 Market orientation

The market orientation literature offers a managerial perspective that relates the function of acquiring and sharing information from customers and competitors to the development of business strategies, innovation processes, and improved financial performance (Kohli & Jaworski, 1990; Narver & Slater, 1990; Slater & Narver, 1995). In the business marketing literature, it has been suggested that market oriented firms are more efficient and effective at discovering and exploiting opportunities than the firms that do not have a market oriented culture (Narver & Slater, 1990, Didonet, Simmons, Díaz-villavicencio, & Palmer, 2012;

Nasution, Mavondo, Matanda, & Ndubisi, 2011)). As a result, a market orientation is positively correlated with performance. This strategy in different industries has shown to improve performance by increasing innovativeness, but there is still a gap in the literature on “how” firms implement the results of market orientation process. The question explored in this research is under what circumstances is market orientation correlated to performance and what makes an innovation successful?

1.3.2 Entrepreneurial orientation

In the entrepreneurial orientation literature it is suggested that entrepreneurial alertness enables managers to identify and create opportunities that may have a great impact on performance (Ardichvili, Cardozo, & Ray, 2003; Lumpkin & Dess, 1996; Tang, Kacmar, & Busenitz, 2012). Particular aspects of an entrepreneurial orientation, such as proactive behavior, theoretically should allow dairy producers to identify opportunities for productivity gains or quality improvements that would not be discovered as quickly with a more responsive attitude towards the market. The strategies entrepreneurial firms choose to implement will have a significant impact on the returns for the firm and economic development (Grande, Madsen, & Borch, 2011).

The judgment and the exploitation of those opportunities play an essential role in the correlation between identifying ideas and innovations from market oriented practices and their performance (Klein, 2008). In addition, the ability to network and acquire information through scanning the market improve the learning process and innovation process (Molina-Morales & Martinez-Fernandez, 2010).

The awareness of opportunities and the ability to maximize profit and minimize cost is achieved in different degrees according to corresponding managerial practices that the

producers take. This thesis therefore examined how entrepreneurial orientation and market orientation affect innovation performance. In particular, the activities the producers are implementing in order to have higher growth rates and the methods used to acquire knowledge to fulfill the market demands and compete with competitors. The gap here is how are firms able to discover these opportunities? What moderates the discovery of opportunities, and what are the key success factors not only of identification of opportunities, but also in the exploitation of opportunities?

1.4 Objectives and Contribution

The main objectives of this thesis are first to investigate how firms become aware of opportunities to improve performance in the dairy industry in Canada and Mexico. Second, this thesis examines how dairy producers exploit opportunities and the processes they take to implement an innovation. Additionally, this thesis examines which instruments, strategies, and government programs exploited by farmers contribute to the success of innovation processes within dairy farms. Lastly, this thesis examines how these processes differ across the two geographic locations, Canada and Mexico.

This cross-national study will contribute to the existing scholarly literature on awareness of opportunities by making the comparison between agricultural producers located in Saskatchewan, Canada and Aguascalientes, Mexico. This will add important information about the effect of innovativeness on financial performance. While research on awareness of opportunities and performance has been done within other industries (i.e. Shane & Venkataraman, 2000; Shane, 2000; Slater & Narver, 1995), very few studies have focused on the implementation and the process in Canada and Mexico. This research therefore represents an important contribution to the literature of this field. In the management

literature the contribution will shed light on the challenges dairy producers face in this two regions and how, what, and why are farmers implementing the current strategies. In addition, this study examines how market orientation and entrepreneurial orientation is implemented successfully in the dairy industry, based on the experiences of a small sample of farmers from Saskatchewan, Canada and from Aguascalientes, Mexico. Using interview data, a comparison will be made between national farmers and across countries. The results show different managerial strategies, entrepreneurial values, and the means of becoming more aware of how opportunities affect farm performance. Comparing strategies within the agricultural dairy industry of other regions also help reorganize strategies within firms and construct a strategic plan to improve performance of dairy farms.

The thesis possess the following research questions:

- Question 1: How are farmers becoming aware of opportunities for improved performance in Saskatchewan and Aguascalientes?
- Question 2: What do these farmers see as the key success factors of exploitation of opportunities?
- Question 3: How do these farmers improve the success rate of implementation of innovations?
- Question 4: How does innovation process differ between Saskatchewan and Aguascalientes?

1.5 Thesis Structure

This thesis is composed of six chapters. Chapter 2 reviews the literature of the most important contributions to the literature on the subject of study. Chapter 3 presents the theoretical framework in which multiple propositions are set and later tested using qualitative approaches. Chapter 4 presents the methodology used for the data collection and the tools used for the data analysis. The findings of the research questions and propositions are located

in Chapter 5. Finally, Chapter 6 provides a discussion of results, conclusions and recommendations for further studies.

Chapter 2: Literature Review

2.1 Introduction

The development of a literature and strategic theory to improve a dairy producer's performance has become important due to the complex and often changing market dairy farms experience. In addition, the dairy industry is characterized by dynamics that managers have to be aware of such as new technologies and new processes, along with limited opportunities for the development of new marketing channels (Shane, 2000; Slater & Narver, 1995). The dairy industry provides an interesting context to investigate the role of market orientation, entrepreneurial orientation, human capital, and networking on the discovery and exploitation of opportunities. The management literature provides researchers with vast amounts of information through different subjects such as marketing, entrepreneurship, networking from which the authors contribute not only to the literature but also to the managerial implications (Corbett, 2007; Lambrecht et al., 2013; Shane, 2000; Slater & Narver, 1995; Tang et al., 2012).

The structure of this chapter is as follows; first, opportunity discovery and recognition will be defined, followed by a descriptive section of market orientation, characteristics of market oriented firms. After this a review, networking literature will be described, followed by a review of the concept of entrepreneurial orientation and the research that has been done in that field.

2.2 Opportunity Discovery

Opportunity discovery is described as a fundamental factor of success in any market (Ardichvili et al., 2003). This conclusion has been supported by many authors (i.e. Corbett,

2007; Klein, 2008; Tang et al., 2012). Other authors (i.e. Shane & Venkataraman, 2000) argue that the discovery of opportunities is an important and key aspect of entrepreneurial behavior. In order to fully understand what opportunity discovery is and what affects its successful implementation and exploitation, the concept of opportunity needs to be described.

Extensive research has been made on the concept of opportunity discovery and what facilitates or impedes it (Ardichvili et al., 2003; Corbett, 2007; Shane & Venkataraman, 2000; Shane, 2000). Despite that, its definition still differs to a certain level from author to author (Shane & Venkataraman, 2000). The definition that most of the authors have adopted come from Austrian economics perspective and was written by Casson (1982). Shane and Venkataraman (2000: p. 220), based on Casson (1982), define “opportunities as those situations in which new goods, services, raw materials and organizing methods can be introduced and sold at a greater than their cost of production”. On the other hand, Singh (2001: p. 10) defines opportunity as “A potentially feasible, profit seeking business that offers a new product/service to the market, improves an already existing product/service or imitates a profitable product/service in a non-saturated market”. Finally, Ardichvili et al., (2003: p. 108) defines opportunity as “the chance to meet a market need (or interest or want) through a creative combination of resources to deliver superior value” .

Based on the classic Austrian economics literature on opportunity, three different points of view stand out for which authors, such as Schumpeter (1934), describe entrepreneurship as the business opportunities created by a combination of resources, thereby causing disequilibrium in the market. On the other, hand Hayek (1945), describes entrepreneurship as a discovery process in which opportunities exist and the entrepreneurs due to access to new information are able to identify opportunities that would not otherwise

be available. Finally Kirzner, (1997) argues that the discovery of opportunities is acquired by the constant and systematic search of business opportunities, and alertness of entrepreneurs. Under Kirzner's (1997) definition, the opportunity exists in the market whether the entrepreneur has identified it or not. Research on opportunity discovery was developed using those initial contributions and combining ideas to explain the opportunity discovery phenomena.

2.3 Opportunity Recognition

The identification of opportunities has been attributed to different personal and environmental factors. Personal factors such as experience, age, prior knowledge, social networks and cognitive abilities play an important role on the identification of opportunities (Shane & Venkataraman, 2000; Shane, 2000). Why some people and not others discover particular opportunities is one of the questions that Shane & Venkataraman (2000) ask, starting with the assumption that opportunities exist and that the discovery of opportunities is a process (learned behavior) as opposed to a one-time activity.

The attributes that help entrepreneurs discover those opportunities, according to Shane & Venkataraman (2000), are prior information (idiosyncratic knowledge) and cognitive properties necessary to evaluate opportunities. These cognitive abilities differ from person to person, allowing some to identify and combine concepts and resources into new ideas and processes with promising profit outcomes. The cognitive ability, in other words, is what makes the entrepreneur visualize the opportunity and identify new means to exploit the opportunity, and this connection is moderated by the information the entrepreneur already possesses in the market (Shane & Venkataraman, 2000).

Shane (2000) argues that the recognition of opportunities would be a function of both prior knowledge and new information. Shane (2000) also claims that people have different stocks of information, and entrepreneurs will differ from one another based on previous experiences and backgrounds, making them identify different opportunities out of the same resources. The opportunity the entrepreneur recognizes is subject to the prior information the entrepreneur has with respect to markets and how to exploit those markets. In addition, the willingness to take action on the opportunity would be subject to the potential cost of exploiting the opportunities against the potential profit drawn from pursuing the entrepreneurial opportunity.

Corbett (2007) posits that the stock of information that a person possess is an important asset in the discovery of opportunities. Also important is human capital and cognitive abilities, but perhaps most important is the ability of individuals to acquire and transform information and experience (i.e. learning) that lead to the discovery of opportunities. As opposed to other authors, Shane & Venkataraman (2000) and Shane (2000) suggest that the discovery of opportunities is determined by the knowledge an individual holds. Corbett (2007) claims that it is more important to take a look at the learning asymmetries, in which individuals, despite the knowledge they possess, differentiate their managerial capabilities. For example, how they acquire information and transform this information into knowledge to later recognize opportunities. The results from Corbett (2007) show that people differ from one another in learning processes and management of information, indicating that learning abilities are antecedents to opportunity identification.

Drawing from cognitive theory from early influential authors (i.e. Kirzner, 1973), Tang et al., (2012) posit that alertness is the most important factor when it comes to discovering new opportunities due the potential and substantial value that it adds to the

managerial vision of the firm. Tang et al., (2012) divided alertness into three different dimensions, which encourages and motivates the entrepreneur to develop activities that will increase the alertness and facilitate the discovery of opportunities. The first dimension is the constant search and scanning of the market, which would allow the individual to get a better idea of the market. Combining new information with past experience and knowledge facilitate the integration of new and old information into opportunity identification (Tang et al., 2012). The second dimension is the alert association and connection of facts in which the process of receiving new information is stressed. The most important activity here is what is commonly known as ‘connecting the dots’ making a clear relationship between information and the market is what makes this dimension an important factor of alertness (Tang et al., 2012). Finally, the third dimension is evaluation and judgment, which focuses on the opportunity from when it had been identified through the process in which the advantages and disadvantages of engaging with the opportunity are taken into account when to deciding whether to take action or not (Tang et al., 2012).

Ardichvili et al. (2003) claim that opportunity recognition is not as important as the development of the opportunity under the assumption that opportunities are created, as opposed to other authors that claim that opportunities are recognized or discovered (i.e. Shane, 2000; Corbett, 2007). The development of the opportunity according to Ardichvili et al., (2003) goes through different phases in which the opportunity is evaluated several times in order to either identify new opportunities or make adjustments to the initial plan of action. The main factors that Ardichvili et al., (2003) attributes to the discovery and development of opportunities are alertness, information asymmetries, prior information, social networks, and personal traits such as optimism to improve performance, self-efficacy, and creativity.

Opportunity discovery is recognized and attributed to different factors and identified as the pillar of the entrepreneurship. On the other hand, marketing and market orientation enhances an entrepreneur's ability to recognize opportunities and is a strategy that when combined with an entrepreneurial orientation, can develop good results (Webb et al., 2011). Marketing and entrepreneurship play an important role in the firm in which both capabilities, when integrated, work to facilitate the understanding of the customer, and at the same time allows the entrepreneur to be proactive and engage with innovation (Webb et al., 2011).

2.4 Market Orientation

Market orientation is the business culture that promotes the creation of superior value for its customers and buyers through managerial practices such as exploitation of innovations and organizational learning (Slater & Narver, 1995). This value should be created and perceived by the customers in a form of quality or price and this creation of value has to be continuous in order to lead to a competitive advantage (Narver & Slater, 1990). Further research suggests that market orientation enhances innovation and competitive advantages only when combined with learning orientation behaviors from the managers and through innovative processes, products and services (Slater & Narver, 1995).

Market orientation is based on the culture of creating superior value through constant scanning of the market and use of information from both customers and competitors, but entrepreneurs have to act on the information they hold in order for market orientation to have a positive effect on performance (Slater & Narver, 1995). Effective organizations will be characterized by the combination of different managerial and innovative practices that will allow the firm to develop knowledge and implement new ideas in order to create competitive advantage (Slater & Narver, 1995).

In the dairy industry, there are multiple variables that could affect performance (i.e. nutrition, animal health, reproduction, technology, feed prices) and the ability to implement effective processes and to meet the buyer's quality requirements would be quite important for the firm. A market orientation helps to not only create market scanning mechanisms, but also to interpret market information that can guide the firms to take action on viable business opportunities, satisfy the market needs, and improve business practices (Day, 1994; Kohli & Jaworski, 1990). In the development and implementation of a market orientation, the literature discusses five different perspectives: decision-making perspective (Shapiro, 1988), market intelligence perspective (Kohli & Jaworski, 1990), culturally based behavioral perspective (Narver & Slater, 1990), strategic perspective (Ruekert, 1992), and the customer orientation perspective (Deshpande, Farley, & Webster, 1993).

First, Shapiro (1988) posits that the coordination between departments within firms is an essential activity for the implementation of a market orientation. Shapiro (1988) also claims that a company should not only be well coordinated through departments but should also possess valuable information about the markets and the buyers of its products. He states that for a company to be market oriented, it has to understand the people who decide whether to buy its products or services. The barriers firms will confront in the implementation of the market orientation according to this perspective are the strategic administration and coordination of decisions that are made inter-functionally and inter-divisionally since function and division will inevitably have conflicts.

Shapiro (1988) concludes that customer oriented companies possess means to make these differences observable and the capacity to make trade-offs in which the company becomes more market oriented. Communication is of the highest importance in order to fight the impediments for the implementation of market orientation. Poorly coordinated firms will

lead to misunderstanding of strategies and poor performance.

The second perspective is the market intelligence perspective of Kohli and Jaworski (1990). Kohli and Jaworski (1990) offer a framework to understand and implement the concept of marketing. The model approach is based around intelligence generation, dissemination and responsiveness. “Market orientation is the organizationwide generation of market intelligence pertaining to current and future customer needs, dissemination of the intelligence across departments, and organizationwide responsiveness to it” (Kohli & Jaworski 1990: p. 6).

The starting point of Kohli and Jaworski's (1990) definition of market orientation is market intelligence which they describe as the actions by which an organization acquires the information and monitors the market looking to discover not only the consumers current and future needs but also monitoring competitor actions and strategies. They suggest that the generation of information and intelligence should be acquired in a wide variety of ways (Kohli & Jaworski, 1990). The main two are formal (i.e. consumer surveys) and informal (i.e. conversations and creating close relationships with suppliers) (Kohli & Jaworski, 1990). The last point Kohli & Jaworski (1990) emphasize is that market orientation is the responsiveness of an organization in terms setting goals taking action over the goal as well as execution of business strategies. Taking action after information is acquired is the main characteristic of the third element of the market orientation of the market intelligence perspective.

