WAGENINGEN UNIVERSITY AND RESEARCH CENTRE

MARKETING AND CONSUMER BEHAVIOUR GROUP

HOW DOES THE ENVIRONMENT SHAPE AN INDIVIDUAL'S THE MARKET ORIENTATION AND ENTREPRENEURIAL PROCLIVITY?

BY
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DEDICATION

To my wife Doris Acheampong and my daughter Awuraa Adwoa Nkatiah Acheampong

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ABSTRACT

Most firm owners operate in a very dynamic environment with a lot of uncertainties pertaining to customers, competitors and technologies. As the firm owners continue to face these dynamics in the environment, it is expected that they will adapt their market orientation (MO) and entrepreneurial proclivity (EP) to these changes to increase their performance. This study tests empirically whether the environment shapes the MO and EP of firm owners. A model with hypothesis about the influence of the environment on MO and EP is provided and tested for a sample of Dutch farmers drawn from the Dutch Farm Accountancy Data Network. Hierarchical linear modelling technique was the analytical method used for the studies. The results show that competitive environment positively influence the market orientation of firm owners. Technological turbulence on the other hand decreases the MO of firm owners. Moreover, the study found out that firm owners do not differ in their EP.

Key words: market orientation, entrepreneurial orientation/proclivity, environment, learning.

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CHAPTER ONE

1.0 INTRODUCTION

Over the past decades, agricultural enterprises in the European Union have traditionally received different treatments from non-agricultural businesses in terms of government support and other policy regulations (Clark, 2009; Morgan, Marsden, Miele, & Morley, 2010; Phillipson, Gorton, Raley, & Moxey, 2004). For instance in the Netherlands there has been a strong collaborations between Dutch farmers, extension services and education which has resulted in continuous increase in the production of agricultural products (Leeuwis et al., 2006). However, the situation whereby agricultural firms are treated differently from other businesses is gradually diminishing (Phillipson et al., 2004). This is as the result of trade liberalization, change in government regulations as well as the continued variation in customer demands and competitive activities (Phillipson et al., 2004). The destiny of entrepreneurs has been left in their own hands. They have to increase their resources to increase their performance. Farmers can increase their resources by offering products and services that are of value to their customers. Also they can increase their resources when they are able to use their competitive advantage in the market to thwart the threats of their competitors. Entrepreneurial orientation and market orientation are two key resources that firm owners can use to increase their performance ((Matsuno, Mentzer, & Ozsomer, 2002; Rauch, Wiklund, Lumpkin, & Frese, 2009)

There has been a general agreement among researchers that there is a positive relationship between entrepreneurial proclivity (autonomy, innovativeness, risk taking, proactiveness and competitive aggressiveness) and firm performance (Knudson, Wysocki, Champagne, & Peterson, 2004; Lumpkin & Dess, 1996; Matsuno et al., 2002; Phillipson et al., 2004; Pyysiainen, Anderson, McElwee, & Vesala, 2006; Rauch et al., 2009; Wang, 2008; Wiklund, 1999; Wiklund & Shepherd, 2005; Zahra & Covin, 1995). In a similar vein there is a positive relationship between market orientation (customer orientation, competitor orientation and interfunctional coordination) and firm performance (Baker & Sinkula, 1999; Greenley, 1995; Han, Namwoon, & Srivastava, 1998; Jaworski & Kohli, 1993, 1996; Kirca, Jayachandran, & Bearden, 2005; Matsuno et al., 2002; Narver & Slater, 1990). Strong market and entrepreneurial orientation help firm owners to be more responsive towards satisfying the needs of their customers and keep them alert about the activities of their competitors. So market orientation and entrepreneurial orientation are very crucial for firms and thus it is expected that firm owners develop and use these two resources. It should be noted that the positive relationship between EO-performance and MO-performance does not happen in a vacuum. The environment within which firm owners operate has a significant impact on this

relationship (Kirca et al., 2005; Lumpkin & Dess, 2001; Slater & Narver, 1995). Most firm owners operate in a very dynamic environment with a lot of uncertainties pertaining to customers, competitors and technology.

As firm owners continue to face dynamics in the environment, they are expected to adapt to these changes. Firms adapt to their environment in two ways; first entrepreneurs learn (Lumpkin & Dess, 2001) and second firms that do not adapt to the environment go bankrupt or do not survive (Cordes, 2006). It is still not clear how the environment shapes the EO and MO of firm owners. In most cases the environment is seen as moderator between EO-performance and MO-performance relationships. (Hult & Ketchen, 2001; Kirca et al., 2005; Lumpkin & Dess, 2001; Slater & Narver, 1995). Thus it either strengthens or weakens the EO-performance and MO-performance relationships.

The purpose of this study is to find out how the environment shapes the entrepreneurial orientation and market orientation of firm owners. To achieve this aim of the research, the following research questions are formulated:

- What is a firm owners' entrepreneurial proclivity?
- What is a firm owners' market orientation?
- What is the relationship between the environment and market orientation of firm owners?
- What is the relationship between the environment and entrepreneurial orientation of firm owners?

The second chapter of the research looks at relevant literature in the areas of entrepreneurial proclivity, market orientation and the environment. The result of the literature search leads development of a model and hypothesis of the study. The third chapter explains the methodology used to test the model. The results of the research are presented in chapter four. Chapter five presents the conclusions and the discussions of the findings.

CHAPTER TWO

2.1 THEORY

In order to answer the research questions above, relevant literature in the areas of entrepreneurial orientation, market orientation, EO and MO performance relationships, small firms, learning and Darwinian economics have been discussed in this part of the report. This provided us with insights to develop the model and hypothesis for the study.

2.1.1 Entrepreneurial Orientation (EO)

EO is defined as the 'willingness of a firm owner to innovate to rejuvenate market offerings, take risks to try out new and uncertain products, services and markets and be more proactive than competitors towards new market opportunities'(Wiklund & Shepherd, 2005). Many scholars agree that EO is made up of three main dimensions: innovativeness, pro-activeness and risk taking (Wiklund & Shepherd 2003; Madson, 2007).

