

# **The Discovery and Exploitation of Opportunities in the Dairy Industry**

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## **Abstract**

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. Data is collected through qualitative tools, including a semi-structured questionnaire through in-depth interviews of dairy producers from Saskatchewan, Canada and Aguascalientes, Mexico. Such data collection provides this research with specific insights as to how opportunities are discovered and through what process. It also indicates which managerial practices moderate the successful discovery and exploitation of business opportunities in the dairy industry.

Key words:

Processes, discovery of opportunities, innovative, managerial practices.

## Introduction

Government, scholars and entrepreneurs are quite interested on the current situation of the dairy industry, which has undergone significant changes in terms of innovation and management's practices. Despite the big policy difference between dairy industries from Canada and Mexico, both industries had been experiencing changes in processes, technology and management variables that are key factors 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 will look at what strategies farmers are using to successfully implement these innovations. An important factor that could affect the performance of a firm is the degree at which the firm is able to become aware of and exploit innovations that help bridge productivity and opportunity gaps.

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 productive than others and how this is allowing some dairy producers to be more profitable.

The dairy industry in Mexico has been affected by international markets through the North American Free Trade Agreement (NAFTA). Mexico is 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; as opposed to Canadian dairy industry, the Mexican has fewer government intervention.

The existence of multiple economic units with freedom of production constitutes the Mexican industry. The economic units in charge of the production of milk in Mexico are heterogeneous and they differentiate themselves by regions, technology, infrastructure, weather, 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 as beef production depending on their needs and what is more convenient for them. The medium group is called "family system" and they are characterized for the production of milk and dairy products exclusively. Finally the "specialized systems" are farms with high technologies that specialize on the production of milk in industrial amounts and are also characterized by for having a better price and more bargaining power to deal with milk processors.

On the other hand the Canadian dairy industry is highly regulated by the government, which uses a system of market sharing quotas (MSQ) to match the demand and 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 a price using three different tools. The first is one is the market sharing quotas, which the government uses to regulate the domestically produce supply of milk. The second is an import quota (barrier) in which dairy products and fluid milk are assessed with high import tariff-rates. This includes also the 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 costs of production, labor and investments, and market indicators (IDFA 2010).

In the business marketing literature, has been suggested that market oriented firms are more efficient and effective at discovering opportunities to add value and innovate (Narver and Slater 1990). 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 the “how” firms implement the results of market orientation process. The question to be answered would be under what circumstances market orientation is correlated to performance and what makes an innovation successful.

The judgment and the exploitation of those opportunities would play an essential role in the correlation between identifying ideas and innovations from market oriented practices and their performance (Klein 2008). In the entrepreneurial orientation literature is suggested that entrepreneurial alertness enables managers to identify and create opportunities that may have a great impact on performance (Ardichvili, Cardozo, and Ray 2003; Lumpkin and Dess 1996; Tang, Kacmar, and 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 with a passive responsive attitude towards the market. 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?

The results provide much needed insight as to the innovation process among agricultural firms including a comparison of strategies that are undertaken by the dairy producers in two geographical and economically different locations. Specific insights as to how opportunities are being discovered and through what process and which instruments are they being exploited may enable farms and agribusiness in other locations improve the success of their own innovative activities.

The research paper thus sets out to answer the following research questions:

- How do farmers become aware of opportunities for improved performance?
- What are the key success factors of exploitation of opportunities?
- How do farmers improve the success rate of implementation of innovations?