The third perspective is the culturally based behavior perspective by Narver and Slater (1990). They take an exploratory approach developing a model that consists of three behavioral components; customer orientation, competitor orientation, and interfunctional coordination (Narver & Slater 1990).

The first element is the consumer orientation in which Narver and Slater (1990) use to explain how organizations should become as close as they can to the consumer to understand and discover their needs in order to create sustainable superior value to the market. Narver and Slater (1990) also claim that to be consumer oriented the organization should be aware of the whole value chain, from main supplier to final consumer, as the creation of competitive advantage and superior value for the consumer could be done in two ways first by increasing the economic value of the product or by decreasing the consumers cost in relation to the benefits. The second element is the competitor orientation in which firms get to know and understand potential and current competitors, their strategies, and how they are meeting or planning to meet current and future consumer needs (Narver & Slater, 1990). Finally, the third element is inter-functional coordination, which refers to the coordination between departments in administering the resources in the best possible way with the final goal of value creation for the target market (Narver & Slater, 1990).

The fourth perspective is the strategic perspective described by Ruekert (1992) in which he takes a strategic perspective to develop a market orientation scale. This perspective is based on the intelligence perspective and decision-making perspectives. In this perspective, the definition of market orientation as the level in which a business unit: (1) obtains and uses information from customers; (2) develops a strategy which will meet customer needs and finally (3) implements that strategy by being responsive to customers' needs and wants. (Ruekert, 1992)

The fifth and last perspective is the customer orientation perspective, which is best described by Deshpande et al., (1993). The approach taken in this perspective is based on the behavior and beliefs the organization have about the consumer and how this affects performance. The method used in Deshpande et al. (1993) is a sampling method called

quadrad in which Japanese firms are classified to measure the impact of culture, customer orientation and innovativeness on performance. The definition Deshpande et al. (1993) give to market orientation is the set of beliefs that puts the customer's interest first, while not excluding those of all other stakeholders such as, owners, managers and employees in order to develop a long-term profitable enterprise. The framework of this definition considered the acquisition and usage of information and implementation but make emphasis on the organization culture (Deshpande et al., 1993).

2.4.1 Characteristics of market oriented firms

A market oriented firm follows the general culture and values of at least one of the theoretical foundations mentioned before and pursues a constant effort to add value and satisfy buyer's needs. A corporate culture that constantly seeks and scans information from buyers and competitors combined with experimentation with technologies to develop better and more efficient ways of producing outputs represents a market oriented firm.

In order to promote and increase the level of market orientation, communication between employees has to be effective and the goals clearly explained and shared through the whole firm. Shapiro (1998) states that effective communication between different departments within a firm will allow for better coordination and use of information to improve the processes and products to be able to produce a better product. A more coordinated firm will create a solid working team in which the creation of intelligence through information and market scanning would allow the firm to respond to market needs and identify competitor's actions and strategies (Kohli & Jaworski, 1990). Some firms spend resources in acquiring information to develop adaptability and flexibility to respond to the market's needs in order to become market oriented, while others engage in innovation and marketing strategies such

as branding, differentiating products, and product extensions (Kohli & Jaworski, 1990; Narver & Slater, 1990).

Another characteristic of market-oriented firms is that they pursue actions of collective learning within the firms that allow them to create the ability to continuously anticipate market needs. This learning orientation and proactive market orientation are key to acquiring the ability to identify and satisfy latent needs of the market (Slater & Narver, 1995).

2.4.2 Responsive vs. proactive market orientation

Recently, authors have differentiated between two approaches of market orientation: reactive and proactive (Mateja, Germa, & Vesna, 2012). This was due to a conflict in the literature in which authors claim that the implementation of market orientation in dynamic environments would neither help achieve a competitive advantage nor lead to higher performance (i.e. Christensen & Bower, 1996). In response to these claims, Slater & Narver (1998) made a clear differentiation between a customer-led and a market oriented firm (Slater & Narver, 1998).

The market orientation view comes from the implementation of the marketing concept in which the firm that most effectively and efficiently identifies and satisfies customer needs will outperform their rivals (Narver, Slater, & MacLachlan, 2004). From this concept, the two approaches (responsive and proactive) will be implemented depending on the environmental dynamics. In business environments that are characterized by a high degree of change, the responsive market orientation will not be enough to create a competitive advantage and superior value. Instead the responsive market orientation will have to be complemented by the proactive market orientation in order to create superior value

and superior performance (Narver et al., 2004).

Firms with a responsive market orientation strategically manage the business activities based on expressed buyers' needs. These strategies may be successful if the firm creates what the buyer is asking for, but also has the disadvantage that competitors can easily imitate the strategy (Narver et al., 2004). On the other hand firms with a proactive market orientation implement a more seeking approach inclined to discover market opportunities and proactively innovative with the purpose of better satisfy the buyer's needs (Narver et al., 2004). The composition of market orientation from the responsive and proactive orientation should be used together in order to create the competitive advantage under any environment.

2.5 Networking

The participation of farmers in networks and “their ability to acquire, assimilate, transform and exploit external knowledge is related to their level of innovativeness and profitability” (Tepic, Trienekens, Hoste, & Omta, 2012: p. 1). It is quite important to research about the role that networking has on the agricultural business in innovation and market orientation to see how the farmer's interactions affect performance (Lambrecht et al., 2013). Previous research has found a link between networking and innovation (i.e. Ahuja, 2000; Lambrecht, Taragola, Kuhne, Crivits, & Gellynck, 2013). Powell, (1996) found that inter-organization interaction will impact favourably the firm's behaviour and outcomes. Specifically, Powell (1996) reported an increase in innovation, learning, and growth rate in firms that had more inter-organization networking than the ones that did not.

It is clear that the level of market orientation is strongly correlated with the ability to learn and disseminate information, but also to the application of information when transformed into knowledge (Slater & Narver, 1995). Networking is one of the tools

enterprises have developed to work in projects, acquire information, implement technologies, and stay up-to-date on market needs. As a consequence, firms belonging to networks are able to produce and share knowledge between participants, thus creating competitive advantages.

The application of network theory in the agricultural sector is extensive, mainly through formal organizations such as cooperatives, networking organizations, associations, unions, advisers, and consultants. There are also informal networks that consist of interactions with people, companies, suppliers, clients and neighbours. Besides informal and formal networking, there exists also vertical and horizontal networking. Vertical networking consists of creating better and closer connections with supply chain participants, while horizontal networking consist of interactions with other farmers of the same commodity.

Chamala & Shingin (1997) identify two kinds of farmer organizations, one being a Community-Based Resource-Oriented farmers organization in which the participants interact in a small cooperative to deal with input needs and enhance business. These organizations are characterized by having a defined geographical area and financial capital acquired from the sale of inputs that later on are reinvested on extension, data collection, business planning, and administration (Chamala & Shingi, 1997). The other kind of organization is the Community-Based Market-Oriented organization in which the activities are almost completely different since it specializes in a single commodity and the main goal is to create value to the customers through the products or outputs. In order to do this, the participants invest some share capital that will allow them to acquire the most recent processing technologies and human capital (Chamala & Shingi, 1997).

Others authors (i.e. Oreszczyn, Lane, & Carr, 2010) classify two groups from the learning process. On the one hand, communities of practice pursue a common goal and establish formal ties that are made and identified between its participants. On the other hand,

the networks of practice are groups of people that informally interact and exchange information and knowledge about business practices as know-how, and other strategies are also assimilated and transmitted. Communities of practice are able to interact with networks of practice since they have the ability to combine knowledge and create a competitive advantage with the information shared from different communities of practice and perspectives (Oreszczyn et al., 2010).

Distinguishing between the different networks and farmers interactions is important, but what is the most important is to understand how, why, and where these interactions are taking place and how these interactions and learning orientations are changing the behaviours of rural entrepreneurs to improve performance. Independent variables like trust and credibility will have an impact of the level of practice and effectiveness of networks (Oreszczyn et al., 2010).

2.6 Entrepreneurial Orientation

Entrepreneurship covers a broad range of activities and it has been difficult to attribute everything that it involves in a specific definition. Some of the activities included in entrepreneurship are start-up business, innovation, exploitation of opportunities, proactive behaviour and risk taking (Nasution et al., 2011). On the other hand, an entrepreneurial orientation refers to strategy-making and processes that allow the entrepreneurs to make decisions and take actions (Rauch, Wiklund, Lumpkin, & Frese, 2009).

Nasution et al., (2011) emphasizes innovation in their definition of entrepreneurship, describing it as a process that creates wealth through innovation and exploitation of opportunities that requires risk taking, autonomy and proactiveness. A firm could be classified as having an entrepreneurial orientation only if it has a number of cultural values

and managerial behaviors such as risk taking, innovativeness, proactiveness and competitive aggressiveness (Lumpkin & Dess, 1996). Some of the characteristics for a firm with an entrepreneurial orientation are a low degree of risk aversion and a willingness to invest in projects where the outcome will involve the potential for an increase in growth, performance, and market share. The pro-activeness of a firm to work to implement new processes for the firm in order to increase profitability, effectiveness and efficiency will also be important characteristic of entrepreneurial oriented firms (Lumpkin & Dess, 1996).

Authors like Grande et al., (2011) suggest that firms in turbulent environments (i.e. a unstable market in which technology and operations constantly change) need to restructure their resources, develop new strategies and business platforms based on new opportunities in the market. An entrepreneurial orientation would then lead firms to have a different managerial style in which they practice proactive business activities, risk taking and innovativeness to create the competitive advantages necessary to improve performance.

There are no step-by-step instructions to develop an entrepreneurial orientation, nor extensive research within agriculture describing how they become more entrepreneurial. However, from the literature it is known that market oriented firms construct strategies based on the ability to be more interpretative, reflective, creative and innovative (Miller & Friesen, 1983).

One of the first significant contributions to the literature about entrepreneurial orientation was made by Khandwalla (1970) which lead to the construction of the first empirical model by Miller & Friesen (1983). Before that, Miller & Friesen (1978) had identified three of the dimensions of an entrepreneurial orientation, which are risk-taking, innovativeness, and pro-activeness. It was not until Miller and Friesen (1983) that the first empirical model was developed. This model calculates the level of entrepreneurial

orientation, taking into account the three dimensions of risk-taking, pro-activeness and innovativeness out of the 11 in total that they identified to that point the author called this the dimensions of innovation as part of a strategy-making process.

Risk Taking has historically been associated with entrepreneurship due to the great level of risk start-up business encompasses but as well the level of risk that is undertaken by the organization when pursuing any opportunity with a chance of failing. Other examples of risk taking are investment in technology, new processes, and borrowing heavily. Pro-activeness is the dimension to which decision-makers are characterized by looking and predicting the future business trends and the response to the predictions (Miller & Friesen, 1978). Lumpkin & Dess (1996) suggest that pro-activeness is an essential component of the entrepreneurial orientation due to the characteristics of new-ventures seeking and exploitation of those innovative opportunities. The lack of pro-activeness could eventually isolate the producers from the implementation of more effective process and technologies and consequently not allow them to achieve their full potential in terms of profitability.

Many authors from the early literature of entrepreneurship support the innovativeness dimension. Covin and Slevin (1989) identify conservative organizations as opposite to entrepreneurial organization and claim that in order to develop competitive advantages the decision-making should be allowed to take risk and promote innovation. In addition Miller (1983) emphasizes that being entrepreneurial is attached to the innovative abilities of individuals. Lumpkin & Dess (1996: p. 142) describes innovativeness as “a firm’s tendency to engage in and support new ideas, novelty, experimentation, and creative process that may result in new products, services or technological processes”

In this investigation Miller & Friesen (1983) claim that the most appropriate business strategy will have to depend upon the current market environment as well as the predicted

events of the future trends. “The degree to which strategy making is an interpretive, reflective, creative and innovative process is expected to have a strong bearing on how well a firm is able to perform in the face of increased environmental challenge and complexity” (Miller & Friesen, 1983: p. 222).

Miller & Friesen (1983) stated that successful organizations would show a more positive behavior towards innovation than unsuccessful organizations. Miller (1983) found that organizations renew their strategy-making process by pioneering, innovating, and taking risk. While Miller (1983) suggests that there is little agreement on the determinants of entrepreneurship, he does claim that they can be divided in three groups, including: 1) Personality as the main determinant, 2) An organizational structure promotes innovation which leads to entrepreneurship, and 3) Strategy-making culture that determines entrepreneurship (Miller, 1983). Miller (1983: p. 771) then describes an entrepreneurial firm as one that “engages in product-market innovation, undertakes somewhat risky ventures, and is first to come up with "proactive" innovations, beating competitors to the punch”. This approach came to be known as entrepreneurial orientation. It was a definition that marked a path in the entrepreneurship literature. On the other hand, Miller (1983) defines a non-entrepreneurial firm to the one that does not engage in product-market innovation and that is characterized by high levels of risk aversion. These kinds of organizations imitate rather than innovate.

Another study that greatly contributed to the entrepreneurship literature that stressed the strategic decision-making perspective was Covin and Slevin (1989). In their research article, the authors describe managers with an entrepreneurial management style as the opposite of a conservative managers, which managerial style is characterize by risk-averse, non-innovative and reactive behavior (Covin & Slevin, 1989). Covin and Slevin (1989) also

suggest that on the one hand organizations in highly competitive markets are more likely to develop competitive advantages in order to improve performance. These competitive advantages are the results from proactiveness, innovativeness and risk taking. On the other hand, organizations under benign environments do not take the same approach but to rather tend to be conservative (Covin & Slevin, 1989). This statement is also supported by other studies (i.e. Miller & Friesen, 1983; Miller, 1983).

In the entrepreneurial orientation literature, a significant contribution was made by Lumpkin & Dess (1996) who based on other authors (i.e. Covin & Slevin, 1989; Miller & Friesen, 1983; Miller, 1983) added two dimensions (Competitive Aggressiveness and Autonomy) to the three dimensions of risk taking, pro-activeness, and innovativeness of the entrepreneurial orientation construct. Lumpkin & Dess (1996) first agree with the entrepreneurial definition from Miller (1983), who describes entrepreneurial oriented firms as those who engage in product market innovation with a proactive approach and possess certain risk tolerance needed to innovate. Lumpkin & Dess (1996) then emphasizes “beating competitors to the punch” and argue that the intensity of competition is an everyday situation on the any product market and claims that competitive aggressiveness was highly correlated with entrepreneurship across all levels of risk by (Dean, Thibodeaux, Beyerlein, Ebrahimi, & Molina, 1993).

Competitive Aggressiveness refers to the behavior of participants within the same market competing with each other and is an essential part of the market since every participant is “fighting” for a share of the market. It is therefore of great importance to consider competitive aggressiveness as a component that helps firms to be entrepreneurial and construct the right strategy for the market. A significant literature was developed by Porter (1985) in which he argues how new entrants need this competitive aggressiveness to

survive and gain power with competitors and costumers and by adopting a strategy for example would be decreasing the price with respect to their competitors (Porter, 1985). Lumpkin and Dess (1996: p. 148) describes competitive aggressiveness as a “firm’s propensity to directly and intensely challenge its competitors to achieve entry or improve position, that is, to outperform industry rivals in the marketplace”.

The second dimension Lumpkin & Dess (1996) adds to entrepreneurial orientation is autonomy. Autonomy is needed to develop a business start-up and within organizations the level of autonomy is correlated with entrepreneurship and leadership to engage with innovation. In other words, layers of bureaucracy and organizational structures characterized by low levels of autonomy will be counterproductive to increase the level of entrepreneurship and innovativeness (Lumpkin & Dess, 1996). For example the degree to which a farmers let his/her workers take their own decisions and hear their opinions on how to improve processes reflects the level of autonomy.

A firm that actively practice the dimension of autonomy would for example be characterize by their employees having independence and autonomy to vote, suggest and even implement new processes and innovate in ways that other bureaucratic organizations would not (Lumpkin & Dess, 1996). Lumpkin and Dess (1996: p.140) define autonomy as “the independent action of an individual or a team in bringing forth an idea or a vision and carrying it through to completion”.