Innovativeness has to do with the willingness to support new ideas, novelty, experimentation and creativity. It involves departing from established practices and technologies (Wiklund & Shepherd 2003; Lumpkin & Dess, 1996; Madson, 2007). Innovativeness may occur as the result of one's willingness to try a new product line or experiment with a new advertising venue, and commitment to master the latest in new product or technological advancement (Lumpkin & Dess, 1996).

Proactiveness is about being forward looking and opportunity seeking. It involves the introduction of new products and services ahead of competitors to serve current markets while at the same time acting in anticipation of future needs of customers in order to create a first mover advantage. Being first to enter the market results in market dominance, higher profitability as the result of experience curve benefits, customer loyalty and capturing of market shares. [A forward looking perspective allows proactive firms to capitalize on emerging opportunities (Wiklund & Shepherd 2003; Lumpkin & Dess, 2001).]

Risk taking is 'the tendency to take actions such as venturing into unknown new markets, committing a large portion of resources to ventures with uncertain outcomes and/or borrowing heavily to start a new venture where the cost of failure may be high' (Wiklund & Shepherd, 2003; Lumpkin & Dess, 1996).

Other authors also include two other dimensions of EO: autonomy and competitive aggressiveness (Lumpkin & Dess, 2001). *Autonomy* is defined as 'independent action by an individual or teams aimed at bringing forth a business concept or vision and carrying it through completion' (Lumpkin &

Dess, 2001). *Competitive aggressiveness* reflects the firm's posture to outperform its competitors through various attacking strategies (Lumpkin & Dess, 2001).

2.1.2 EO and Firm Performance

EO has positive performance implication for the firm because of short product and business life cycle. This makes long term profits from existing business uncertain. Hence firm owners need to constantly seek new opportunities to survive (Hamel, 2000). Innovative companies are constantly creating and introducing new offerings to fulfill the demands of both current and future customers, thereby improving economic performance (Brown & Eisenhardt, 1995). Proactive firms have the capacity of creating first mover advantage, target premium market and skim the market ahead of competitors (Wiklund & Shepherd, 2003; Zahra & Covin, 1995). They may control the market by taking the greater share of distribution channels and also through brand establishment. Moreover, proactive firms act on supplier-based knowledge. Hence are able to respond to the demands of the market (Griffith, Noble, & Chen, 2006). Already established strategies results in short term profits while risky strategies are associated with long term performance (McGrath, 2001). This long term returns is the motivation for risk loving entrepreneurs to take risk when necessary. In order to create sustained advantage, firms should be willing to create, acquire and leverage resources (Barney, 1991).

The perceived 'goodness' of EO has some challenges. It is argued that the concept of EO is not comprehensive enough because it only centers on the search for opportunities and or the process of identifying and developing opportunities (Churchhill, 1992; Shane & Venkataraman, 2000). Moreover, the magnitude of the relationship between EO and performance seems to vary across studies. Some studies report that firms with strong EO emphasis perform better than those with less EO emphasis (Griffith et al., 2006; Hult, Snow, & Kandemir, 2003; Wiklund & Shepherd, 2003). Other studies did not find any significant relationship at all (George, Wood Jr, & Khan, 2001).

2.1.3 Market Orientation (MO)

MO could be explained in terms of either behavioral or cultural characteristics (Homburg & Pflesser, 2000). Culturally it is about the norms and values of firm owners that guide their action toward competitors and customers (Homburg & Pflesser, 2000). In terms of behavior, MO is the 'generation and dissemination of market information and organizations responsiveness to such information (Jaworski & Kohli, 1993; Cano, Carrillat, & Jaramillo, 2004). One key point worth mentioning is that the customer is central focus in MO (Mavondo & Farrell, 2000; Cano et al., 2004). All the activities in MO is aimed at creating superior value for the customer (Deshpandé & Farley, 1998). Various

researchers conclude that MO is made up of three dimensions: customer orientation, competitor orientation and interfunctional coordination (Kirca et al., 2005; Narver & Slater, 1990).

Customer orientation includes all the activities involved in acquiring information about buyers and disseminating such information across all the relevant departments in the organization (Jaworski & Kohli, 1993; Narver & Slater, 1990). It involves understanding the needs of both present and future customers in order to continually create a superior offer for them (Narver, Slater, & Tietje, 1998). Thus customer orientated firms emphasize information use and learning to identify the latent needs of customers (Atuahene-Gima, 1996; Grinstein, 2008; Narver, Slater, & MacLachlan, 2004). Firms can create value for their customers in two main ways: either by offering then maximum benefit or reducing the cost of the product (Narver & Slater, 1990). Before a firm can meet the needs of its customers well, it must have adequate information on their economic constraints in all levels of the value chain (Kirca et al., 2005). With such comprehensive information they can understand who their potential customers are at present and who their customers may be in future, what they want now and what they will need tomorrow, their present perception as well as their future perception (Narver & Slater, 1990).

Competitor orientation means firms acquire enough and relevant information about their competitors in the target market and disseminate such information across relevant departments in the organization and their response to it (Jaworski & Kohli, 1993). This implies that firms must understand both the short term strengths and weaknesses as well as the long term capabilities and strategies of their key present and future competitors (Narver & Slater, 1990). Additionally, competitor oriented firms monitor the activities of their competitors, looks for shortfalls and develop products to fill the observed vacuum in order to gain competitive advantage (Grinstein, 2008). Combined with customer analysis, firms will be able to create strategies and techniques to satisfy the (current) needs of competitor's buyers (Narver et al., 2004).

The interfunctional coordination is the process whereby the various departments in an organization work together in a more coordinated manner to create value for their customers (Jaworski & Kohli, 1993). Creating value for the customer is much more than a marketing function. It involves all the subgroups in the organization (R&D, sales persons, finance, senior management, logistics etc) – it is a multisystem approach. Thus interfunctional coordination involves the proper focus of the entire business and not a single department (Grinstein, 2008).