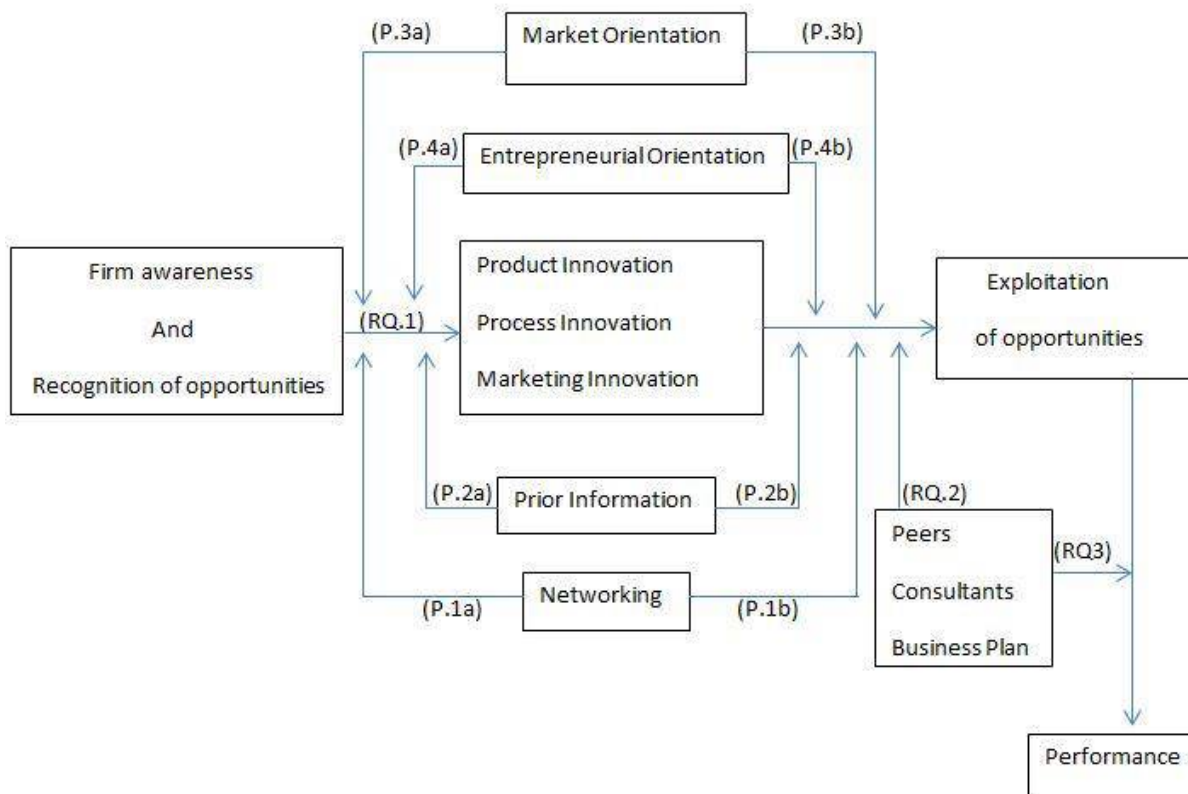
## **Conceptual Framework**

This section describes the theoretical framework of the study, which builds off to the work of Shane (2000). The purpose is to examine how dairy producers involved in the process of opportunity discovery exploit those opportunities, and what moderates the rate success. Theories about opportunity discovery involve not only entrepreneurship theory but also topics such as market orientation, prior knowledge, and networks.

Unlike a perfect market where all the 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 of Shane (2000) and Shane & Venkataraman (2000), 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 and Venkataraman 2000; Shane 2000; Venkataraman 1997).

Figure 1 depicts the discovery of opportunities and the process of the exploitation and the variables that are proposed to moderate both discovery and exploitation. This is an adapted version of (Shane 2000).



**Figure 1.** Conceptual Model (adapted from Shane, 2000)

### *Networking*

The ability to identify a business opportunity depends on the amount and accuracy of information an entrepreneur holds. Authors like Carolis and Sapiro (2006); Shane and Venkataraman (2000) and Shane (2000) stress the importance of exploring why some people discover and exploit opportunities in comparison to others. These authors suggest that networking would contribute and facilitate the transfer of knowledge and information regarding the understanding of processes and technologies within industry members.

A study by Lambrecht, Taragola, Kuhne, Crivits, & Gellynck, (2013), reported that networks are advantageous tools that help members to learn. They conclude that in order to improve performance producers associate and work with research institutes, but also with colleagues and suppliers to obtain ideas about innovations (Lambrecht et al. 2013). Empirical findings like the ones from Westerlund & Rajala (2010) support 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 outsource for the implementation process. Therefore we 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 better implementation and rate of success.

### *Prior Information*

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

The theoretical model Ardichvili et al. (2003) built also suggests that prior knowledge triggers business opportunity discovery and implementation. Ardichvili et al. (2003) identified three different dimensions (personal traits, social networks, and prior knowledge) that combined contribute to entrepreneurial alertness, consequently triggering the discovery of business opportunity. In addition, the information the entrepreneur possesses about the markets and the ways to satisfy the customers will have a significant impact on the discovery and exploitation of opportunities (Ardichvili, Cardozo, and Ray 2003). Therefore we formally propose:

Proposition 2a: Prior knowledge is positively correlated with the discovery of opportunities and innovations.