The entrepreneurial orientation is not a one-time action, but is followed by an implementation process and sustainable use of the five dimensions of entrepreneurial orientation. According to Lumpkin and Dess (1996), the five dimension of entrepreneurial orientation are autonomy, innovativeness, risk taking, pro-activeness, and competitive aggressiveness. The first three dimensions are based on other authors like i.e. (Miller, 1983;

Miller & Freisen, 1983; Covin & Slevin, 1989).

2.7 Chapter Summary

This chapter provided the literature review from what this research is based on. The theory on discovery and recognition of opportunities was explained through different authors. Then the chapter explored and provided information on what factors may influence the discovery and exploitation of opportunities. Theories and attributes like networking and prior information were discussed. Business strategies and managerial behaviours were then stressed in the form market orientation and entrepreneurial orientation. The following chapter will provide the theoretical framework on which propositions to identify what influences on the discovery and exploitation of opportunities.

Chapter 3: Theoretical Framework

3.1 Introduction

This chapter describes the theoretical framework of the study, which builds on the approach of Shane (2000). The purpose of this thesis is to examine how dairy producers involved in the process of discovery and exploitation of opportunities, and what moderates the success of the implementation. Opportunity discovery involves not only entrepreneurship theory, but also topics such as market orientation, human capital, and networks. This chapter will use the literature to build the respective propositions that may moderate the identification and exploitation of opportunities.

First, the theories of opportunity discovery and development are briefly explained. After that, the roles and the significance of information and networking as key factor of opportunity recognition and its implementation are described. Then an explanation is given about why prior information about the market and customers is considered an asset. Finally theories on market and entrepreneurial orientation are discussed to examine the influence and impact these two orientations could have towards opportunity recognition and its implementation.

3.2 Opportunity discovery and development

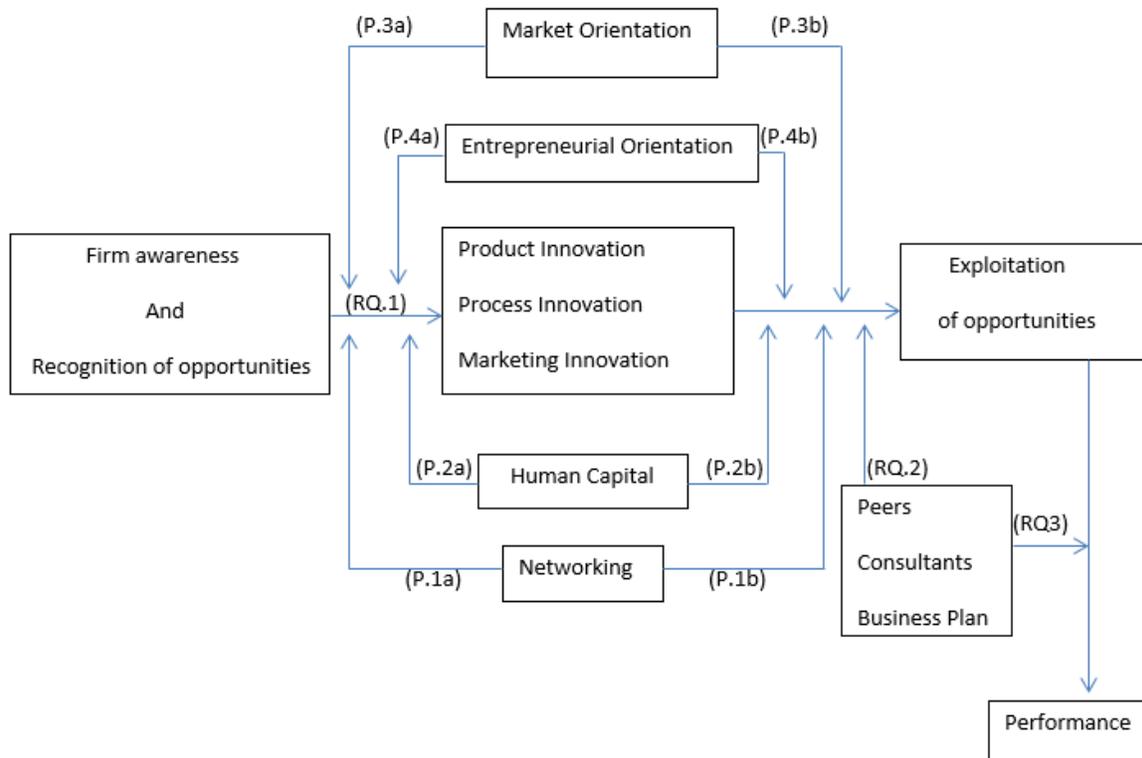
The discovery of opportunities is a complex process, and it can be explained by multiple theories that contribute to the identification and exploitation of the opportunities within a firm. In particular, in this study the opportunities identified are limited to marketing, process, organizational and product innovations. The issue to be identified is how, and through what process, farmers identify opportunities and exploit them. In order to do so, a theoretical

framework is built in which not only theories such as entrepreneurial and market orientation play an important role, but also awareness, social networks and prior knowledge would contribute to the identification and development of business opportunities.

Unlike a perfect market where all opportunities, information and resources are equally distributed, this research takes a more realistic approach in which it assumes that opportunities, information, and resources vary from one producer to another. This coincides with the approach Shane (2000) and Shane & Venkataraman (2000) took which is based on Hayek's (1945) theory that opportunity discovery is a function of the distribution of information in society. What this means is that different people with different information and prior knowledge will identify different opportunities (Shane & Venkataraman, 2000; Shane, 2000; Venkataraman, 1997). Figure 1 describes the discovery of opportunities and the process of the exploitation and the variables that moderate both the discovery and exploitation of opportunities. This is an adapted version of a similar figure found in Shane (2000).

Figure 3.1 visually describes the process in which farmers discover opportunities. It starts with the farmer becoming aware an opportunity, this research takes into account three different innovation opportunities (product, process and marketing). The “a” propositions (P.1a to P.4a) indicate that the subject; market orientation, entrepreneurial orientation, human capital/prior information and networking have a direct impact on the awareness of that opportunity. The “b” propositions (P.1b to P.4b) indicate that the subjects have a direct impact on the successful exploitation/implementation of the opportunity discovered. Finally, Figure 1 displays three research questions of the thesis (RQ1 to RQ3) and what's the role of peers, consultants and formal planning (business plans).

Figure 3.1 Conceptual Model and Propositions.



3.3 Information and Networking

Business opportunities include the possibility to bring into existence new goods, services, raw materials, and organizing methods that allow outputs to be sold at more than their cost of production (Casson, 1982; Shane, 2000). Since the ability to identify opportunities will be determined by the information available and the quality of the information a farmer holds, it is expected that information flows and networking would increase the awareness of opportunities. Now the awareness of opportunity will be used interchangeably with the opportunity identification or recognition, which by definition is sensing or perceiving a gap in the market or a need that combines resources that lets the producer fill this need and add value to the products the firm delivers (Ardichvili et al., 2003).

The interaction with other people that possess important information about the market could be a key to the discovery of opportunities, since this information would shape their visions and opinions on particular business projects (De Carolis & Sapiro, 2006). In networking, the transfer of knowledge and information would facilitate the understanding of processes and technologies within the members, consequently with the combined use of information and knowledge the opportunities are easier to be identified by the entrepreneurs (De Carolis & Sapiro, 2006).

Empirical findings such as those found in Westerlund and Rajala (2010) support the theory that firms tend to be more open when it comes to obtaining ideas about product innovations promoting networking but when it comes to developing and exploiting those ideas or business opportunities they either do it by themselves or do outsourcing for the implementation process.

In the dairy industry, the possibility of using network groups comes in different ways. The most common is to join the cattle association, which certifies the herds and provides with information about prices, practices, and animal health/gens. Cattle association also hold meetings that can be a good opportunity for dairy farmers to network and learn from each other. Another option is the commercial boards that have regular meetings arrange around the year for dairy farmers to network and exchange ideas, during this meeting there would be speakers and researchers exposing findings into important subjects that directly affect the industry, for example: policy, feed prices, animal health, technology and innovation processes. Finally, due to the increase of use of internet there are also options to interact and network through the web and become aware of opportunities. Therefore I formally propose:

Proposition 1a: Firms with broader social networking will be positively correlated

with the discovery of opportunities and innovations.

Proposition 1b: Firms with broader social networking will have a higher innovation success rate.

3.4 Human Capital

Research on the area of opportunity discovery has shown that human capital and prior knowledge are moderators for opportunity discovery (i.e. Ardichvili et al., 2003; Shane & Venkataraman, 2000; Shane, 2000; Venkataraman, 1997). Venkataraman, (1997) was one of the first to claim that the differences in the possession of information would be what differentiates entrepreneurs who discover and visualize the business opportunities from those that do not. Shane (2000: p. 452) states that “Prior information whether developed from work, education, experience, or other means, influences the ability to comprehend, extrapolate, interpret and apply new information in ways that those lacking that prior information cannot replicate” . As farmers have different levels of information from past experience, age, and education this would play a significant role on the identification and development of innovation (Shane, 2000; Venkataraman, 1997).

A very important contribution to the opportunity discovery literature is the one made by Shane (2000) in which he developed a research experiment that consisted of giving a 3D printer to multiple entrepreneurs with different backgrounds to find what entrepreneurial opportunities they envision or exploit the technology. The results were different from each entrepreneur due to the prior knowledge, which shows that different people with access to the same technology would exploit opportunities in different ways depending on their prior knowledge.

Corbett (2007) stressed the importance of human capital and how this leads to the discovery of opportunities. Moreover, Corbett (2007) also indicated that developing the

entrepreneur's ability to learn affects the likelihood of discovery of entrepreneurial opportunities. The theoretical framework and empirical model from Corbett (2007) proved that learning is the process, and the ability of entrepreneurs to acquire and transform information into knowledge is positively correlated with the number of opportunities entrepreneurs eventually discover. Ardichvili et al., (2003) also suggest that prior knowledge triggers business opportunity discovery and implementation. The way Ardichvili et al. (2003) shows that discovery of opportunities is done is by three different dimension (personal traits, social networks, and prior knowledge) that combined, make up the entrepreneurial alertness that triggers the discovery of business opportunity. The information the entrepreneur possesses about the markets and the ways to satisfy the customers will have a significant impact on the discovery of opportunities as well as in the exploitation of them (Ardichvili et al., 2003).

The dairy industry is very dynamic which means technology changes fast and improving performance through new process and usage of resources is constantly developed. The way dairy farmers discover opportunities and use information to implement new processes can be influence by their human capital (i.e. years of experience in the field, their level of education, as well as how they approach innovation in the past). Therefore I formally propose:

Proposition 2a: Human Capital is positively correlated with the discovery of opportunities and innovations.

Proposition 2b: Human Capital would be a significant key success factor in the implementation of opportunities.

3.5 Market Orientation

The capability to deliver better products and exploit innovations is influenced by the generation of market intelligence and the ability to learn (Slater & Narver, 1995). Entrepreneurs that develop an ability to learn faster than their competitors will put them in a better position to develop a competitive advantage (Slater & Narver, 1995). Market orientation in general is the culture that promotes the delivery of better products to the customers or buyers. In order to produce at lower cost and deliver better quality products, firms have to scan the market, search for technologies, exploit opportunities, identify how markets are changing, and determine market demand. The intelligence created by the constant acquisition and dissemination of information is an asset to the firm (Kohli & Jaworski, 1990).

As the market orientation perspective transforms over time, the emphasis on the discovery and exploitation of opportunities becomes more obvious. First, authors like Kohli & Jaworski (1990) and Narver and Slater (1990) developed theories to transform the marketing definition into market orientation, which was a more sophisticated customer oriented strategy. Then, Slater and Narver (1995) and Jaworski & Kohli (1993) included a more risk taking and learning orientation approach in which firms develop more managerial capabilities that were not limited to only adding value to the products. Finally, this approach agrees with suggestions of authors like Shane (2000) and Shane & Venkataraman (2000) that focus on the discovery and exploitation of opportunities stressing the importance of development of knowledge, information acquisition, risk taking and learning practices.

In the dairy industry the action of isolating from other producers and peers is a phenomenon that is very common and goes against everything market orientation suggest. The implementation of market orientation in the dairy industry would require producers to obtain, analyze and disseminate information about new processes and innovations that

improve performance. In addition, market orientated firms would transform the information into knowledge and learning to develop market intelligence to accurately estimate how technologies would improve their performance. A practical way to acquire information and measure technology performance is through the implementation of competitor orientation/benchmarking strategies with other producers under the same environment forces. Therefore I formally propose:

Proposition 3a: The level of Market Orientation is positively correlated with the discovery of opportunities and innovations.

Proposition 3b: The level of Market Orientation will build the market intelligence on the producer, which would facilitate the exploitation of the opportunities.

3.6 Entrepreneurial Orientation

The managerial style an organization takes will have significant impact on the strategies implemented, which opportunities are discovered, and how they create value for customers (Lumpkin & Dess, 2001). Managerial style will also dictate the level of competitive aggressiveness firms deploy in their interactions with competitors. It is of high importance to examine the organizational and strategic process of the firms to determine how the values and strategies affect the discovery and exploitation of opportunities (Lumpkin & Dess, 1996).

The concept of an entrepreneurial orientation refers to the process, strategic orientation, and decision-making styles the manager employs within the firm. This can include experimentation with promising new technologies, the willingness to seize new product-market opportunities, and a tendency towards taking risks with a proactive innovative approach (Lumpkin & Dess, 1996; Miller, 1983; Wiklund & Shepherd, 2003).

This thesis takes into account three dimensions of an entrepreneurial orientation; innovativeness, proactiveness and competitive aggressiveness. Innovativeness involves a managerial style that is characterized by the constant pursuit of novel and creative solutions for market needs or process challenges that improve the efficiency of the organization (Lumpkin & Dess, 2001). Entrepreneurial-oriented firms possess a managerial style that promotes innovative process as well as incremental innovations on market products (Covin & Slevin, 1989).

Proactiveness, on the other hand, is the culture in which decision-makers are characterized by the constant actions predicting and shaping future trends and the adaptation to these organizational strategies (Miller & Friesen, 1978). The constant implementation of proactive activities give firms a competitive advantage to exploit business opportunities that other competitors will not. Lumpkin & Dess (2001: p 431) defines proactiveness as “an opportunity-seeking, forward-looking perspective involving introducing new products or services ahead of the competition and acting in anticipation of future demand to create change and shape the environment”. Once the information about market trends is acquired, organizations are able to adapt their strategies in order to have better market performance and create competitive advantages over firms that either do not identify those trends or do not adapt to satisfy the new market needs. In the area of opportunity identification and exploitation, proactiveness may play a significant role due to the activities that proactive firms employ and the benefits drawn from it (Lumpkin & Dess, 1996).

One of the attributes that Lumpkin & Dess (1996) added to the early literature and research of Miller (1983) was the dimension of competitive aggressiveness, which is also supported by Porter (1985). The competitive aggressive behavior consists on the level of aggressiveness a firm adds in their managerial style. On the one hand, some firms would take

a “live and let live” approach while other firms fight against competitors with marketing strategies in order to get contracts, buyers, and customers. Lumpkin and Dess (2001: p. 431) claim that competitive aggressiveness “reflects the intensity of a firm’s efforts to outperform industry rivals, characterized by a combative posture and a forceful response to competitor’s actions”.

The competitive aggressiveness behavior will have a great impact on the motivation of decision makers to promote actions to outperform combining this with the proactiveness the firm will be constantly seeking for opportunities and be willing to innovate and engage with new ideas.