2.1.4 MO and Firm Performance

The idea that MO leads to superior performance has come about as the result of extensive research (Jaworski & Kohli, 1993; Kirca et al., 2005; Matsuno et al., 2002; Narver & Slater, 1990; Cano et al., 2004). It has been found to be among the most important drivers for business performance (Cano et al., 2004). Market orientation leads to superior performance due to the high emphasis it place on creation and maintenance of greater customer value through the development and exploitation of markets (Hult & Ketchen, 2001; Narver & Slater, 1990). Some researchers argue that market oriented firms are very proactive. They do not just follow their customers, but they also respond to their needs, both present and future. They constantly look out for opportunities to satisfy their customers through the provision of superior value (Narver & Slater, 1990). They create value for their customers by increasing the benefits or decreasing the cost of products or service (Jaworski & Kohli, 1993; Narver & Slater, 1990). Competitor orientation mostly helps firms to be ahead of their competitors. It offers the firm the opportunity to identify the strong and weak points of the competitor. Interfunctional coordination brings all the relevant partners in the organization on board – it ensure that all the relevant actors in the organization understand the importance of superior customer value and how each of them can contribute to the process of satisfying them (Grinstein, 2008).

2.1.5 The Firms' Environment

'The environment is what gives organizations their means of survival' (Johnson, Scholes, & Whittington, 2009). While satisfied customers keep private organizations in business, government, clients etc. gives public organizations their means of survival (Johnson et al. 2009). Johnson and his colleagues also argue that although the environment provides numerous opportunities to firms it is also a source of threats (Johnson et al., 2009). Such threats could be in the form drastic shift in market demand, change in regulation, new technologies and entry of new competitors (Johnson et al., 2009). The firms understanding of its environment is integral to its success since it defines the attractiveness of the industry within which one is operating (Johnson et al., 2009).

The environment poses some degree of uncertainty to firms (Dess & Beard, 1984; Duncan, 1972) which includes: hostility, dynamism and heterogeneity or complexity (Lumpkin & Dess, 2001). The degree of uncertainty could be in the form of competitor intensity, customer dynamics and technological turbulence (Gatignon & Xuereb, 1997). Dynamism is the rate of unpredictability of the action of consumers and competitors (Lumpkin & Dess, 2001) and it shows the uncertainty that erodes the ability of firm owners to predict future events (Lumpkin & Dess, 2001). The heterogeneity or complexity dimension is the 'variation in the firms markets that requires diversity in production

and marketing' (Lumpkin & Dess, 2001). There are two things that are associated with all these uncertainties. The environment is seen as source of opportunities and a stock of resources (Lumpkin & Dess, 2001).

2.1.6 The Environment and how it moderates EO-Performance and MO-Performance Relationships

The environment could either strengthen or weaken EO-performance and MO-performance relationships (Kirca et al., 2005; Lumpkin & Dess, 2001). For instance a strong MO in a competitive environment enables firms to identify the strengths and weak points of their competitors, future needs of customers and anticipated action of competitors (Grinstein, 2008). This propels firms to come out with superior products and services than that of their competitors, which ultimately results in high firm performance. Demand uncertainty also influence MO performance relationships (Jaworski & Kohli, 1993). Demand uncertainty resulting from changes in consumers' preference requires strong customer orientation to identify customers' needs and their buying behaviour (Gatignon & Xuereb, 1997). The variation in customer demands also calls for intense R&D efforts if a firm wants to remain competitive. Gathering of market information is very essential in technological turbulent environment due to large availability of information and short product life cycle (Grinstein, 2008). Technology can facilitate the firm's ability to convert customer needs to new product in order to improve the performance of the firm (Grinstein, 2008). However, empirical findings do not support this assertion (Grinstein, 2008). Some studies argue that technological turbulence is less likely to lead to new product development and superior firm performance, because development of new product is not driven by customers but by R&D efforts (Grinstein, 2008).

With regards to EO, previous research has shown that EO- performance may be different in different types of environments (Wiklund & Shepherd, 2005). Firms operating in high-tech and dynamic environments are able to perform better through risk taking behaviour, innovation and proactive strategies and tactics (Lumpkin & Dess, 1996). Proactive and innovative firms perform better in dynamic environment because these two dimensions are associated with exploration of resources and creation of niche markets (Lumpkin & Dess, 2001). In addition, dynamic environment is characterize by high unpredictability of customers and competitors (Daft & Weick, 1984) with constant shift in demand, creates opportunity for firms that are more entrepreneurial oriented (Wiklund & Shepherd, 2005). This is because such firms have a good fit between their EO and the environment. Entrepreneurial behaviour entails more risk and such risk taking attitude may be necessary for firms to survive in hostile and dynamic environments (Zahra & Covin, 1995). Such risk loving attitude is required to creatively employ and leverage resources and convert such resources

to market offerings to meet the changing needs of customers while at the same time outperforming competitors (Griffith et al., 2006).