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

### *Market Orientation*

The ability to create a superior value for customers would be influenced by the level of market orientation (Narver and Slater 1990). Also, the ability of entrepreneurs to learn faster than their competitors will give the producer a competitive advantage (Slater and Narver 1995). Market orientation in general is the culture that promotes the delivery of better products to the customers. In order to add value to the products, producers have to deploy resources to scan the markets to identify how they change and what consumers demand. The intelligence created by the constant acquiring and dissemination of information may be an asset to the firm (Kohli and Jaworski 1990).

A definition from Kohli & Jaworski (1990) is that market oriented firms would develop actions in which the organization acquires information and monitors the market to discover not only the consumer's current and future needs but also monitoring competitors and their strategies.

From this point, two managerial styles are drawn the responsive market orientation and the proactive market orientation. On the one hand in a proactive market orientation the discovery of opportunities may have a more innovative approach in which the producer would combine resources and information to add value through new process, products and marketing channels. On the other hand a responsive market orientation would look for what is already in the market and imitate and implement what has already been shown to improve business. Examples of this are new technology, or other innovation and processes that are new to the firm but not necessarily new to the industry. Therefore we formally propose:

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

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

### *Entrepreneurial Orientation*

The managerial style taken by an organization will have significant impact on the strategies implemented, which opportunities are discovered, and how they create value for customers (Lumpkin and Dess 2001). Managerial style will also dictate the level of competitive aggressiveness they deploy in their interactions with market competitors. It is of high importance to examine the organizational and strategic process of the firms to figure how the values and strategies are impacting the discovery and exploitation of opportunities (Lumpkin and 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, being willing to seize new product-market opportunities, and a predisposition towards taking risks with a proactive innovative approach (Lumpkin and Dess 1996; Miller 1983; Wiklund and Shepherd 2003).

Miller (1983) significantly contributed to the literature of Entrepreneurial Orientation, in which he developed a structural dimension of three components; engagement of risky business opportunities, proactive actions towards goals, and innovative product marketing. Following this study, Lumpkin & Dess (1996) incorporate two more dimensions, autonomy from the individual perspective of the managers and the managerial style of competitive aggressiveness. This research will mainly focus on 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 and Dess 2001). Entrepreneurial-oriented firms would possess a managerial style that promotes innovative processes as well as incremental innovations on market products, as referred from Covin & Slevin (1989).

The constant implementation of proactive behavior not only should predict future trends but also experiment with the market to drive new innovations and create needs and demands from new products as Lumpkin & Dess (2001) mentions in his definition of proactiveness: "Proactiveness is 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" (Lumpkin & Dess, 2001 p. 431).

Lumpkin and Dess (1996) added the dimension of competitive aggressiveness to the work of Miller (1983), that concept was also supported in earlier literature by Porter (1985). Competitive aggressiveness embraces the actions implemented by participants competing for market opportunities. Lumpkin & Dess (2001) describe it as “The intensity of a firm’s efforts to outperform industry rivals, characterized by a combative posture and a forceful response to competitor’s actions”. Therefore we formally propose:

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

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

## **Methodology**

Our aim is to gain a deeper understanding of the discovery and exploitation of opportunities in the dairy industry between Canada and Mexico. In order to answer the research questions, this research uses a positivism paradigm that takes an exploratory approach using qualitative tools, including a semi-structured questionnaire guide to facilitate in-depth interviews with dairy producers.

The most important thing when choosing a methodological strategy is to look at your research questions (Yin 2003). In this case the research questions are “what”, “how” and “why”. Yin (2003) suggest that to the question “what” an exploratory approach using any strategy would be useful. But then the same author goes further and argues that for the “how” and “why” a case study approach would be the most appropriate methodology for the research.

In this study, the validity and reliability were increased by triangulation of data from different units of analysis. The analysis included with-case, cross-case and pattern-matching procedures to develop a complete analysis. In addition to that procedure an objective comparison with the theoretical propositions helped to enhance internal and external validity.