In the dairy industry, entrepreneurial oriented farms would be characterized by continuously seeking innovation technologies and processes with the potential to improve their performance. The implementation of proactive activities means that the farm test and experiment with different tools and products in order to increase efficiency. In addition to that, proactive farms engage with cattle associations, groups of producers and keep close relationships with governmental agencies and continuously seek for programs that support producers in the dairy industry. Therefore I formally proposed:

Proposition 4a: Entrepreneurial Orientation is positively correlated with the discovery of opportunities and innovations.

Proposition 4b: Entrepreneurial Orientation would be a significant success factor in the implementation of opportunities.

3.7 Chapter Summary

This chapter presented a theoretical framework and a conceptual model that proposed different theories along the process of discovery and exploitation of opportunities. In the search of the best managerial and innovative practices, these theories potentially explain what

components are included in the most efficient dairy farm's practices in terms of effective approach to innovations and exploitation of business opportunities. The propositions are not only described but also explained on how they could influence the process and improve performance. In addition, the conceptual framework also showed the different key players that could influence the successful exploitation of innovations through directly helping farmers with the implementation process. The following chapter describes the methodology used to test these propositions and the data collection.

Chapter 4: Methodology

4.1 Introduction

The aim of this chapter is to provide a description of the methods used in this research. In order to answer the research questions, this thesis takes an exploratory approach using qualitative tools, including a semi-structured questionnaire guide¹ to perform in-depth interviews with dairy producers in Canada and Mexico. I personally made the interviews and the interviews took place between December 2013 and January 2014 in Aguascalientes, Mexico and February and March 2014 in Saskatchewan, Canada. This chapter begins with a discussion and explanation of the different methodologies leading to the explanation of why the exploratory case study was the most appropriate for this research. In the second section, the case design and selection of participants are discussed. The third section includes an overview of the case study procedures, and provides specific details about the interview instrument and methods of data analysis. Finally, the last section explains the validity and reliability of the methods used in this thesis.

4.2 Justification of Methodology

There are many ways to conduct research in the fields of economics and social science, including case studies, experiments and surveys. Choosing the correct method will depend upon the nature of each investigation and its characteristics. The chosen method should be the one that fits the research and the researcher's needs best. This will allow the researcher to extract quality information and make an accurate analysis.

According to Yin (2003), the most important thing when choosing the methodological

¹Refer to Appendix A to find the Interview Guide

strategy is to look at the research questions. Yin (2003) suggests that “what” questions can be exploratory, but he adds that for the “how” and “why” a case study approach would be the most appropriate. This thesis investigates how dairy producers undertake the process of opportunity discovery, how they exploit those opportunities, and what moderates the success of this process. This research uses a qualitative methodology (face to face interviews) as opposed to quantitative methods (survey) due to the limitations within quantitative approaches to capture the idiosyncrasies of descriptive information about how farmers perceive competitors, through what process they have to go to implement innovations and the roles other stakeholders in the dairy industry play in terms of the implementation of innovations.

It is important for this research to acquire detailed information about the process and behavior of dairy farmers throughout the innovation process. This rich information can be best acquired through semi-structured interviews. First, this approach allows the researcher to collect detailed information on “how” the process goes for different farmers providing the respondents with the freedom to express specifics and also the opportunity for the interviewer to add subsequent questions to the interview, consequently generating richer data than a survey would generate. Second, in order to obtain insights on what represents some of the managerial activities, the interviews allow the researchers to identify the body languages and behavior of respondents towards different aspects and draw accurate conclusions on how things are perceived and valued by the respondents. Finally, in order to understand the rationale behind different managerial behaviors, as well as perceptions and performance of business tools that farmers could use, it was essential for this study to implement a semi-structured interview.

4.3 Semi- structured questionnaire design

Research within the literature of the discovery of opportunities was done in advance before the development of the semi-structured questionnaire started. After the development of the interview guide, propositions were built on alternative theories that could have a direct impact or enhance the discovery of business opportunities and their successful implementation. The semi-structured questionnaire consists of 20 questions, including follow up questions and options. The interview guide is divided into 4 sections. The first section consists of questions related to general demographic, marketing and human capital resources. In the second section, the interview guide focuses on extracting the information about the implementation of innovation and the specifics of its implementation. The third section investigates the networking activities and how those affect the way farms do business. Finally, the last part of the guide leads to obtaining information about the managerial style of the farmers, their perception of the market, and how satisfied they are with their performance.

4.4 Participants and data collection

Selection of participants is an important and essential process of any study, and having the appropriate strategy to choose the sample will significantly affect the quality of the results. A big difference can be found between the way a sample is chosen from a quantitative method and qualitative method. As Patton (1990: p. 69) states, “Perhaps nothing captures the difference between quantitative and qualitative methods than the different logics that undergird sampling approaches”. On one hand, the qualitative approach looks into having an in-depth approach with a small sample. On the other hand, quantitative studies in order to

have a significant sample a calculation have to be made under statistical rules to be able to generalize over a certain population.

The number of cases in the qualitative studies is important, but there is not a rule as in quantitative methodologies. The number of cases is left to the researcher (Patton, 1990). Some authors (i.e. Eisenhardt, 1989; Lincoln & Guba, 1985; Yin, 2003) suggest that the number of cases influences the richness of information; the more cases the better, within certain boundaries. After some interviews, the researcher gets to a “redundancy point” (Lincoln & Guba 1985) or reaches a “theoretical saturation” (Eisenhardt, 1989), in which adding more cases does not provide additional insights to the research. The widest acceptable number of cases falls within a range of two to four as minimum and ten to fifteen as maximum (Perry, 1998). During this thesis, the theoretical saturation and redundancy point were met, and at that point the interviews stopped.

For this research, 14 dairy farmers in Aguascalientes, Mexico were selected that are 1) working under the same market forces, 2) have acquired or implemented an innovation in the past 3 years, and 3) are roughly the same size. Under the same setting, but in Saskatchewan, Canada, nine dairy farmers were interviewed in order to be able to analyze the similarities and differences of opportunity discovery and exploitation in two different countries. The summary of the demographic information is presented in Table 1. The information is displayed according to the median of each sample.

Table 4.1: Demographics

Characteristic	Mexico	Canada
Number of Interviewees	14 managers	9 managers
Experience (Median)	18 years	24 years
Size (Median)	136 head	310 head
Education (Median)	6 years or primary school	12 years or high school
Production per cow (Median)	25.75 litres per day	33.82 litres per day

The fourteen dairy farmers in Mexico were approached through the University Autonoma of Aguascalientes's Professor Dr. Arturo Valdivia, who has been working with those farmers in a socio-economic research and already had a very close relationship with them. In general, all interviewees were chosen with the only condition that they needed to have implemented an innovation within the past three years. The participants were explained the main objectives of the research and were advised about the confidentiality of the information they provided. The interviewees were told that their information was going to be kept confidential and that the results were not going to identify individual producers. The interviewees were also informed that the research proposal had undergone ethics approval and was approved by the University of Saskatchewan Research Ethics Board (BEH #13-342). In addition, the usage of a consent form (Appendix B) for each individual was signed by the researcher and interviewee in which the specifics about the research in terms of objectives,

procedures, potential risks, potential benefits, confidentiality and right withdraw were explained in detail.

The interviewees were asked permission to be recorded and they were given the option to deny or withdraw from the research at any point. Even though the names of the participants were recorded on the transcription section, a number was given to the producer to remove their identity from their responses. All interviews took place at the interviewee's dairy farm with an appointment made in advance. All interviews were recorded, translated, and transcribed to facilitate data collection, codification, and analysis. The analysis was done with the usage of a software package, called NVivo 10, which aids in the analysis of qualitative data.

4.5 Data Analysis

The analysis of the data is an essential part of the research and the efficient development of it will influence the interpretation of results. The analysis of the data is the heart of the research and is very difficult, especially in case studies because the codified part of the process has not been well defined (Eisenhardt, 1989; Yin, 2003).

According to Yin (2003) there are two general approaches; relying on theoretical propositions and developing a case description. These approaches should always be followed by any of the four dominant modes of analysis; pattern-matching, explanation-building, time series analysis, or program logic. Having a clear path of analysis and justification would not only lead to an increase in the credibility of the research but also reinforce the internal and external validity. Validity and reliability will be discussed later in this chapter.

The first approach relies on theoretical propositions, which is the strategy this thesis uses and it is also very popular among other researchers because of its usefulness and

effectiveness. The strategy is to follow the theoretical propositions in the research to manage the data and make comparisons between units of analysis (different farms). Following the developed propositions will allow the researcher to get insights and identify patterns within the units of analysis. Relying on the theoretical proposition approach had the best fit for this research because it allows the study to identify in an exploratory way how managerial concepts from the theories are being used and how these theories are helping dairy farmers discover and exploit opportunities. The second strategy is called “developing a case description” and serves as an analytic strategy when theoretical prepositions are absent. Developing a case description is mostly used when the research is descriptive as opposed to exploratory.

The dominant modes (pattern-matching, explanation-building, time series analysis and program logic) of analysis are the specific techniques suggested by Yin (2003) in which the researcher should “play around with the data” to get better insights and be able to look at it from different perspectives. During this research the use of “pattern-matching” procedures were implemented and this was due to the in-depth interviews data and the type of research questions.

Regarding this research, the components of the interview guide provide a data that is linked to the prepositions, and also facilitate the interpretation of the findings. The interviews were recorded, transcribed and coded into nodes to ease its analysis. Once the 23 interviews were transcribed, the data was organized by countries. Having the Mexican and the Canadian interviews separated the data was then organized into seven different nodes in NVivo 10. The first four nodes are the condensed questions related to each of the subject propositions; human capital, networking, market orientation and entrepreneurial orientation. The three nodes are the condensed questions related to the researched questions of the thesis.

Linking data to research propositions was made through the identification of the dimensions from the literature review and the answers each individual provided. Finally, the criteria for interpreting the findings were established through “pattern-matching” based on the repetitions of answers and visual comparison of each unit of analysis and results from the software. In addition, a social networking analysis methodology was implemented first through the interview guide to collect the data and then through a network node in NVivo 10.

The way to analyze the data is left to the researcher to develop and implement his/her own process through the analysis. Despite a lack of rules regarding qualitative methods, there are several important suggestions to follow. One of the most popular suggestions on how to analyze the data is made by Miles & Huberman (1994) in which they break down the analysis in three main parts; a) reducing the data, b) displaying the data, and c) drawing and verifying conclusions. This thesis follows Miles and Huberman (1994) method of analysis.

Reducing the data is about summarizing, setting and transcribing in the data into a more organized way in which facilitates the researcher to draw conclusions, identify categories/nodes and start to code the data. In this process, NVivo 10 divided the data into clusters of information, coding it in a way that it separates each subject. The questions and answers from the semi-structured interview guide were placed corresponding to what they were related to, for example entrepreneurial orientation, market orientation, networking, and human capital. In addition, three more nodes were created in Nvivo for the three different research questions. By reducing the data, the researcher focuses on the interviewee’s core answers and how this potentially contributed to the research questions. It also allows the researcher to isolate the “noisy” data from the valuable information.

The second suggestion by Miles and Huberman (1994) is to display the data. It helps

to organize the data in order to look at a big amount of data at once. For this strategy, NVivo 10 allows the researcher to display the data by subject, by interview, by country and by research question. Consequently, it facilitated the pattern building process, which led to justified conclusions.

Finally, the last process would be drawing and verifying conclusions. At this point, the data was coded and displayed in a manner that could effectively help to identify patterns and categories according to the research questions. During this process, it was very important to stay focused on the subject of study and not make preliminary conclusions. The strategy is to not make preliminary conclusions, but rather to keep “digging” and analyzing the units of analysis that support your conclusions and the ones that do not. By playing devil’s advocate with respect to rival prepositions, the researcher is able to validate and build stronger statements and eventually solid conclusions. Strong conclusions were based on triangulation of data and cross-case comparison between participants from the same region and from different region.

4.6 Increasing Validity and Reliability

The credibility of the results is a key and very important part of persuading the audience that the results are valid (Lincoln & Guba, 1985). Lincoln and Guba (1985) suggested four questions about research results that are useful regarding credibility and these questions were used during the research process. The first one examines how one can establish confidence about the findings from the respondents in the context in which they were interviewed. The second question asks how one can determine to what extent the results on a particular subject have applicability in other contexts. The third question asks how one can determine whether the findings would be the same if the investigation would take place with the same sample

and context and to what extent the findings are determined by the respondents and the context and not by the biases, motivations, interests or different perspectives of both the respondents and the researcher. Finally, the fourth question asks how one can determine that the findings are actually the experiences and ideas from the informants rather than the preferences and characteristics of the researcher.

These are valid questions and should be taken into account when discussing the results from exploratory research. In response to those questions, this research follows the four terms suggested for Lincoln and Guba (1985) to increase credibility; “internal validity”, “external validity”, “reliability” and “objectivity”. Yin (2003) proposes those same four except he calls objectivity “construct validity” but these two measure the same thing. Construct validity is a more common term for that dimension.

Internal validity looks at the causal effects between two variables. For example if market orientation leads to the discovery of business opportunities and the causal effect in one another. Internal validity is limited to only explanatory studies as opposite to descriptive or exploratory (Yin, 2003). Despite that, Yin (2003) suggests that there are things that can strengthen this dimension in exploratory research. Specifically, Yin (2003) provides two suggestions and explains how in exploratory research the influence of variables is very important. First, in order to have internal validity the researcher has to look for “pattern-matching” between the variables involved. Second, the researcher has to develop a careful explanation-building and time-series analysis.

External validity refers to what extent the findings on the case study can be generalized to other populations and also across other contexts (Yin, 2003; Lincoln & Guba, 1985). The way to improve confidence in this area is to compare findings with other studies that use the same literature to reinforce their own findings, allowing them to be generalized

across contexts and samples. This is due to the way the results are analyzed in a qualitative case study as opposed to quantitative studies which use statistical indicators and significant measures to increase the level of confidence regarding the findings. Lincoln and Guba (1985) posit that reliability leads to confidence in the findings by minimizing the errors and bias. For example, if a third person would have conducted a similar study under the same sample and context, would the findings be the same? The level of detail in documentation of procedures in the case study, as well as the method of analyzing the data is a way to increase reliability (Yin, 2003).

Construct validity corresponds to the correct set of operational measures when collecting the data. This is one of the most problematic subjects when using a case study due to the subjectivity that can be brought in by the researcher (Yin, 2003). In order to have construct validity the research must cover two steps according to Yin, (2003). The first of which includes the careful selection of dimensions aligned to the objectives of the investigation, and second to demonstrate that the selected measures do indeed have an influence on the type of changes selected.

4.7 Chapter Summary

The purpose of this chapter was to explain the methodology used in this research. It described the sample selection, the interview procedure, the qualitative tools used during the process of collecting data. In addition, the chapter not only indicates the approach and strategies used to analyze the data but also how the credibility of qualitative research can be increased. In the following chapter, the research questions and the findings are discussed. The impact of the propositions from the theoretical framework are explained and differences between the respondents from Mexico and Canada are emphasized.

Chapter 5: Findings

5.1 Introduction

This chapter presents the results from the 23 semi-structured interviews conducted for this study. Fourteen of the interviews took place in Aguascalientes, Mexico, and nine in Saskatchewan, Canada. The findings are divided into two sections. The first section addresses the three research questions introduced in chapter 1. The second section gives a brief description of the theoretical concepts relating to each proposition. Finally, the proposition findings are explained regarding their impact in the process of discovery and exploitation of opportunities.