2.1.7 Marketing in Small firms

According to the European Commission (2005) small firms are define as enterprises that employ less than 50 persons with less than ten million euro annual turnover or annual budget. Micro firms on the other hand employ less than 10 persons with annual turnover of less than or equal two million euro. Small and micro firms have a relatively small share of the market and are managed by owners or part-owners in a personalised way without a formal management structure and they are independent, in the sense of not forming part of a larger enterprise (Hill, 2001). Although small firms do not have much power to influence their environment, their size can offer them some competitive advantage (Hills, Hultman, & Miles, 2008). For example, the organizational structures of small firms are not too rigid, sophisticated and complex as those in large firms which make them more flexible and encourage creativity (Hill, 2001). Since small firms mostly lack adequate resources (Hogarth-Scott, Watson, & Wilson, 1996) they pursue their marketing functions with the main aim of insulating itself against direct major competitors which makes them exploit niches that have been left by the large firms (Avlonitis & Salavou, 2007; Hogarth-Scott et al., 1996). Although, marketing is important in small firms, it is more concerned towards the day to day survival of the firm rather than following a strict market plan. Thus in periods of uncertainty,, small firms mostly focus on doing things that will help them to survive rather than concentrating on long term planning (Hogarth-Scott et al., 1996; Keh, Nguyen, & Ng, 2007)

2.1.8 Market Orientation, Entrepreneurial Orientation and Small Firm Performance

It has been established that small firms that are more entrepreneurial and marketed oriented perform better than their counterparts (Avlonitis & Salavou, 2007; Jaworski & Kohli, 1993; Wiklund & Shepherd, 2003; Kirca et al., 2005). Small firms are not in the world of their own but are also part of the global marketing landscape that is flooded with complex consumer demand and aggressive competitors. Therefore, they need to have a clear understanding of the demands of consumers in order to provide them with offerings that can satisfy their needs while monitoring the activities of their competitors and devising means of outperforming them. Thus the high performance relationship between EO-performance and MO-performance in small firms has been established due to the following reasons: (1) small firms tend to satisfies niche market that has been left by the large firms (Avlonitis & Salavou, 2007; Hogarth-Scott et al., 1996), they tend to have a superior understanding of the needs of the customers, clear understands of the market trends and are able to position themselves well (Hill, 2001; Hills et al., 2008; Zontanos & Anderson, 2004), (2) they are

able to identify opportunities through innovation (at the same time taking the associated risk) of products to meet the needs of the target market (Hills et al., 2008), (3) they exploit and create turbulent environments (Avlonitis & Salavou, 2007; Hills et al., 2008; Hogarth-Scott et al., 1996). Thus small firms are very innovative, creative, customer focused and always try to avoid direct competition by serving niche markets.

2.1.9 Market Orientation, Entrepreneurial Orientation and the Performance of Agricultural Firms

According to the European Commission (2005), most agricultural firms in Europe are either small or micro. This is because most of them employ less than 50 persons with less than 10 million annual turnover. In the Netherlands for instance most agricultural firms are family firms (LEI, 2011). These farm owners are expected to be entrepreneurial and market oriented in the midst of demand uncertainties, competitor hostilities and dynamics in technology.

Gone are the days when agriculture market was seen as supply based and national market. The focus of agricultural market has change from its production based and national orientation towards consumer based and international orientation respectively (Phillipson et al., 2004). It is now incumbent on farmers to respond to the international change in consumer demands amidst the global competition (Verhees, Kuipers, & Klopcic, 2011). With EP and MO focus farmers will be in the better position to provide superior products to fulfil the changing needs of its global customers. For instance it is expected that technological advancement will offer farmers the opportunity to produce high yielding crops with long shelf life and at low cost. In technological turbulent environments EO farmers are more likely to identify opportunities such as new crop varieties and breeds of animals that will meet the needs of their clients. It is expected that these characteristics will help MO and EO farmers bring their offerings to the market before their competitors, thereby assisting them to leverage on the distribution channel, reaping the benefit of experience curve and creating customer loyalty (Verhees et al., 2011). Farmers with strong customer orientation try to search for information about the needs of the current and future customers and provide goods and services to satisfy such needs. They study the behaviour of their current customers and are able to predict with some level of accuracy what their needs will be in the future so they are not caught unaware. With strong competitor orientation farmers are able to identify the low and high points of their competitors. This enables them to capitalize on their core competences to outperform their competitors.

Despite the above arguments, not all farm industries are market and entrepreneurial oriented. For instance dairy farmers in the European Union are restricted on the amount of milk that they can produce. Thus they have to produce within a given quota (Bergevoet, Ondersteijn, Saatkamp, van Woerkum, & Huirne, 2004). Moreover, they have a contractual agreement with their customers

whose needs do not change so often. In addition, competition in the dairy industry is not that fierce as compared to other industries. This quota system therefore makes demand and competition less volatile.

2.1.10 Entrepreneurial Learning

There are two main types of learning that firm owners may experience. These are lower order learning and higher order learning (Slater & Narver, 1995). Lower order learning is often referred to as single loop learning. It is the most basic form of learning. This type of learning mainly involves making changes in the day to day activities of the firm as the result of detecting and correcting errors within given system of rules. It is mainly incremental improvement to existing practices (Slater & Narver, 1995). It does not require making any major changes in objectives of the firm. As firm owners go through their normal day to day activities they develop capabilities that enable them to adjust their activities to meet any onforseen circumstances in the environment. Since lower order learning is concerned with routine and repetitive activities, firm owners are able to learn in the short term things that worked well and those that did not work well in the previous period. The ultimate effect of lower order learning is a particular behavioural outcome or performance (Fiol & Lyles, 1985; Slater & Narver, 1995). The focus is mainly on the immediate effect of a particular activity.

On the other hand, higher order learning has to do with more complex forms of learning which requires the changing of some fundamental assumptions of the firm. It aims at modifying the overall goals, rules, norms, policies, procedures and structures rather than just specific activities or behaviours (Slater & Narver, 1995). Higher order learning has an impact on the overall firm and involves more processes than lower order learning (Slater & Narver, 1995). A lot of evidence suggests that some type of crisis in the environment in terms of dynamism and uncertainty relating to competitors, customers and technology is a pre-requisite for higher order learning to occur (Slater & Narver, 1995). The anticipated results of higher order learning are on the development of reference point and new cognitive frame work with which to make decision and not necessarily on any particular behavioural outcome (Slater & Narver, 1995). One important point worth mentioning here is that, unlearning may be one of the most desirable outcomes of higher order learning (Slater & Narver, 1995)