We interview fourteen dairy producers from Aguascalientes, Mexico and nine producers from Saskatchewan, Canada. The interviews were semi-structured and lasted approximately one hour. The use of study protocol was used to guide the interviewer through the multi-case study and to increase the reliability of the research. The interviews were recorded and transcribed to facilitate its codification and analysis. This approach was used because the corroboration of information through the use of archival records is very important to increase data validation (Yin, 2003).

The interviewees were explained the objectives of the research, the ethical considerations and the confidentiality of the information that was going to be extracted to then were asked to sign an agreement consent form that explained in detail how their information was going to be used.

The criteria for sample selection were to be a dairy farm within the geographical areas of the study and to have implemented an innovation in the past 3 years. The size of the samples was a natural exclusion due to small dairy farms rarely implement innovation and especially in Aguascalientes the sizes of the dairy farms varied from medium to large (60 heads above).



The analysis was done with the usage of a software package, Nvivo 10. This software aided in the analysis of qualitative data and suited the need perfectly to analyze the twenty three interviews. The analysis was developed according to the suggestions of Miles & Huberman (1994) in which three main processes have to be taken in to account; 1) reducing data, 2) displaying data and finally 3) drawing and verifying conclusions.

## **Findings**

### *RQ1 • How do farmers become aware of opportunities for improved performance?*

The markets and industries are full of information sources, in which producers have many ways to become aware of opportunities to improve performance. Some prefer to focus on the data obtained within the farm increasing and implementing more meticulous way of tracking processes and practices in order to identify opportunity areas that could be improved and consequently contribute to a better performance. Instead others focus on market information obtained from outside sources, for example the use of consultants and financial services.

The most common way milk producers acquire information is through other milk producers. This is true for both industries, interacting with other producers is the most common way to gain awareness on what the industry is going through and what other producers in your position are implementing.

In Mexico, other ways of gaining awareness of opportunities were governmental flyers, seminars and veterinarians. As opposed to Mexico, Canada had a broader information flows that includes internet, consultants, farm magazines, nutritionists and university researchers.

Cattle associations and commercial milk boards play an important role in the process of making milk producers become aware of opportunities. They provide the producers with information and the opportunity to interact with each other.

### *RQ2 • What are the key success factors of exploitation of opportunities?*

The process milk producers have to go through from the moment they become aware of opportunities to the moment it is successfully implemented is complex and it could influence the success or fail of the innovation. The process milk producers take to implement an innovation was first determined by the information they hold. The more proactive behavior a milk producer shows the more information would acquire and more opportunities to improve performance would be identified.

During this research multiple opportunities were studied and the different key success factors of exploitation of opportunities were identified. The innovations that increase production would come first followed by the ones that increase quality. Quality is very important for dairy farmers that do not already have acceptable quality or that their levels of quality have been fluctuating. This is due to the production of milk is paid by liters of milk in Mexico as opposed to Canada where it is paid by butter fat content in the milk making producers to seek efficiency of production in a greater way.

In Mexico, most of the producers become aware of opportunities through other producers followed by getting help from them and being able to ask questions about the implementation.

In Mexico, networking is a key success factor to not only become aware of an opportunities but also to successfully implement it. In addition, education was also a key success factor due to the information, vision and research abilities education provides about the market. The less educated people tend to be more traditional and be afraid of change, limiting their ability to exploit opportunities and improve efficiency. Any education activity would be a key success factor of exploitation of opportunities (i.e. workshops, seminars or any continuing education activity). Finally, the usage of consultant companies is also a key success factor of exploitation of opportunities and this was practice by only few dairy farmers.

Canada is a more homogenous industry when it comes to exploitation of opportunities. Proactive behavior though, was one the key success factors of exploitation of opportunities. For example, proactive activities in the search of opportunities through experimentation, team work with consultants, university researchers, attending seminars were the main success factors of exploitation of opportunities. While most of the milk producers in Canada become aware of opportunities through peers, the implementation of the change/innovation was greatest through outsourcing. Tighter networks knots with suppliers, dealers, and consultants were identified in the Canadian industry than in the Mexican industry.

### *RQ3 • How do farmers 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 you talked to through the implementation process and nine out of fourteen answers included colleagues and four out of fourteen answered “only colleagues”. This was due to not only the financial limitations but also because the opportunity was discovered through peers so help through the implementation was also require from those colleagues that had implemented the innovation before. Other, but less common answer included a combination of colleagues and veterinarians. The least common answer was consultants and suppliers.