5.2 Research Question No. 1 •How do farmers become aware of opportunities for improved performance?

Markets and industries are full of information sources, in which producers have many ways to become aware of opportunities to improve performance. The findings reveal two managerial styles that focus on either within the farm information and outside the farm information to discover and exploit opportunities. Dairy farmers that prefer to focus on the data obtained within the farm carefully track processes and practices to identify areas of opportunity that could be improved and consequently work on them so that they can contribute to better performance. Some examples of innovations can be divided into areas such as control of reproduction cycles, animal health, and compiling analysing information on individual cow production levels (listed innovations see in the Table 2). Mexican producer no. 10 was asked where he gets information from and he said:

“From my own experience by looking at my herd or sometimes by asking people that come here to sell medicine. The most valuable sources...this is going to sound weird but sometimes I communicate better with my cows than with other producers. Because even the promoters just want to sell you stuff. They tell you that some product works so well but it’s a lie they just want to sell.”

Mexican Producer no. 10

Similar to that of Mexican producer no. 10 but in a more extreme way, Mexican producer no. 14 said:

“Nothing would give you more precise information than the cow itself. People come and try to tell me what to do with my cows... They might have graduated from university but they don’t know more than I know about my cows. I know what my cows need, in what amount they should eat, when they are sick and everything.”

Mexican Producer no. 14

On the other hand, there are dairy producers that rely more on market information obtained from outside sources, rather than only looking at the herd. For example, the use of consultants, networking with peers, benchmark and even using financial services to get good prices for feeds.

“I get information from colleagues, consultants, veterinarian, magazines, seminars, universities researches all of these. For example if my neighbors tell me “I did that and it worked out” I do it too, so basically, I try to do and copy everything that works for other dairy farmers that are doing well in the industry.”

Mexican Producer no. 3

Similar approach but from a Canadian producer:

“In magazines as Hoard’s Dairyman, Western Dairy Farmer Magazine, Progressive Dairy Farmer magazine, western dairy seminar yearly, some of the innovation days that Sask Milk puts on usually has a couple of speakers. I also do spend some time looking at things online and talking to other producers.”

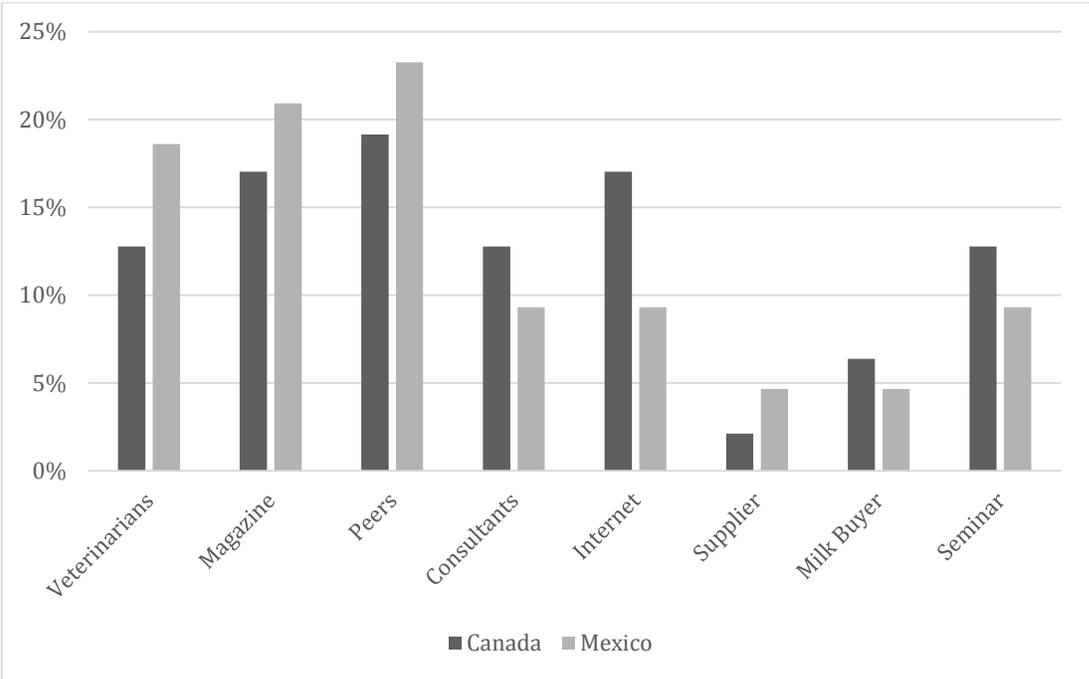
Canadian Producer no. 6

From the last two quotes and across both samples there is a clear connection between how producer identify opportunities and the competitor orientation dimension from market orientation. Several respondents from both countries claim that they often study competitor’s strategies to benchmark and improve their performance. The ones that do not formally study competitor’s strategies still mention they discover changes in the industry through peers, milk buyers, or printed material. The consumer orientation dimension was nonexistent due to the fact that milk producers mostly focus on the buyer which is a milk processor not the final consumer. Producers from both samples do work on improving quality (adding value) of milk from which they have monetary incentives but the communication between buyer and producer is almost non-existent. Therefore market orientation (proposition 3a) was found to have a positive direct impact in the discovery of opportunities in the dairy industry.

In order to determine how farmers become aware of opportunities, the sources of information the respondents relied upon were examined. In particular interest is the sources of information from which the interviewees are utilizing regarding new technologies,

processes, production practices, management styles or any kind of business opportunities with the potential of improving their performance.

Figure 5.1: Sources of Information



As seen in figure 5.1 the most common method to acquire information for farmer in our sample is through other milk producers. This is true in both countries, interacting with other producers is the most common way to gain awareness on what the industry is going through and what other producers in their position are implementing. This is because talking to other producers is a free and fast way to ask very specific questions about technologies and procedures and learn from their experiences. As Mexican producer no. 3 expressed:

“I think that [what] I value the most is to share experiences with colleagues because in this industry there is a lot of experimenting and error so you can extract what works and what doesn’t”

Mexican Producer no. 3

Cattle associations and commercial milk boards play also an important role in the process of making milk producers aware of opportunities. They provide the producers with market information in terms of forages prices, new technology, veterinarians in the region, milk prices and the opportunity to interact with each other.

In Mexico, other ways of gaining awareness of opportunities were governmental flyers, seminars and veterinarians. As opposed to Mexico, Canada has a more diversified use of information flows that includes internet, consultants, farm magazines, nutritionists and seminars.

This research identified memberships in various boards and associations and concluded that networking groups and producer organizations in both industries were limited to cattle associations and commercial milk boards. The cattle associations provides the participants with information and regular meetings where producers interact with each other. In addition to this, the cattle association in Mexico would buy big quantities of farm inputs and sell to the participants as part of a credit line they all share. In Mexico, Gilsa is a producers group, which processes and sell the milk. In order to be part of this organization, milk producers have to buy shares according to their size. The benefits of membership are technical support, information, low input prices, and the assurance that if their quality requirements are met the association will always buy the producer's product at a higher price than they would for a non-member. About half respondents from Mexico reported that they have received information from the Cattle Association or Gilsa that they actually used on the implementation of a processes in their farm. Mexican Producer no. 2 belongs to the cattle

association and also owns shares in Gilsa. He was asked what the benefits were. He responded:

“Well there is a lot of support that you can get through the association or organizations for example, even if you run into problems you can get help from them. Other things are we are recognized by the government so we can speak as regional producer’s voice to the government representatives. And finally marketing aspects as well we have been able to market products through associations and also buy products at lower cost from suppliers.”

Mexican Producer no. 2

On the other hand, all Canadian producers from the sample are part of Sask Milk, which is a producer marketing board from the province, and also part of the Holstein Cattle Association as they all have certified Holstein cattle. All producers in the Canadian sample affirmed to receive constant information from these two different sources.

“The producer organization is Sask milk marketing board as well as Saskatchewan Holstein but I am not involved in peer groups or clubs or manage groups so no. I receive information from the two organizations I am part of even though I am not directly involved. In Sask Milk I’m directly involved with the board so we do a lot of work and support a lot of university research and provide the members with research information in relation to

dairy. So anybody in Sask milk is connected and have access to that information.”

Canadian Producer no. 5

To the question of which networking was used more among milk producers, between vertical (suppliers, transports, buyers or any participant along the supply chain) and horizontal (other producers, peers or any participants at the level of a producer), the most common answer was horizontal networking. Respondents in the two samples network more with each other than any other participants along the supply chain.

“I do use more a horizontal networking than a vertical networking because the buyers only cares about the quality of your product and punish you or gives you awards for your product and peers, colleagues is more fruitful relationship”

Mexican Producer no. 3

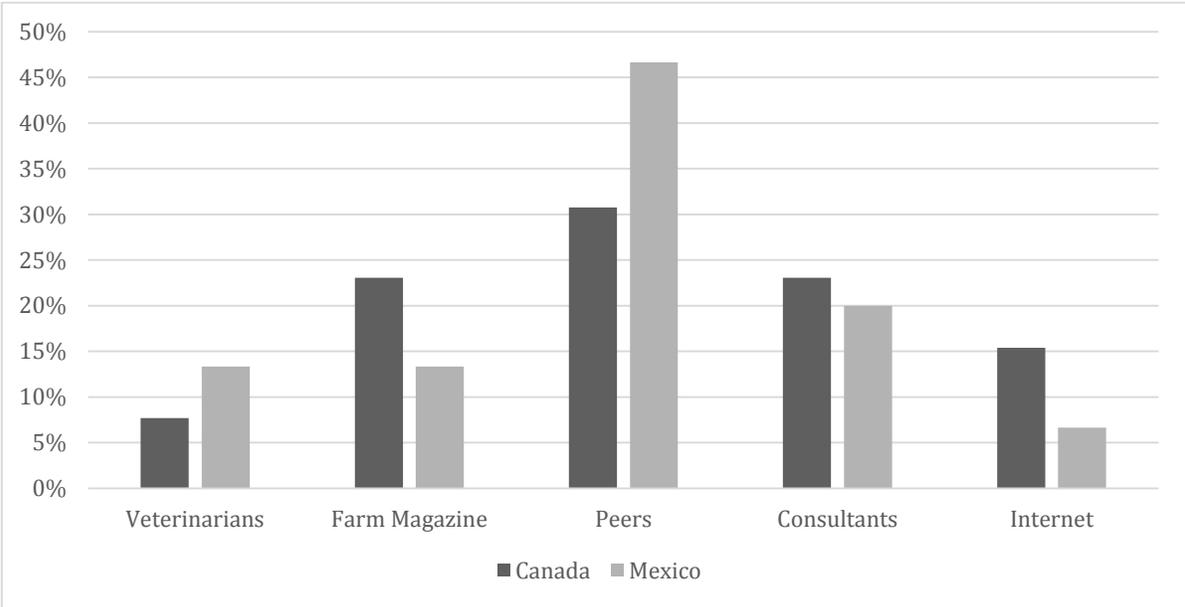
“I don’t usually to talk to suppliers, buyer or transport but to peers and colleagues all the time over coffee, anyone related to the dairy industry we are always talking about challenges and share information and bounce ideas off of each other but not in a formal sense where we have a website to exchange ideas. We use more horizontal than vertical networking.”

Canadian Producer no. 5

In both countries, the communication between the milk producers and the buyer of the milk is almost nonexistent, with the exception of whenever the quality of milk is not meeting the requirement. In this case, the buyer of the milk would contact the producer to let them know about the problem.

In order to narrow down the question and get a more specific answer the information sources the interviewees were asked which source of information was the most valuable for them. This value was determined by the number of times the source was mentioned. The next Figure 5.2 shows the aggregated answer from both countries.

Figure 5.2: Most Valuable Source of Information



As shown in Figure 5.2, Mexican farmers rely greatly on other producers (peers), leaving the interest in other sources very low. This is attributed to the lack of financial resources and education necessary to use the other sources, and also the geographic scenario facilitates networking through other producers because dairy producers in Mexico are very close to each other socially and geographically. In addition, competition between dairy

farmers is very low in Mexico, and all farmers from the sample are willing to help each other, considering themselves more as colleagues rather than competitors.

According to the analysis of the answers from questions 10-11 of the interview guide, it was found that networking between producers is significant to the discovery innovations in the dairy industry (proposition 1a). It was observed that within the two countries, the participants claimed to not see each other as competitors, but as colleagues according to the answer from the question seventeen of the interview guide. As a consequence of producers seeing themselves as colleagues, rather than competitors, sharing information on what works and what doesn't is more common than what might be observed in more competitive markets. In addition, producers stated to have similar goals and as a whole accomplish the objective of providing quality milk to satisfy market needs. On the one hand, the Mexican industry has a deficit of milk so producers believe that they should unify and work towards supplying the domestic demand, consequently diminishing the amount of imported milk. Mexican producer no. 3 describes how there is no rivalry between Mexican competitors but with foreign milk producers that export their production into Mexico.

“Look, we all see each other as colleagues because Mexico as dairy industry only produces 47-48² percent of the milk that's consumed so we don't really have competitions between us, we have rivalry with the Americans that invade our market.”

Mexican Producer no. 3

² The domestic production accounts for 80 % of the demand (SAGARPA 2010)

On the other hand, Canadian producers, under the supply management system envision everyone should do the best job they can as part of a friendly system they all support.

Canadian Producer no. 6 said:

“I don’t see any of my colleagues as direct competitors. I believe in our supply management system in Canada. We all need to work together as colleagues to fill our national demand for milk and milk products in a safe, economical way that is friendly to all consumers. It is our goal as colleagues to do that as best as we I can.”

Canadian Producer no. 6

The friendly competition in both industries is one of the reasons why networking develops quickly between the participants, consequently affecting the recognition and exploitation of opportunities. According to the respondents (questions 10-11 of interview guide), networking through other producers ranked as the most commonly used information flow. This was determined by directly asking participants during the interview process. Through each other, producers not only become aware of opportunities, technology, and new processes, but also how to implement them effectively.

However, in rare situations such as lack of feed supplies, the level of competition increases. Mexican Producer no. 10 was asked how the level of competition in terms of participants and producers was and he said:

“I believe in this area there are a lot of producers and there is enough market for everybody. An exception of the times when there is no forages then we

become competitors right? Because some pay higher prices and other are left out but other than that we are more like colleagues”

Mexican Producer no. 10

Finally, in Mexico the credibility on external sources such as supplier, veterinarians and internet is very low. Dairy farmer do not easily believe what a supplier tells them or what they read in the internet. In addition, not all farmers had interest in or knowledge of Internet usage.

“Internet is good and there is a lot of information but you have to be careful and you have to know where to find the right sources on the web”

Mexican Producer no. 4

“The forage supplier also never lose money. They could send you good quality one time and you can see the difference but the next time is not as good. What they are making is money. They tell you is the same quality but is not.”

Mexican Producer no. 14

The finding from the Mexican industry corroborates Oreszczyn et al., (2010)’s findings in which the author states that trust and credibility are independent variables that significantly impact the interactions between urban entrepreneurs and key participants in their industry.

Farmers in Canada, on the other hand, still choose a combination information sources and remain diversified between farm magazines, peers, and consultants. This is due to the

amount of technology found in Saskatchewan, Canada in comparison to Aguascalientes, Mexico. The sample from Canada showed that everyone is using automatic processes to measure the performance in the milk production from each cow. In contrast, no farms in the sample from Mexico used automatic per cow production control, only per herd (whole farm) production control. In Canada, producers made greater use of consultants and nutritionists, which might be attributed to the sophisticated technologies that require additional knowledge and external resources to help the dairy farmer with multiple matters including information, software, and updates.

“A lot of it is in the mailings we get, Hoard’s Dairymen, what’s the other one? A little from peers, I do employ a fulltime consultant as far as feed management, health, stuff so I get some information from him. He probably pushes me the most. Consultants and also some magazines and literature that I scan through and double check with my consultant. Every 3 weeks he is here unless I call him otherwise. He checks all my operations mostly on animal feed and health wise or calf or cow health or rations, but he also has an interest in facilities, how we manage and stuff”.³

Canadian producer no. 8

The main changes and innovations implemented (C) from Canadian farms and (M) from

³ The name of the consultant agency in the quote for Canadian producer no. 8 on this page was removed for confidentiality.

Mexican farms during this research are listed on the Table 5.1.