Learning can be seen as a form of making meaning from experience and at the same time the process of acquiring and structuring knowledge (Rae & Carswell, 2000). The environment within which entrepreneurs operate pose a lot of challenges to them and in the process of overcoming such challenges they learn from their success and failures (Cope, 2005; Wang, 2008). It should be noted that, when the environment is too dynamic entrepreneurs are unable to learn useful lessons (Cope,

2005; Fiol & Lyles, 1985; Lumpkin & Lichtenstein, 2005). But in the long run firm owners will only remain competitive if they can learn at the rate of change in the environment (Sinkula, Baker, & Noordewier, 1997)

As firm owners continue to learn from their environment a time will come when their EO and MO approaches will be totally dependent on the changes in the environment (the environment will become the antecedent to MO and EO). They will be able to identify EO and MO approaches that work best in different situations they encounter. This will help them to align their EO and MO approaches to the dynamics in the environment. For example, learning organizations are very flexible hence they are able to adjust and relocate their resources to focus on emergent opportunity or threats (Slater & Narver, 1995). Learning helps an organization to align (potential to learn, unlearn, or relearn based on past behaviours) with its environment to remain competitive and innovative (Fiol & Lyles, 1985), it helps firms to build an organizational understanding and interpretation of their environment (Fiol & Lyles, 1985; Wang, 2008). This then confirms that firms whose core value is continuous creation of superior customer value for customers will be able to obtain a competitive advantage in the turbulent, hostile and complex market landscape when they are committed to learning (Fiol & Lyles, 1985; Wang, 2008).

2.1.11 Darwinian Economics

The Darwinian economics explains how the principles derived from Darwin explanatory model of biological evolution can be applied to explain the phenomena of socio-economic evolution (Cordes, 2006). In order to bring forth the relevance of Darwinism to economics it will be necessary to take a closer look at the principles behind it. The Darwinian evolution theory that is mostly used in economics is the theory of natural selection (Cordes, 2006; Knudsen, 2002). The theory of natural selection shows that evolutionary change comes about through the generation of organic variance and the fact relatively few surviving individuals pass on a particular well-adapted set of inheritable characters. It follows that there is continuous struggle for existence among individual and those that are able to withstand the forces of selection pressure are those that survive (Cordes, 2006).

There are several approaches to explain the application of Darwinian economics (natural selection) in modern economics (Cordes, 2006). One of such approach is the Universal Darwinism. The Universal Darwinism approach argues that the evolutionary aspects of biological organisms involves the general Darwinism principles of variation, inheritance and selection can be used to analyse all open, complex systems including economics systems (Cordes, 2006). Darwinian economics shares some common features with economics because both biology and social science involves evolving systems (Cordes, 2006). The principles of variation, inheritance and selection are all abstract theories

from the theory of evolutionary biology (Cordes, 2006) which implies that their principles and relationships are within the analogy construction that can be transferred to economics (Cordes, 2006; Knudsen, 2002).

Although there is still ongoing debate about the application of the Darwin biological principles in economics (Cordes, 2006), there are some useful parallels that can be drawn especially with regards to how entrepreneurs learn from their environment (Cordes, 2006). Like evolutionist, economics place much premium on the external force in the market (Saunders, 1999). These forces could be in the form of competition, change in customer buying behaviour and technological turbulence among others. For instance if consumer demand for certain product changes, entrepreneurs will rearrange their resources to produce the new product to meet the changing needs. In similar vein, if the appropriate genetic variant to face an environmental challenge is not present in a given population they are likely to arise as early as possible by mutation (Saunders, 1999). In another example let assume that in a given situation confronting an economic agent (entrepreneur), there exist two alternative mode of action. In this case there are two choices that entrepreneurs can take (Saunders, 1999). The first is optimization – because entrepreneurs are rational and well informed before acting; they will carefully select the option that will give them the optimum results. That is choosing any of the options is as a results of their past experience (Saunders, 1999). They will base their preference on the consequences of the alternatives presented to them. The second choice is competitive selection – not all the entrepreneurs are able to distinguish the importance of the two alternatives. If one of the options appear superior to the other, then those who chose that alternatives will outperform their opponents (Saunders, 1999). With time those who chose the inferior option will be eliminated due to competition (Saunders, 1999). Thus competitive selection is somehow similar to survival of the fittest (natural selection) in the Darwinian universal approach.

2.2 MODEL AND HYPOTHESIS

2.2.1 Model

Figure 1 shows the model we propose to test the relationship between the environment and market orientation and entrepreneurial orientation of firm owners.