On the other hand, Canadian producers take a different strategy in which they usually use for the implementation suppliers/technicians, consultants, and nutritionists. Even though a common way of becoming aware of innovations is through colleagues the implementation process mainly takes a team approach with external source and slightly advice from other producers. Per example a consultant or a supplier would be in charge of the implementation and would provide the farm managers with specific numbers and instruction to exploit that technology at its best.

Despite who the farmer received help from, it was clear that the combination of multiple and specialized help would make the implementation more successful. For example, a combination of benchmarking and consultants strategy were used by the most successful producers within our sample. In addition the use of governmental programs would 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.

## **Preposition findings**

### *Networking*

According to the analysis it was found that doing networking between producers is significant to the discovery and implementation of innovations in the dairy industry. It was observed that within the two dairy industries, the participants seemed to not see each other as competitors but as colleagues. In addition to that, they add that they do compete, for example feeds and land. The producers claimed to have similar goals and as a whole accomplish the objective of providing quality milk and satisfy their 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 completely the domestic market demand consequently diminishing the amount of imported milk. 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.

The friendly competition in both industries is one of the reasons why networking develops quickly between the participants consequently impacting the recognition and exploitation of opportunities. According to the respondents, networking through other producers ranked as the most commonly used information flow. Through each other producers not only become aware of opportunities, technology and new process but also how to effectively implement them.

Networking groups and producer organizations in both industries were limited to the 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 on farm inputs and sell to the participants as part of a credit line they all share. Gilsa is a producers group, which industrialize 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 a 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 higher price, than would for a nonmember. 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. 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 herd. All the Canadian sample affirmed to receive constant information from those sources.

To the question of which networking was used more among milk producer 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 a horizontal networking, in which producers network more with each other than any other participants along the supply chain. In both industries the communication between the milk producers and the buyer of the milk is almost nonexistent.

### *Prior Information*

The information and prior knowledge seems to be very important when it comes to the discovery and exploitation of opportunities (Shane 2000; Ardichvili, Cardozo, and Ray 2003). According to the analysis, the information which a milk producer holds is correlated with the amount of opportunities a producer becomes aware of. Surprisingly, the number of years of experience/age is inversely proportionated with the amount of opportunities a producer will search and eventually implement. 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.

The analysis from the Canadian producers clarifies that experience is not correlated with the discovery and exploitation of opportunities. All of the respondents but one share the same level of education (grade 12) with different levels of experience going from 3 years to 35 years. All the Canadian producers seem to be aware of the same opportunities. It appears to be that milk producers reached a certain level of experience or age where the level of risk taking, proactive behavior and networking decreases to a point where prior knowledge does not enhance the discovery of opportunities nor the rate of success of the implementation.

On the contrary, in Mexico, education is correlated with the amount of opportunities a milk producer becomes aware of. The more education the milk producer possess the less individualistic is and the more market tools they seem to use. The usage of outsourcing to acquire information, technologies or help to improve processes was identified to be higher with people with twelve grade education and above. In Mexico, the usage of consultants was limited to people with higher education levels and also more sophisticated farm management characteristics.

### *Market Orientation*

The producers from both countries that have a managerial style in which they constantly pursue a strategy to add value and proactively implement better and more effective way of production are more profitable than the ones that do not. However, adding value is not as common among producers. Milk producers are more likely focus their strategy on learning and constantly looking for new ways to be more efficient while not adding value to the product. The consumer orientation dimension is nonexistent in this study as the producers really focus on the buyer, which in this case would be a milk processor through Sask Milk. In terms of the buyer orientation, producers show to be up-to-date and having meticulous procedures to follow and meet the requirements which milk processors ask for in order to buy the milk. In Mexico, the producers that were identify as market oriented added value to the milk either transforming the milk into final products or by increasing the quality and consequently got a higher price for it.

“I have a University degree which helped me realize the importance of adding value, and of course I have been involved a lot on the production side and its clear to me that if producers don’t add value to the products they are going to be struggling to be profitable”

-Mexican Dairy Farm Manager No.2.

In Canada the quality awards have only started with the Canadian Quality Milk (CQM) program. The CQM program uses the Hazard Analysis Critical Control Points (HACCP) approach, which is a preventive approach that focuses in food safety. Producers that are certified as (CMQ) are getting a monetary incentive from the year 2014 and part of 2015 when the certification becomes mandatory.