Table 5.1. A list of technologies adopted among respondents.

- (C) Milking machine clogs	-(C)Nutrition change and monitoring
- (C) Clostrometer	-(C)Separation of herd by performance
- (M) Milking parlor expansion	-(C)Bedding maker
- (C) Recycle of undigested feed fibers	-(C)Heat detection system
- (C)Pedometers heat/production	-(C)Farm Infrastructure
- (M)Automatic calf feeder	-(M)Use of distillery waste in the diet
- (M)Increase no. of milking sessions-	-(M)Lower cost of feed, change
fertilizer	
- (M)Implementation of protocols	-(M)Shades and free stalls
- (M)New energy bio-digester parlor	-(M)Automatic cattle herder
- (M)Pasteurizer of colostrum	-(M)Cooling system chiller and tower
- (M)Sexed Semen	-(M)Water and Irritation systems
- (M)Protocol to identify mastitis	-(M)Automatic stirrer cart for feed
ratios	

The processes of implementation from one innovation to another differ significantly. For example, the way a Mexican producer implements the usage of sexed semen may differ in a great way from how a Mexican producer implements a new energy bio-digester parlor. The implementation of the sexed semen may only need training, the tools and the product as oppose to the other technologies that would require technicians, testing, previous planning and design. Within the Canadian sample, because they have higher technologies, the usage of outsourcing was greater than in the Mexican sample. In some cases, the Mexican producers were still innovating in a lower level, but were more directly involved (hands on).

In terms of the human capital (proposition 2a) it was not found enough evidence to support that human capital/prior knowledge has a direct impact on the discovery of opportunities. The analysis from the Canadian producers shows that experience does not directly affect the discovery of opportunities. Most of the respondents share the same level

of education (grade 12) and they all have different levels of experience going from 3 years to 35 years. All the Canadian producers seem to be aware of the same opportunities, despite the fact that some implement the innovations and others do not. This difference is more the result of the risk aversion of the dairy farmer rather than the level of awareness.

Table 5.2: Experience and education from the Canadian sample.

Experience	Number of Farmers	Education	Number of Farmers
1-10 years	1	12 years	5
11-20 years	3	13-14 years	3
21-30 years	5	16 years	1

In Mexico, education show to has a direct impact with the amount of opportunities a milk producer becomes aware of. The Mexican farmers with more education showed to be less individualistic and to use more market tools than the farmers with less education.

Table 5.3: Experience and age from the Mexican sample.

Experience	Number of Farmers	Education	Number of Framers
6-10 years	2	1-5 years	1
11-20 years	5	6 years	7
21-30 years	2	12 years	3
31-45 years	5	16 years	2

The usage of outsourcing to acquire information, technologies, or help to improve processes was identified to be higher with people with grade twelve education and above. For example, Mexican producer no. 1 has 27 years of experience and high school education discussed his approach to innovation.

“I don’t approach innovation that often I’m more traditional than anything else”

Mexican Producer no. 1

As opposed to Mexican producer no.1, the producer no. 3 with a university degree and 15 years of experience expressed the following:

“We do approach the innovation as limited as our financial resources allow us.”

Mexican Producer no. 3

In Mexico, the usage of consultants was limited to people with higher education levels and more sophisticated farm management characteristics. In other words, the farmers with 12 or more years of education from the Mexican sample were the only ones that claimed to be using consultants, extracting information from them and getting help from them to implement innovations. Farm size wasn’t linked to the usage of consultant. Across different sizes from small (40 cows) farms to big (180+) farms high level education from our sample was linked to the usage of consultants.

In terms of entrepreneurship it was found that it plays an important role in the process

of discovery of opportunities (proposition 4a). Entrepreneurship involves multiple activities that vary depending on the nature of the industry and the organization and generally includes managerial styles oriented to innovation, risk-taking and proactive behavior (Nasution et al., 2011). The proactive behavior is the one that plays a big role. The initiative of managers to have an opportunity-seeking, forward-looking perspective is going to greatly affect the performance of a dairy farm. The Canadian dairy industry, when it comes to technology and sophisticated processes, is very homogenous in general.

On the contrary, in the Mexican industry the difference in performance between a dairy farm with higher level of entrepreneurial orientation and one with low level is greater. For example, for someone that believes in, and is one of the first ones to implement an innovation, the way they approach innovation is by being alert by searching and collecting more information than their competitors. As a result, their view of their overall performance was this:

“My overall performance for us it has been really good, for example we grow 100% I mean we double the number of heads on production in 4 years and that shows very good results and maybe not everything that we try works as we want to but we keep trying different things and the results are there. Yes I’m satisfied, I think we could do better but I’m satisfied”

-Mexican Producer no. 4

The ones that claim to have a traditional approach as oppose to innovative also reflect lower overall performance and had experience decreasing herd size, and consequently a low level of satisfaction. For example, Mexican producer no. 1 has been decreasing in size and

he claims to not be innovative but more traditional. Mexican producer no. 1 was asked if he was satisfied with his results, and he said:

“No, I’m not satisfy, I want to do better”

-Mexican Producer no. 1

After that, he was asked if his expectations in terms of investment and return were meet to what he said:

“Not really, I’m half satisfied with my expectations”

-Mexican Producer no. 1

Therefore, it can be concluded that innovativeness as a part of entrepreneurial orientation does have an impact on the discovery of opportunities and dairy farm satisfaction as a result of their performance.

5.3 Research Question No. 2 •What are the key success factors of exploitation of opportunities?

The process milk producers go through from the moment they become aware of an opportunity to the moment it is successfully implemented is complex and could influence the success or failure of the innovation. The process milk producers take to implement an innovation is first determined by the information they hold. For example, the sources from which they receive information, such as a supplier, a magazine or another farmer, are

important in terms of guiding the implementation process. Here, a key success factor of exploitation of opportunities would be the triangulation of information. Triangulation ensures accurate information is used when developing an implementation process in terms of expected performance of innovation, technology, or new process. Canadian producer no. 1 describes a path in which their dairy usually becomes aware of the opportunity and increases the chance of that opportunity being successful once it is installed and working.

“There are two magazines that most of us read. One is Hoard’s Dairyman and the other is Progressive Dairyman. These two magazines discuss all kinds of new ideas, all kinds. Actually all parts of the business they would talk about. So that’s your first exposure to the information generally speaking to the new idea. And from there you will see it at a seminar or conference but mainly and first at a magazine because once is at a seminar it has been researched and tested and they are only reporting the results. So from the magazines then you starting thinking about it, what I mean is you won’t go to the internet without having a remote idea what you are looking for”

Canadian Producer no. 1

This last quote provides a road map of how dairy farmers may become aware of an innovation. Most of the Canadian producers within the sample would always be exposed to the information through a magazine first and then research more about it and talk to either consultants or other producers to see how fruitful would be to implement it. The more proactive behavior a milk producer possesses in terms of search and exposure to information sources, the more information they would acquire and more opportunities to improve performance would be identified. Entrepreneurial orientation proposition 4b was found to

have a direct positive on the exploitation of opportunities. Entrepreneurial oriented firms are characterized by actions that pursue novel and creative solutions for market needs or processes challenges (Lumpkin & Dess, 2001). The pursuit of novel solutions or more effective processes will be combined with proactive behavior, which in fact consists of anticipating and predicting market trends and acting upon the information gathered (Lumpkin & Dess, 1996; 2001). Finally, as with any novel product, process, or technology, risk has to be taken into account from the management team. Entrepreneurs are identified as risk-averse or risk-seeking depending on the level of risk they are willing to take in the implementation of any activity within their organizations (Rauch et al., 2009; Westerlund & Rajala, 2010). The sample interviewed from both countries showed to have different levels of entrepreneurial orientation. The dimensions with entrepreneurial orientation that were taken into account are innovativeness, proactive behavior and risk taking.

Producers in the Mexican sample seem to be more risk averse than farmers in the Canadian sample. The profit margin the Mexican producers have is smaller than the Canadians due to the quota management system (QMS) so this increases the risk aversion towards the implementation of new technologies and processes in Mexico. In Canada interviewees were asked if they consider themselves the first ones to adopt a new technology or process. From that question the sample divided into two groups; the ones that answer “Yes”

“Yeah, close to the top. We’ve been fairly aggressive on our building and some of the ideas that we’ve done, we’ve expanded a lot”

-Canadian Producer no.3

And the ones that said “I like to see it implemented and working in another farm before I think about implementing it”. An example of that is the Canadian producer no. 6 who said:

“No. I typically am not the first to adopt any new technology. I typically like to see technology implemented in a new farm first so I can gather information and use their learning experiences to hopefully stream line my adoption of the technology.”

-Canadian Producer no. 6

What sets those two farmers apart, besides size and age, is mainly a different approach to innovation. Despite that, the Canadian dairy producers seem to be satisfied with their overall performance. They all claim to have good ROI and be satisfied.

“Most of the big farms are probably reasonably consistent as the big farm managers are out there looking at new innovative approaches and options. That’s why they are big like that because they run that. Yes I am satisfied, we are making some big improvements.”

-Canadian Producer no. 4

The farm manager No.4 is one of the most innovative and sophisticated among the sample, based on their up-to-date infrastructure technologies and managerial practices. Now Canadian producer number No.6 takes a benchmark strategy as opposed to an innovation strategy. And his answer is;

“According to annual CanWest DHI reports in comparison to provincial and national benchmarks we are usually in the top third of producers of our size. I am never satisfied with the results and think there are always opportunities to improve.”

-Canadian Producer no. 6

It is clear that the implementation of opportunities is essential to improve performance. The proactive behavior is the one that plays a big role.

Besides entrepreneurial orientation, networking was found to have a direct impact on the exploitation of opportunities (proposition 1b). Using multiple information sources allows dairy farmers the opportunity to triangulate information getting a better idea of the innovation than if they were only use one source or non. In the following quote, Canadian producer no. 1 emphasizes the importance and benefits of using broad network of dairy producers:

“I’m the kind of person that if I have an idea or a problem, I talk to as many people as I can, because somebody somewhere always has the answer, you just don’t know where it is going to come from. So the more people you talk to the more chances you will get the answer to the problem. And that’s why my son in university he says how important is to network”

Canadian Producer no. 1

It was found that Mexican dairy producers in the sample tend to implement more innovations that have the objective of increasing production than those that increase quality. For dairy farmers that do not have acceptable quality and cannot meet the quality

requirements set by the buyers, it is very important to work on that. At the same time, the return on investment is low for dairy farmers that already have stable and acceptable quality as price incentives related to quality are not high enough to stimulate additional investment. It is also important to distinguish the differences in how milk is priced. In Mexico, milk is priced by liters of milk only, while in Canada milk is priced by kilograms of butter fat content. Therefore, in Mexico and Canada producers seek efficiency of production in order to achieve both quality and quantity.

Another key success factor of the exploitation of opportunities rely on the information a farmer possesses and to take action over the information is what allows producers to stay up-dated and implement innovations. In particular, in Mexico most of the produces not only become aware of opportunities through other producers, but also exploit those opportunities using help from the same producers and asking questions about the implementation. Mexican producer no. 14 emphasizes how expanding knowledge and networking is so important.

“In order to make progress you have to expand your knowledge. If there are other ideas it is important to become aware of them. I go to colleagues and ask about nutrition tips or they come and ask me about how I do things.”

Mexican Producer no. 14

Networking is a key success factor to not only become aware of opportunities but also to successfully implement them. In addition, education was also a key success factor due to the information, vision and research abilities education provides about the market. Farmers with less formal education tend to be more traditional and resistant to change, limiting their ability to exploit opportunities and improve efficiency. This lack of proactiveness is

dimension of responsive market orientation. The level of market orientation was found to have a direct positive impact on the exploitation of opportunities (proposition 3b). Another characteristic of market orientation is the development of market intelligence and learning orientation through which the producers use different market tools to create the ability to identify efficient practices. From the respondents, it was clear that those who use more information flows would develop a better market intelligence and more accurate perception of the industry, thus having a better performance. All of the respondents but one agreed on the importance of continually expanding the knowledge of new ideas and technologies in the dairy industry. The reason they provide was that in order to improve in practices of production or implement new products or technologies you have to continually expand your knowledge. For example, Canadian producer no. 7 was asked if he considered important to continually expand his knowledge of new ideas and technologies in the dairy industry and he said:

“It is very important because if you aren’t improving you are going backwards. Technology, if done right, it will increase efficiencies and profits”.

-Canadian Producer no 7.

Another example of education and market intelligence is Mexican producer no. 1 who has high school education and claims to only go to informational meetings (not seminars or workshops) three times a year for a very short time no longer than one hour. When Mexican producer no. 1 was asked how does he approach innovation and new opportunities he say:

“I don’t approach innovation that often I’m more traditional than anything else”

Mexican Producer no. 1

Comparing this to Mexican producer no. 2, who has a university education and attends seminars, workshops, or other continuing education activities for around 20 days a year, one can see a different attitude toward innovation. He said:

“We do approach often innovation but I cannot say we are the first one to implement something new and this is because we are limited financially to the point where we have to choose what to implement”

Mexican producer no. 2

Any education activities could potentially be a key success factor in the exploitation of opportunities (i.e. workshops, seminars or any continuing education activity) because education and information helps farmers become aware of opportunities and offers an idea of how it could improve their performance. Finally, the usage of consultants is also a key success factor of exploitation of opportunities, because farmers that used it are more likely to implement new technologies and processes because their consultants exposed them to the information regarding the innovations and its performance. Only a few of the dairy farmers from the Mexican sample practiced this.

From the sample, it was found that Canada is a more homogenous industry when it comes to exploitation of opportunities. This is because many of the main sources of

information from which the dairy farmer becomes aware of opportunities are being used by most of the sample. Despite that, proactive behavior was one the key success factors of exploitation of opportunities. For example, proactive activities in the search of opportunities through experimentation, teamwork with consultants, university researchers, and attending seminars were the main success factors of exploitation of opportunities. For example, Canadian Producer no. 2 claims to have an increase in number of cows in production of around 40% in the last year. The proactive activities such as a use of consultants, coordination and team work within the farm, which were used as part of farmer`s strategy, allowed him to exploit business opportunities.

“We’ve seen a huge benefit being as collaborative as possible”

Canadian Producer no. 2

When Canadian producer no. 2 was asked if it was important to his farm to continually expand their knowledge of new ideas and technologies in the dairy industry and why he replied:

“Absolutely! Because it’s very easy to isolate yourself and continue to do things the way you’ve always done them because it "works". It’s pretty clear to us that to learn more and more about how to milk cows effectively in Saskatchewan and every year with the new research and other experiences we’re trying to keep that collaboration and network open whether its vertical or horizontal and understanding that you have to be willing to change to learn more and more”

Canadian Producer no. 2

While many of the milk producers in Canada become aware of opportunities through peers, the implementation of the innovation was often through usage of outsourcing. Networks ties with suppliers, dealers, and consultants were more used in the Canadian industry than in the Mexican industry.

“First of all, I hope we are some of the producer to stay on business and here in México people are very individualistic they like doing things by themselves but the way I discover changes is doing the opposite, is by joining associations and organizations and I even believe that the industry will structure itself to the point where big producers will have to combine strengths and create partnerships to be more efficient.”

Mexican Producer no. 2

In terms of human capital and the exploitation of opportunities (proposition 2b) the information and prior knowledge has been shown to be very important when it comes to the exploitation of opportunities (Shane 2000; Ardichvili, Cardozo, and Ray 2003).