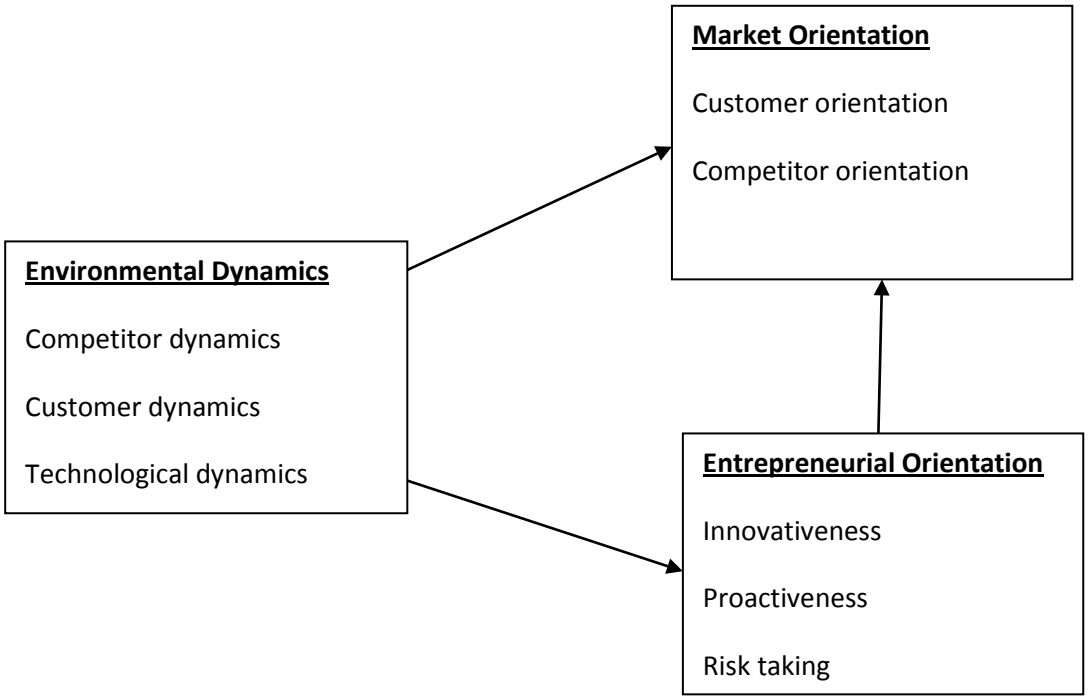

Figure 1: Relationship between Environmental dynamics, EO and MO

This model applies to small firms, particularly farmers. A farmer is someone who has a farm and control a farm business which involves growing of crops and rearing of livestock for sale or own consumption to fulfil the needs of the operator and the workers of the farm (McElwee, 2008; Verhees et al., 2011). A lot of farms in the European Union are micro-firms and are define as firms with less than 10 workers as well as those without workers with annual turnover of less than two million Euros (European Commission, 2005).

The environment is the sum total of all the surroundings of a firm in terms of customer dynamics, competitive intensity and technological turbulence ((Grinstein, 2008; Jaworski & Kohli, 1993; Kirca et al., 2005; Lumpkin & Dess, 2001) Customer dynamics has to do with uncertainty in both current and future demand as the result of consumer's change in preference, taste, wishes, aspirations and wishes ((Gatignon & Xuereb, 1997). Competitive intensity referrers to the degree of threat to the

firm as the results of intense competition from its main competitors (Covin & Slevin, 1989; Zahra & Covin, 1995). Technological turbulence has to do with the rate of change of products and processes as the result of advancement in technology (Ngamkroeckjoti & Speece, 2008). These aspects of the environment determine the EO and MO approaches of firm owners.

Most researchers agree that EO is the combination of three dimensions: innovativeness, pro-activeness and risk taking (Covin & Slevin, 1989; Miller, 1983; Johan Wiklund & Shepherd, 2005) Innovativeness is the willingness to support novel ideas, to experiment with the unknown and being creative. (Lumpkin & Dess, 1996). Pro-activeness is the ability to act in advance to deal with future problems, customer needs and changes in the market environment (Lumpkin & Dess, 2001). Risk taking is the willingness to commit large amount of resources into a project with a high probability of failure, but with high anticipation of returns (Lumpkin & Dess, 2001). These three elements of EP are very critical to firm performance (Covin & Slevin, 1989; Miller, 1983; Johan Wiklund & Shepherd, 2005), but the eagerness with which entrepreneurs will adopt any of the three approaches depends on the changes in the environment.

Market orientation is the generation and dissemination of market information and organizations response to it (Jaworski & Kohli, 1993). Market orientation comprise of three main elements: competitor orientation, customer orientation and interfunctional coordination (Homburg & Pflesser, 2000; Kirca et al., 2005). But this research will be limited to only customer orientation and competitor orientation. In micro firm enterprises, the firm owner is mainly the sole decision maker, hence interfunctional coordination does not play any significant role. Customer orientation involves the gathering of market information about both current and future customers and organizations responsiveness of using such information to create superior market offering for the customers (Levitt, 1980; Narver & Slater, 1990). Competitor orientation is about acquiring information about firms' competitors in terms of their strengths, weakness and the latent needs of their customers and using the generated information to gain advantage in the market (Jaworski & Kohli, 1993; Narver & Slater, 1990).

As firm owners encounter different dynamics in the environment, they are expected to align their EO and MO to these changes. They have to learn from their mistakes and successes if they want superior performance. In the long run those firms that do not adjust themselves well to the environment will not be able to survive since they will eventually lose their source of wealth.

2.2.2 Hypothesis

The firms' environment is hypothesized to have a positive influence on the MO approaches of firm owners. In an environment characterised with dynamic customer demands, it is expected that firm owners become more customer oriented. In such environment the firm's success will depend on its ability to adapt and respond to the needs of the evolving customers (Appiah-Adu and Singh, 1998). Through adaptation they will be able to rearrange their resources to come up with offering that will satisfy their customers. Since customers are the ones who pay for the services and products of a firm, serving them well implies more profit for the firm. Firms that failed to response to the changing needs of its customers are likely to go bankrupt because their customers will be less loyal, it will lead to negative word of mouth, which will ultimately results in decrease in the firms' revenue/profit. In such environments firm owners constantly gather information about the current and future needs of the customers. The aim of search information gathering is to gain superior understanding of the constant change in demand of consumers in order to provide them with superior offer.

H 1a: Firm owners operating in an environment characterized by customer dynamics are more market oriented.

Small firm owners are more customer oriented when faced with an environment with high competitive intensity. When the marketing environment is very competitive, customers have access to several options to satisfy their needs (Appiah-Adu and Singh, 1998). This implies that customers can easily switch from one firm to the other. In order for a firm to keep its customers it should monitor the activities of its competitors to identify their strengths and weaknesses and device means of outperforming them (Grinstein, 2008). Thus in such competitive turbulent environment, firms are more likely to be adaptive and responsive to the evolving needs of their customers and competitors customers alike. Firms that do not respond to the needs of their customers in such an environment do so at their own risk of losing their customers to their competitors (Appiah-Adu and Singh, 1998).

H 1b: Firm owners operating in an environment characterised by competitive intensity are more market oriented.