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, Sask Milk or printed material. It is then obvious the importance of having close peers to compare and network in the dairy industry from Mexico and Canada.

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 acquired preservation 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.

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

-Canadian Dairy Farm Manager.

### *Entrepreneurial Orientation.*

Entrepreneurship covers a broad range of activities that includes but is not limited to start-up business, innovation, exploitation of opportunities, proactive behavior and risk taking (Nasution et al. 2011). 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.

The Mexican sample reflects to be more risk averse than the Canadian dairy farmers. The profit margin the Mexican producers have is smaller than the Canadians have so this increases the risk aversion towards the implementation of new technologies and processes. 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 Dairy Farm Manager no.3

And the ones that said “I like to see it implemented and working in another farm before I think about implementing it”. Example

“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 Dairy Farm Manager No.6

The Canadian dairy producers in general answer 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 Dairy Farm Manager No. 4

The farm manager No.4 is one of the most innovative. Now Canadian producer number No.6 takes a benchmark strategy as oppose 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 Dairy Farm Manager 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. The initiative of managers to have an opportunity-seeking, forward-looking perspective is going to impact in a great way 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 bigger. For example, for someone that believes is one of the first one to implement an innovation and the way they approach innovation is by being alert searching and collecting more information than their competitors they overall performance was this:

“My overall performance for us it has been really good, per 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 Dairy Farm 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.

## **Conclusion.**

This study delivers valuable insights into the dairy industries of Saskatchewan, Canada and Aguascalientes, Mexico. One limitation of the study is that the results are somewhat specific due to the fact that the research is being implemented exclusively on the dairy industries mentioned before. The answer to the question ‘how dairy farmers become aware of opportunities?’ reveal that there are different strategies and practices to what dairy farmers believe will give them a competitive advantage. The most common way of becoming aware of opportunities was through other dairy producers. Benchmarking appears to be a valuable business strategy to stay up-to-date in the technologically turbulent dairy industry.

The research question two ‘what are the key success factors of exploitation of opportunities?’ the findings indicate on the one hand that in the Mexican industry the key success factor of exploitation of opportunities was to have broad network group of producers. This strategy would help producers not only become aware of opportunities but also with the implementation of new technologies, processes and the use of novel products. On the other hand in the Canadian the key success factors

of exploitation of opportunities was the effective use of outsourcing as companies like DHI and dairy farm consultant agencies to implement what better fits your farm needs in an efficient and profitable way. In addition other key success factors of exploitation of opportunities in both industries are the proactive behavior in the search of opportunities, education and experimentation.

Research question three investigates ‘How do farmers improve the success rate of implementation of innovations?’ Our findings reflect two different strategies, one from the Mexican industry in which dairy farmers improve the success rate of implementation by keeping a constant interactions with the 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 this two strategies the proceeding observations suggest that the more sources of information you use about the innovation the better. A strategy that use benchmarking and consultants agencies was used by the most successful producers within our sample.

In terms of the research propositions, networking is significant within the two industries. Despite none of the participant from the whole sample belongs to a networking group, the role of cattle associations and producers 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 use more a horizontal networking in which they interact more between them than a vertical networking (suppliers, buyers, transport). Both industries show to have very little interaction with the buyer of the milk unless problems with quality arise.

The prior information proposition wasn’t significant enough to be supported by this study. Surprisingly, experience wasn’t correlated with the discovery of opportunities neither the exploitation in the Canadian industry. In the Mexican industry the level of education had a significant impact on innovation and proactiveness. Age is inversely proportional with the amount of opportunities a producer will search for and eventually implement. Several dairy farmers knew and support this statement affirming that they didn’t want to go through any innovation before transitioning to the new generation.

Market orientation was significantly important in the dairy industry in the sense that competitor orientation (benchmarking) and interfunctional coordination were key success factors as well as the proactive market orientation and the learning orientation would provide the dairy farmer with a competitive advantage to discover and exploit opportunities.

This study suggest that entrepreneurial orientation was also significant in which the levels of innovativeness, proactive behavior and risk taking were important to become aware of opportunities and increase the success rate of implementation. The level of competitions were identified to be low in both industries and a more friendly competition approach was describe with the participants of this study.

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