According to the analysis, the information which a milk producer holds directly impacts the amount of opportunities a producer becomes aware of and eventually implements. The findings within this sample indicate that farmers with more experience or who are older had a lower willingness to adopt a technology and higher risk aversion, which consequently does not enhance the successful discovery and exploitation of opportunities. The farmers with less experience showed a more proactive approach, which consequently

was linked to the number of opportunities a producer searched for and eventually implemented. This is mainly due to a risk averse attitude farmers acquire with age, farmers from the sample that are older do not want to take big risk or make big investments but they want to preserve wealth before retiring and passing the farm to the next generation. In addition to that, milk producers from Mexico that have more years of experience tend to be more individualistic and do not allow people to help them through the implementation of farm processes and technologies. For example the next two farmers have twelve (Canadian producer no. 3) and fourteen years of experience (Canadian Producer no. 4) and they were asked: Are you generally the first in the area to adopt a new technology or process?

“Yeah, close to the top. We’ve been fairly aggressive on our building and some of the ideas that we’ve done.”

Canadian Producer no. 3

“Generally, Yes! Always looking at improving certain areas. Say the internet is very helpful, but some seminars are good. A certain farmer might do something he’s seen somewhere else. Sometimes we will look at different operations to try to make sure we aren’t missing anything.”

Canadian Producer no. 4

These farmers expressed a willingness to adopt technologies and proactively look to implement innovations. As opposed to this other farmers who has a 34 and 30 years of experience:

“One of the goals I have that shows my age is to transition and pass the farm on to the next generation and you know have them coming and try to do a better job in the future. That’s one of my personal goals. I think what I am finding is the potential on the next generation. My children come forward with new ideas for me to consider even though they are not the owners they are planning to become owners. Additionally to my children’s ideas and innovations some of my employees do bring ideas forward as well.”

Canadian Producer no. 5 with 30 years of experience.

“Nope. In the grain side we have been fairly fast but not on the dairy side. We stick to what we know and how it works in our situation here. We have to be on CQM because we get paid more per liter and at the end of 2015 every farm has to. I am getting more money a little bit for our milk. I think I don’t get paid now next month I start to get paid it is a small amount.”

Canadian Producer no. 9 with 34 years of experience

Hence, there wasn’t enough information to support that human capital has a positive direct impact on the exploitation of opportunities.

5.4 Research Question No. 3 • How do farmers from Aguascalientes and Saskatchewan improve the success rate of implementation of innovations?

Different strategies were identified to improve the success rate of implementation of innovations. On the one hand, Mexican respondents were asked: “who do you talk to through

the implementation process?” Nine out of fourteen answers included colleagues and four out of fourteen answered “only colleagues”. The difference between these two groups is how some of the farmers relied only on colleagues, versus creating a working team that included, but was not limited to consultants, veterinarians, and suppliers. For example, Mexican producer no. 10 bought a cooling system and he replied:

“Colleagues and the promoter that sold it to us”

Mexican Producer no. 10

Other innovations as Mexican producer no. 11 implemented was the use of sexed semen and he replied:

“Colleagues only, like I just heard of it. Something about me is that I don’t like to experiment, I only do it when people have done already and they know is going to work”

Mexican producer no. 11

This was due not only to the financial limitations, but also to risk avoidance, so help through the implementation was also required from those colleagues that had implemented the innovation before. Other, but less common answers included a combination of colleagues and veterinarians. For example, Mexican producer no. 9, who built a new parlor, was asked about the process he went through and who helped him he said:

“First we started visiting other farms we look at what works for them and what didn’t work for them. After that we look for way to implement the parlor as cheap as we could and the faster we could. We got help from Colleagues and Veterinarians”

Mexican producer no. 9

The least common answer was consultants and suppliers. For example, Mexican producer no. 8 who implemented an automatic foreman and he said:

“Consultants from the same brand and those technicians that had implemented other automatic foreman, they helped us.”

Mexican Producer no. 8

On the other hand, Canadian producers take a slightly different strategy in which they usually use suppliers and technicians, consultants, and nutritionists during the implementation. Even though a common way of becoming aware of innovations for both samples is through colleagues, the implementation process for Canadian farmers mainly takes a team approach with both external sources and advice from other producers. For example, a consultant or a supplier would be directly helping with the implementation and would provide the farm managers with specific numbers and instructions to exploit that technology at its best. An example of this is Canadian producer no. 5 that got help from:

“Veterinarians, consultants, researchers, and sometimes peers exchanging ideas.”

Canadian Producer no. 5

Figure 5.3: Where dairy farmers are getting help from during the implementation process.

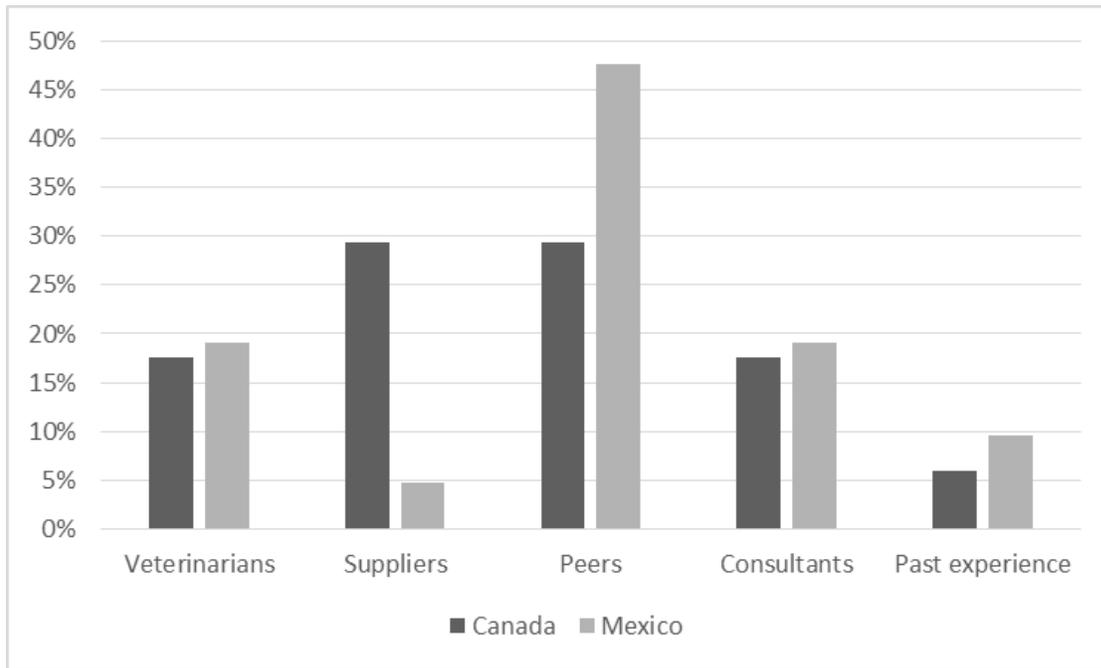


Figure 6.3 shows that along with information, respondents in Mexico mostly get information from peers, including help during the implementation of the change from peers. It also shows a higher use of consultants during the implementation from Mexico than from Canada. This is due to the fact that in Mexican farmers that use consultants rely a lot on them in innovations as oppose to Canada, where consultants helps more with the managerial side and effectiveness no the implementation of innovations. In Saskatchewan, respondents favour suppliers and peers during the implementation process. However, this is only true, to the point where interviewed farmers were talking to other peers only for advice and getting help directly by suppliers. That was expressed from the answers of farmers in the Canadian sample when asked to discuss the process of implementation and who you talked to (question 7-8

of interview guide).Therefore, the suppliers in most of the cases were the ones directly helping during the implementations followed indirectly by other producers.

Despite who the farmer received help from, it was clear that the combination of multiple and specialized help would improve the implementation process. For example, the producer that claimed to be the most satisfied with the innovation results within our sample used a combination of benchmarking (comparing and exchanging ideas with other producers) and consultants. Another example is Canadian producer no. 2, who got help through veterinarians and consultants but also indirectly through peers. Here is his answer to where he got help from:

“Indirectly through peers but veterinarians and consultants are the 2 biggest ones.”

Canadian Producer no. 2

Finally, the use of governmental programs help the producer to build a business plan or written project in which the producers identify more efficient ways to implement the innovation and projected to the government for the project to be approved and financed. A good example of this is Canadian Producer no. 3 that got a lot of help through peers in the beginning, got a loan from the government, and information and material from the supplier.

“A lot of peers when it came to the choice of the parlor. We looked at bedding makers and my brother worked on a couple of different farms so he had experience there. A little bit of government stuff so we got a grant from that committee. Mostly through dealers about different options. Peers is the biggest one.”

5.5 Chapter Summary

This chapter provided answers to the three research questions and the impact of the propositions on the discovery and exploitation of opportunities. In addition, a comparison between the Mexican and the Canadian regions were given in each question and propositions. These results provided specific insights as to how opportunities are being discovered and through what process and which instruments are they being exploited. First, it was discovered that in both industries the most important source of information is peers. Despite that, the Mexican sample relies in a greater way on peers than the Canadian sample, which relied on a wider range of information sources. Second, the key success factors in the implementation of innovations is the triangulation of information. In other words, back up the information acquired with multiple sources as well as network with peers to benchmark innovations other producers had implemented and ask them about their performance. In addition, continuing education activities helps farmers not only become aware of opportunities but also to network, acquire knowledge and obtain a broader perspective on how technologies can help them improve their performance. The third research question showed how the Mexican sample relies on other producers, not only to become aware of opportunities, but also during the implementation of the opportunity. The results show the Canadian sample relies almost equally between peers and suppliers. In terms of the propositions, market orientation, entrepreneurial orientation and networking have a direct impact on the discovery and exploitation of opportunities. Human capital does not have a direct impact on the discovery and exploitation of opportunities mainly due to the decrease in the willingness to take risk and adopt innovations with the increase of experience and age. The following chapter

provides a discussion of the findings, explains the managerial implications and provides valuable recommendations for futures studies.

Chapter 6: Conclusion

6.1 Introduction

Due to the highly turbulent dairy industry in terms of how fast technologies and processes change to improve efficiency, it is of great importance to investigate how dairy farmers approach innovation. This study delivers valuable insights into the dairy industries of Saskatchewan, Canada and Aguascalientes, Mexico. This research aimed to look at the process in which dairy farmers attempted to discover and exploit opportunities to become more innovative. The research was done through in-depth interviews with key participants from both industries and included important theories and managerial practices such as networking, human capital, market orientation and entrepreneurial orientation. By studying the method by which dairy farmers approach innovation, this thesis was able to investigate how firms become aware of opportunities in the dairy industry in Canada and Mexico, and the processes dairy producers take to implement an innovation and exploit opportunities. Finally, this thesis examines which instruments and strategies contribute to the success of innovation within dairy farms.

6.2 Findings and Interpretations

Chapter Five provides answers to each research questions and propositions. The answer to the question ‘how dairy farmers become aware of opportunities?’ reveals that there are different strategies and practices to what dairy farmers believe will give them a competitive advantage. The most important and common way of becoming aware of opportunities was through other dairy producers, which is the effect of continuous practice of the competitor orientation dimension through market orientation and also the practice of networking. Having a broad network of dairy producers represents a key resource in which dairy farmers can use

to become aware of innovations and extract information regarding technologies, processes and management practices that could help them exploit opportunities. Communication and having close relationships with other farmers was found to be a valuable business strategy to stay up-to-date in the dairy industry. In fact, if milk producers are not keeping informed on new technologies and processes, they will eventually get behind due to how fast technologies and process change in the dairy industry. This was concluded based on the network analysis findings and key success factors of exploitation of opportunities expressed by the farmers quoted in the findings chapter.

Research question two asked ‘what are the key success factors of exploitation of opportunities?’, During this research, multiple business opportunities were studied that improve different aspects of the production of milk (i.e. nutrition, animal health, reproduction cycle, recycling of waste, and infrastructure). In addition, different key success factors of exploitation of opportunities were identified and developed by farmers using multiple managerial practices such as networking, triangulation of information, use of consultants and nutritionists, benchmarking and proactive behaviour in the search and implementation of innovations. This question was examined taking multiple variables into account (i.e. education, innovation, experimentation, experience, growth, managerial style, use of networks/consultants, continuing education and as consequence performance). The findings indicate that in the Mexican industry, a key success factor of exploitation of opportunities was to build a broad network of producers, suppliers, and veterinarians. This strategy would help producers not only become aware of opportunities, but also with the implementation of new technologies, processes, and novel products. On the other hand, in the Canadian sample the key success factors of exploitation of opportunities was the effective use of outsourcing (i.e. DHI and dairy farm consultants) to implement what fits their farm needs in an efficient

and profitable way. Many authors have also claimed the existence of a link between networking and innovation across different industries of agribusiness (i.e. Ahuja, 2000; Lambrecht et al., 2013) .

In addition, other key success factors of exploitation of opportunities in both industries are the proactive behavior in the search of opportunities as an antecedent, education, and experimentation. In this question, there is a big difference in what the key success factors are for the Mexican and Canadian producers. On the one hand, the Mexican producer could learn from the Canadian producers how the use of outsourcing helps to exploit opportunities. For example, the use of software for multiple reasons including measuring daily individual cow production allowing the farmer to select a group of highly productive cows. The use of software and collars allow the farmers to identify heat periods and increase the probably of the cows getting pregnant. In addition, outsourcing also help with the implementation of cooling systems to preserve the milk and deliver better quality potentially getting a premium price in the Mexican industry. Lastly, the managerial style in which the Canadian producers proactively look for and discuss information from suppliers or from magazines with consultants and other producers increases the probability of becoming aware and implement innovations. On the other hand, the Canadian industry could learn from the Mexican industry how to reduce the cost of only using expensive consultant agencies and exploit in a better way the vertical and horizontal networks at hand to improve processes and constantly innovate. This factor indicates that there is an innovation gap that could be worked on that goes from experimenting (i.e. nutrition diets) to implementing different administration and managerial procedures (i.e. protocols for reduction of cost) for improve performance.

Research question three investigates ‘How do farmers improve the success rate of implementation of innovations?’ The findings reflect two different strategies, one from the Mexican industry in which dairy farmers improve the success rate of implementation by keeping constant interactions with fellow partners in the industry. The other strategy taken by the Canadian producers includes an outsourcing approach, in which they more likely hired a specialized third party to go through the process of implementation and exploitation. Besides these two strategies, the proceeding observations suggest that the more sources of information farmers use about the innovation, the better. The producers that expressed to be the most successful in the interviews within the sample used a strategy that includes benchmarking and the use of consultants.

In terms of the research propositions, networking is significant within the two samples. While none of the participants from the sample belong to a formal networking group, the role of cattle associations and producer’s organizations were very important because they would provide producers with information and the opportunity to have farmer-to-farmer interaction. The findings indicate that dairy farmers utilize a horizontal networking, in which they interact more with other producers than with suppliers and buyers. Both industries seem to have very little interaction with the buyer of the milk unless problems with quality arise.

To the human capital proposition there was not enough variation to determine the level of significance by the sample from Canada. This was determined by taking into account how proactive in the search of new opportunities dairy farmers were and by the ways farms approach innovation if they do. Those two factors were then compared to variables such as their education, experience, age, number of days they attend continuing education activities such as seminars, expos, and conferences. The findings in the Canadian sample are contrary

to what Shane & Venkataraman (2000) and Shane (2000) claimed about prior information and the discovery and exploitation of opportunities. Surprisingly, there was not enough variation in the data to support that experience impacts positively in the process of discovery and exploitation of opportunities and this is attributed to the risk aversion of farmers. It was found that risk aversion tends to increase with age and experience. Having more experience is not a factor that fosters the amount of opportunities a producer will search for and eventually implement. In other words, despite the experience and prior information dairy farmers hold, they tend to grow faster and implement expansion projects during the early years as dairy farmer to later become less innovative and pass the farm to the next generation. As showed in the findings chapter, in the Mexican industry, the level of education was relevant and it had a direct impact on how innovative a dairy producer would be. There was a set of multiple quotes to compare with different ages and years of experiences under the research question number two and the findings from the human capital dimension.