Technology has the potential of assisting firm owners to satisfy their customers well (Grinstein, 2008). With very reliable technology firm owners will be able to provide products and services to their customers at reduce cost and also increase the benefit they receive from the products or services of the firm. It then follows that market oriented firms should be more concerned about the rate at which technology is changing. The rate of technological has a significant impact on the

profitability of the firm and its overall success. Some researchers (Jaworski & Kohli, 1993; Slater & Narver, 1994) argue that technological change has negative influence on the firms' performance. But if market orientation is about understanding the needs of customers and activities of competitors, then if firm owners carefully adapt their market orientation to the technological change they stand the chance of improving their performance. Through learning (adaptation) they will be able to select the technologies that will help them to meet the needs of their customers and also perform better than their competitors. On the other hand if they fail to adapt to the technological changes, they are likely to perform abysmally and in the long run they will not be able to continue their existence.

H 1c: Firm owners operating in technological turbulent environment are more market oriented.

Proactive firm owners are more forward looking and as such are not taking over by circumstances. They have the ability to anticipate the future needs of their customers and actions of their competitors' base on their past experiences. Moreover they are more abreast with the frequent changes in technology due to their forward looking behaviour. This helps them to adjust their EO approach appropriately. This adjustment/adaptation aids them to provide products and services that meet the real needs of their customers. When the firm is able to satisfy its customers adequately they tend to depend on the firm which has a direct impact on sale and profitability of the firm. Firms that do not adapt in dynamic environment are unable to meet their customers' needs. Their customers begin to look elsewhere for products and services that can satisfy them. With time the firm will lose all its customers to competitors and in the long run will not be able to exist anymore.

H2a. Firm owners operating in competitive environment, customer dynamics and technological turbulent environments are very proactive.

Technological turbulent environment makes firm owners very innovative. Innovative firm owners are more prepared to depart from the already known technologies such as replacing old crop variety with new ones (Verhees et al., 2011). Thus innovative firm owners are willing to cannibalize their source of resources to try out the new in town technology. They learn from their past and looks for innovative way to gain advantage in the market. They are more experimenting and creative and are more problem solving oriented. Hence they are always prepared to go in for new technologies that will in the end help them to serve the needs of their customers while at the same time gaining advantage over their competitors in the market. Moreover, in technological turbulent environment firm owners become more innovative so they could increase the benefits the consumers derived from their products and/or decrease their cost. Thus firm owners learn to be very innovative in technological turbulent so that they can satisfy their customers well and continue to keep them.

Moreover, learning to be innovative in technological turbulent environment helps firms to protect themselves against obsolescence. Innovative firms in technological dynamic environments use up to date technologies that will help them to be on top of their business.

H 2b: Firm owners operating in technological turbulent environments are more innovative than those operating in less technological turbulent environment.

Firm owners operating in environment with changing customers needs, high competitive intensity and technological turbulent are more risk taking. Because of the fact that risky strategies have a high chance of failure and more people are also risk-averse, firm owners pursue such strategies when they expect some significant returns. In most cases firm owners have to spend significant amount of resources to acquire new crop varieties, new breeds of animals, new machineries in order to survive. What is worth noting here is that these crop varieties or animal breeds or machineries Might not have been tried to determine their success but risk loving entrepreneurs are more willing to commit some significant portions of their scarce resources to such ventures. For example in customer dynamic and competitive intensity environment firm owners must be prepared to commit large amount of resources into research and development in order to provides superior product for their customers and at the same time gaining more advantage in the market than their competitors. Also in a highly technological turbulent environment, it is very difficult for most firm owners to respond to the rate of change. Because they cannot predict what the rate of change will be in the future - it becomes difficult for risk-averse entrepreneurs to cannibalize their current source of worth. But the problem is that if you fail to dance to the tune of such a technological change you will be left behind and possibly you will go bankrupt. Hence irrespective of the high frequency of technological change in the environment, it is still a necessary evil to cannibalize some current resources in order to survive.

H 2c: Firm owners operating in customer dynamic, competitive intensity and technological turbulent environments are willing to take more risk than those operating in environment devoid of dynamism and hostilities.

As has already been stated, entrepreneurial orientation is about being innovative, proactive and risk taking. Information gathering and analysis is very critical for entrepreneurs to pursue the above entrepreneurial dimensions successfully (Matsuno et al., 2002). Moreover, innovativeness, pro-activeness and risk taking promote information sharing and utilization (market orientation). Winning entrepreneurs always ensure that every action or activity that they embark on helps to create value for the end customer and at the same time put them at a position where they can outperform their

competitors (Matsuno et al., 2002). Thus for sustained customer satisfaction and competitive advantage, entrepreneurial orientation of firm owners will enhance their market orientation.

H 3: There is a positive relationship between firm owners' market orientation and their entrepreneurial orientation

CHAPTER THREE

3.1 METHODOLOGY

This chapter describes the methodology that was used to execute this research work. It includes the description of the sample, measures and the analysis.

3.1.1 Sample

The sample for this study consists of 1359 firms that were drawn from the Dutch Farm Accountancy Data Network. This accountancy network was selected because it gives a clear overview of the Dutch farmers and horticultural growers, which implies that it an idea sample for this study.

A questionnaire was the main instrument that was used for the data collection. The questionnaire was sent to the respondents through regular mail with an introductory letter explaining the purpose and benefit of the research in order to motivate them to complete the questionnaire. A return envelope with postage and return address was added to the questionnaire and mailed to the respondents. The respondents also had the option to complete the questionnaire via the internet. One month after the questionnaire was sent to the respondents a reminder was sent to them due to the low response rate (391 respondents). Three months after the reminder, 621 questionnaires were returned with 588 without missing values. These 588 questionnaires without missing values were used for further analysis.

In addition to the 1359 firms 18 agricultural experts (e.g. agricultural economists, bankers, government officials, farmers' representatives, and management consultants) were sampled to assess six agricultural industries (arable farming, dairy, intensive livestock, flowers, vegetables and fruits) on market dynamics, competitor intensity and technological turbulence. These experts were selected because they are familiar with the Dutch agriculture and are in the best position to score the above environmental factors for the selected industries.