Market orientation was significant in the dairy industry in the sense that competitor orientation (benchmarking) and interfunctional coordination were key success factors. Additionally, a proactive market orientation and a learning orientation would provide the dairy farmer with a resource to discover and exploit opportunities. The consumer orientation dimension was not a factor because milk producers have almost no communication with the buyer of the milk and neither engaged in modification of product according to consumer demands.

The findings suggest that entrepreneurial orientation was also important to become aware of opportunities and increase the success rate of implementation. The level of competitive aggressiveness was identified to be low in both industries and a friendly competition approach was described from the participants of this study.

6.3 Managerial Implications

This research provide managers within the dairy industries with a detailed explanation of how successful dairy farms approach innovation. There are mainly three managerial implications in terms of management practice that this research provides.

First, this research shows how important it is to be innovative and implement new processes and management practices that are helping other producers to be more efficient and productive. In order to become aware of opportunities, dairy farmers have to use a broad portfolio of information flows. For example, having close relationships with other producers and veterinarians. The objective of building closer relationships with key participants of the dairy industry is to exchange ideas and experiences that increase awareness of opportunities. In addition, subscribing to relevant farm magazines and including year-around help from consultants was found to be some of the most popular ways of becoming aware of innovations.

Second, this research found that information is an important factor not only of the discovery but also the exploitation of opportunities. Risk taking was another key success factor in exploitation of opportunities. Dairy farmers have to be willing to engage in calculated risk ventures in order to improve performance through innovations and management changes. Networking was identified as a key success factor of exploitation of opportunities because it provides managers with the chance to interact with key players in the industry with the potential to help in the implementation of innovations. Some examples are: consultants, other producers, technicians, suppliers, government agencies, cattle associations, and university researchers. The most important key success factor this research found was to practice a proactive behavior in which managers aim to have closer

relationships with suppliers, consultants, and other producers, but also are willing to research and use multiple information flows such as magazines, dairy articles, the internet, along with attending seminars and expos.

Finally, this research provides an answer to the question how dairy farmers increase the success rate of innovations. Managerial practices such as benchmarking and networking strategies had a big impact on the success rate because other farmers had already implemented the innovation. Benchmarking followed by networking was found to improve the probability of success by getting help from other successful producers who implemented similar approaches to innovations. That is due to the fact that getting help through the implementation from a dairy producer that already implemented the technology, process or product decreases the probability of making the same or worse mistakes during the implementation and consequently increasing the probability of success in the process of exploitation of the opportunity. In addition, outsourcing with specialized technicians, consultants and suppliers helps producers to become aware of opportunities and to exploit innovations. A closer relationship with government agencies could provide dairy farmers with loans and also improve the rate of success because when you ask for a loan and to join a governmental program, farmers are forced to build a written project in which make them able to identify the weaknesses and strength of innovations. A further recommendation for both industries due to the importance of networking would be to build a network group in which producers can share experiences and talk about challenges and how they are confronting those challenges. Neither of the industries have this despite the fact that participants from both industries claim that networking provides a valuable resource and helps producer discover and exploit opportunities. As oppose to a face-to-face networking, one Canadian producer mentioned that he has been benefiting from a dairy producer's forum

online where he could express his ideas and help other producers through processes he already has been through sharing some expertise and gaining important insights.

6.4 Policy Implications

Regarding policy implications Mexican producers claim that the governmental programs from SAGARPA were “desk” designed as oppose designed it according to the producers’ needs. One dairy producer from Mexico expressed their concerns about the governmental program during the interviews and three main issues were raised. First, the money that SAGARPA provide to the dairy farmers that have been accepted on to the program is provided to them after the implementation of the innovation or technology which even though they know they will received the money they have to get it from other sources (informal sources, friends or family) in order to implement it. Second, producers complain about how there is not enough help for everyone and the process takes way more time than it should (extreme bureaucracy) which adds uncertainty to the farm operations. In fact, Mexican producer no. 3 claims that government provides financial help out of time.

“Look, for example the financial help I got it on October, but I didn’t need it on October I needed on seeding season, or right now that the seeds are really cheap we could pre-buy from now. My point is the financial help have to be opportunistic not whenever they want.”

Mexican Producer no. 3

Finally, one the issues that came out when talking about the governmental programs was the subject of promotion. Dairy producers would become aware of governmental programs either

too late or not at all. The ones that knew about the programs were the ones that either used it before or approach the offices of SAGARPA constantly to ask for information. SAGARPA should use multiple channels of information apart from the internet. For example, SAGARPA should also include radio and television advertising, while also reaching out to urban communities with flyers and printed material in order to accomplish a broader diffusion of governmental programs and the benefits of using them.

In Canada, dairy producers claim to have good governmental programs for the dairy industry, for example Growing Forward I and Growing Forward II. Despite the fact that dairy producers rely more on the government to maintain support through the supply management system than providing help through other programs, producers agreed that the Growing Forward programs have been helping as well. The Growing Forward programs provide financial help to leverage technologies and infrastructure that helps producers operate in a more efficient way. On other hand, there are still producers who mention that the programs could meet the industry needs in a better way. For example, Canadian producer no. 6 expressed how the programs are good but an important issue that should be addressed is the continuity of programs and the direct involvement of the government representatives in charge of the program with dairy producers. He said:

“The biggest improvement could be continuity with the same government offices handling one program to the next. It also could be improved by the decision makers in Regina not being stuck behind a desk all the time. If they could actually get out to the field and have a greater understanding of agriculture”

Canadian Producer no. 6

6.5 Limitations

One limitation of the study is that the results are somewhat specific as the research is being implemented exclusively on the dairy industries of Aguascalientes, Mexico and Saskatchewan, Canada. While a qualitative approach does not aim to produce generalizable results based on statistical sampling, casual relationships were built and carefully explained through pattern matching, as suggested by Yin (2003). Other than statistical sampling, this research chose to collect exploratory in-depth information on the process of discovery of opportunities in order to produce an analytical generalization regarding the process of discovery and exploitation of opportunities and theories around it. This research provides enough information to build assumptions about other industries under the similar circumstances. Finally, through qualitative approaches, there is a level of bias and subjective interpretation from the researcher. In order to generalize further, statistical sampling should be implemented in other regions.

6.6 Recommendations for Future Studies

This research provides in-depth information on influential factors in the process of discovery and exploitation of opportunities in the dairy industry. Further research should investigate the factors of successful recognition and exploitation of opportunities identified in this research but in a bigger sample in order to obtain generalizability based on statistical sampling and build causal relationships not based on propositions but hypotheses.

Second, a deeper investigation should be implemented on the relationship farmers have with individuals, veterinarians and consultants to discover which are the most profitable

relationships, and in which way those relationships contribute to entrepreneurial and market orientation.

Third, this research thesis investigates which factors influence the discovery of opportunities and what dairy farmers do to become more innovative in order to improve performance. This raises a question of whether innovative farms are more profitable than traditional farms. In terms of the high cost of technologies and financial interest in loans, an interesting economic approach to see which technologies have the highest return on investment, and is there a certain size in which farmers are forced to implement those technologies? During the research, highly technological farms and traditional farms were interviewed and some traditional farms claimed to have high income in comparison to others partly due to the fact that they didn't have any debt because they did not buy any technology.

Finally, how do psychological factors, such as motivation, affect the degree to which an entrepreneur is engaged in the discovery and exploitation of opportunities? For example, in Saskatchewan with the use of the quota system, milk producers may be less motivated to grow and expand⁴. While in Mexico, producers are allowed to grow as big as they want and there are price incentives to increase volume. In addition, the accessibility to financial resources could also influence the degree to which milk producers proactively look for business opportunities and innovate. Easier access to low interest loans should allow dairy farms to implement more innovations and make use of more resources.

⁴ Plus they are limited to only own 4% of the provincial quota

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Appendixes

Appendix A:

Questionnaire Guide

1. Describe your farm characteristics:
 - a. Number of head
 - i. Level of production
 - ii. How do you keep track of production?
 - b. How many employees
 - i. Full-time
 - ii. Seasonal
 - c. How many hours employees work per week
 - d. Manager's Years of experience
 - e. Describe the level of rate of growth in your farm from last year.
 - f. Where do you see your farm in 5 years?
 - i. Same size
 - ii. Increased size
 - iii. Decreased size
 - iv. No longer farming in 5 years

2. Tell me about your marketing processes
 - a. Who do you sell your production to
 - i. Industrial
 - ii. Industrial - -Cheese

- iii. Direct to consumer
 - iv. Distributors
 - b. How is price determined?
- 3. Describe the human capital of the Farm
 - a. Is the manager the owner?
 - b. Education level
 - c. How many hours per week do you spend managing/operating the farm?
 - d. How many days per year do you spend attending seminars, workshops, or other continuing education activities?
- 4. What alliances or other organizations are you a member of?
- 5. Tell me about a recent important innovation or change within your farm
 - a. What was the goal of the innovation?
 - i. Improve productivity
 - ii. Improve quality
 - b. How involved was the buyer of your milk in the innovation process?
 - c. Where do you find information on new processes or technologies that may be useful on your dairy farm?
 - i. Peers
 - ii. Consultants
 - iii. Veterinarians
 - iv. Farm magazines/Newspapers

- v. Internet
 - vi. Meetings/Seminars
 - vii. Extension personnel
 - viii. University researchers
- d. How long did it take you to fully understand the innovation?
6. What motivates you to act upon the information you have gathered and try something new or different?
7. Discuss the implementation of the change/innovation
- a. What went well
 - b. What could have been improved
 - c. Did you develop a formal implementation plan?
 - d. How did you work through the process
 - e. Who did you talk to about the innovation when you were implementing it?
 - i. Peers/Other farmers
 - ii. Government
 - iii. Consultants
 - iv. Researchers
 - v. Veterinarians
8. Describe the overall performance of the implementation
- a. Was it what you expected
 - b. Were you satisfied with the results

9. Are you aware of the government programs and financial support Government provides? Which programs have you use lately? And Why?

- a. Are you using other governmental program, which.
- b. What is this program missing
- c. How could this program be improved
- d. Are there programs that do not yet exist that would have been helpful
 - i. What would those programs include

10. Do you belong to any:

- a. Networks (peers)
- b. Producer organizations
- c. Tell me about your networking activities
- d. What benefits do you receive from belonging to these organizations?
 - i. How much information is shared between participants?
 - ii. How has your farm used this information in the past?

11. How do you acquire information that you use in your farm?

- a. What sources are most valuable to you?
- b. How often you use vertical networking (suppliers, buyers, transports etc)
- c. How often do you use horizontal networking (peers, colleagues etc)

12. Can you please describe your managerial style

- a. How do you identify opportunities

- b. How do you improve on your ability to identify problems
- c. What is your approach to problem solving
- d. Is it important to your farm to continually expand your knowledge of new ideas and technologies in the dairy industry?
 - i. Why or why not?
- e. How do you create relationships with other producers, colleagues etc.
 - i. In what way are these relationships valuable?

13. Explain how do you discover changes in the dairy industry?

- a. How do you respond to these changes

14. How often do you compare and study competitor's strategies?

- a. What measures do you compare?
 - i. Why these measures?
- b. Do you employ people who have worked on other dairy farms?
 - i. Are employees encouraged to suggest ideas about what worked on other farms?

15. Explain your view on the following goals.

- a. Improve productivity
- b. Improve quality
 - i. How important are they to your farm's success?
 - ii. What other goals do you feel are important to your farm's success?

16. How does your farm approach innovation?

- a. Are you generally the first in the area to adopt a new technology or process?

17. Describe your managerial style towards competitors

- a. Do you view other dairy producers in your area as competitors?
- b. In what areas do you see them as direct competitors?
- c. In what areas do you see them not as direct competitors?
- d. Describe the level of competition in terms of participants/producers

18. How have technological changes affected your industry?

19. Describe your overall performance in comparison to other dairy farms

- a. Are you satisfied with the results
- b. Expectations were met in terms of investment and return
- c. Do you get a higher price for your product

20. Is there any area of research that would improve your ability to succeed as a dairy farmer?

Appendix B:



UNIVERSITY OF
SASKATCHEWAN

College of Agriculture &
Bioresources

Department of Bioresource
Policy, Business & Economics (PBE)

51 Campus Drive Saskatoon SK S7N 5A8
Canada Telephone: (306) 966-4008
Facsimile: (306) 966-8413

Project Title: An Assessment of the Effects of Market Orientation and Entrepreneurial Orientation on Farm Performance

Researcher(s): Eric Micheels
Assistant Professor
Department of Bioresource Policy, Business & Economics

Eduardo Pina
Graduate Student
Department of Bioresource Policy, Business & Economics

Supervisor: Eric Micheels
Assistant Professor
Department of Bioresource Policy, Business & Economics
eric.micheels@usask.ca
(306) 966-8411

Purpose(s) and Objective(s) of the Research:

- The objective of the proposed study is to examine how a market orientation and entrepreneurial orientation affects farm performance within the livestock industry in Saskatchewan and Mexico. More specifically, we want to understand how producers acquire and exploit opportunities to become more innovative in their livestock operation. Additionally, we hope to shed more light on how innovative firms are able to outperform their rivals. Specifically, we are interested in examining if market oriented and entrepreneurial firms are more likely to utilize 1) strategic planning, 2) business planning and 3) external sources of information such as networks and consultants in the search for and exploitation of profit opportunities. The results of this research will be used in a Master's Thesis at the University of Saskatchewan and may be used to develop one or more research papers for academic journals.

Procedures:

A member of the research team will interview participants in order to solicit information regarding the manner by which they become aware of opportunities to innovate. The interview will be semi-structured, meaning the interviewer may ask follow up questions in order to gain a better understanding of the answer. Responses will be recorded to ensure accuracy and will be transcribed later. Participants may request that the recording device

be turned off at any time during the interview. We expect that the interview will last between 60 and 90 minutes.

Please feel free to ask any questions regarding the procedures and goals of the study or your role.

Funded by: *Alliance for Food and Bioproducts Innovation*

Potential Risks:

- There are no known or anticipated risks to you by participating in this research.

Potential Benefits:

The results of this research project will benefit agricultural producers who are looking to navigate uncertain and turbulent markets. This research will help producers and researchers to understand better how firms are able to identify and exploit innovative opportunities to create value and develop lasting relationships with downstream partners.

Confidentiality:

- Responses by producers will not be anonymous, but they will be confidential.
- Following audio recording of interview, data will be transcribed to allow for further analysis. Following transcription and any accuracy checks, any material that links respondents to responses will be deleted.
- Although the data from this research project will be published and presented at conferences, the data will be reported in aggregate form so that it will not be possible to identify individuals.

Right to Withdraw:

- Your participation is voluntary and you can answer only those questions that you are comfortable with. You may withdraw from the research project for any reason, at any time until data has been pooled and any links between participants and their answers have been destroyed. .
- Should you wish to withdraw before data has been pooled and links between participants and their answers have been destroyed, please notify any member of the research team and your data will be deleted.

Follow up:

- After your interview, and prior to the data being included in the final report, you will be given the opportunity to review the transcript of your interview and to add, alter, or delete any information included in the transcripts as you see fit.
- To obtain results from the study, please contact any member of the research team and a summary of the results will be mailed to you.

Questions or Concerns:

- Contact the researcher(s) using the information at the top of page 1;
- This research project has been approved on ethical grounds by the University of Saskatchewan Research Ethics Board. Any questions regarding your rights as a participant may be addressed to that committee through the Research Ethics Office ethics.office@usask.ca (306) 966-2975. Out of town participants may call toll free (888) 966-2975.

Consent:

ORAL CONSENT

Oral Consent: If on the other hand the consent has been obtained orally, this should be recorded. For example, the Consent Form dated, and signed by the researcher(s) indicating that “I read and explained this Consent Form to the participant before receiving the participant’s consent, and the participant had knowledge of its contents and appeared to understand it.” In addition, consent may be audio or videotaped.

Name of Participant

Researcher’s Signature

Date