3.1.2 Measures

A questionnaire was used to measure all the concepts in the model. Since most scales used to measure the concepts were originally in English, the questionnaire was first developed in English and latter translated into Dutch by a native Dutch speaker. This was done because almost all the respondents are native Dutch speakers and are not that fluent in the English Language. Hence making the questionnaire in Dutch will enhance their understanding. To ensure that the questions are understandable two rounds of personal interviews were conducted for farmers and horticultural growers who are not part of the sample but share characteristics with the actual sample. Based on

their response, some few adjustments were made in order to make the questions more comprehensible. The questionnaire was divided into two parts to address issues relating entrepreneurial proclivity and market orientation. With regards to entrepreneurial proclivity the following dimensions were measured: innovativeness, pro-activeness and risk taking. With regards to Market orientation we measured customer orientation and competitor orientation. We limited our measurement on environment to competitor intensity, customer dynamics and technological turbulence. To test the appropriateness of the questions, quantitative analyses were run to test the dimensionality and reliability of the constructs. A seven point Likert type scale was used for the measurement, where respondents rated items from not agree (1) to agree (7). Average scores were used for further analysis. Table 1 gives an overview of the properties of the measurement scale of MO and EO.

Table 1a Measurement scale properties of EO and MO

scale	# of items	Eigenvalue second component	Variance accounted for	Lowest item loading	Cronbach,s Alpha
Entrepreneurial proclivity	3	0.38	82%	0.86	0.89
• Innovativeness	6	0.60	67%	0.76	0.90
• Risk taking	9	1.25	57%	0.66	0.91
• Pro-activeness	9	0.73	69%	0.78	0.94
Market orientation	9	0.91	62%	0.61	0.92

The scale for MO and EO were assessed using principal component analysis (PCA) and reliability analysis (Cronbach's Alpha) for their properties. For easy interpretation the PCA should provide support for one component solution. Although, the PCA gave indication of two component solution, from the screen plot it was clear that one component solution was adequate for the interpretation of the results. It shows a sharp decrease in Eigenvalue from the first component to the second component and a gradual decrease in Eigenvalue from the second component onwards. The Eigenvalue of the second component should be less than one and the first component should account for at least 50 percent of the variance in the items (Hair et al, 2010). Furthermore, before rotation, the loading on the first item should be larger than 0.6. The Cronbach's Alpha coefficient of reliability should be larger than 0.6. From the table above it could be observed that all the measures meet the above criteria except risk taking which has an Eigenvalue of the second component slightly greater than one. Hence all the items in the table are in the measurement and will be used for further analysis.

The measurement properties for the environment (market dynamics, competitive intensity and technological turbulence) that was obtained from the 18 agricultural experts were also assessed using the PCA. The experts rated six agricultural industries, which imply that each scale was completed 108 times. They rated the environmental factors based on statements measured with a five point likert scale, where 1 represent not agree and 5 representing agree. It should be noted that all the decision criteria used for the MO and EO were also applied to the environmental factors. Average scores were used for further analysis. The table below shows the properties of the measurement scale for the environmental factors.

Table 1b Measurement scale properties of Environmental Dynamics

scale	# of items	Eigenvalue second component	Variance accounted for	Lowest item loading	Cronbach,s Alpha
Environmental Dynamics	3	0.77	60%	0.64	0.66
• Customer dynamics	3	0.77	60%	0.64	0.66
• Competitive intensity	3	1.00	54%	0.37	0.53
• Technological turbulence	4	0.77	56%	0.64	0.73

3.1.3 Analysis

Two stage hierarchical linear modelling (HLM) was used to analyse the influence of the environment on market orientation and entrepreneurial proclivity. In the first level of the analysis we looked at the influence of different industries on MO and EO on the individual farmers. Since farmers (the subjects of this study) are nested within different farm industries (Arable, fruits, vegetables, flowers, intensive livestock and Dairy), the second level of the analysis will focus on the influence of the environment on EO and MO of the firm owners.

At the level one of the analyses the dependent variable is the Famers EO or MO orientation and the explanatory variables are the different industries. The different industries were converted to dummy variables and excluded dairy. This was done in order to explain the other industries through dairy.

$$MO = \beta 0 + \beta 1 Arable + \beta 2 Intensive\ livestock + \beta 3 Flowers + \beta 4 Vegetables + \beta 5 Fruits$$

$$EO = \beta 0 + \beta 1 Arable + \beta 2 Intensive\ livestock + \beta 3 Flowers + \beta 4 Vegetables + \beta 5 Fruits$$

The next step in the HLM is to predict the variation of the regression coefficients β of the industries by introducing explanatory variables (environmental dynamics) at the industry level. Only the significant coefficients will be explained in the second level of the analysis.

$$\beta \mathrm{i} = \gamma 0 + \gamma 1 Customer\ dynamics\ + \gamma 2 Competitive\ intensity + \gamma 3 Technological\ dynamic$$

CHAPTER FOUR

4.1 RESULTS

Hierarchical linear modelling was used to statistically analyse the data where farmers (level-1) were nested within farm industries (level-2). The main focus of the analysis is the relationship between the environmental dynamics and market orientation and entrepreneurial orientation of the farmers. Two stages hierarchical linear modelling procedure was used for the analysis. Following the model, in the first part of the analysis we explain the influence of different industries on market orientation and entrepreneurial orientation of firm owners. The second part of the analysis explains the influence of environment on market orientation and entrepreneurial orientation of firm owners.

Table 1 shows the regression coefficients of market orientation for different farm industries. The model reveals that there is a significant difference in the market orientation of dairy farmers and all the other farm industries ($b>0.5$, $p<0.01$) except the fruits industry which reported a p-value of 0.187. When the industries were included as the only independent variables, the model accounted for 22% of the variance in market orientation.

Table 1: Influence of Industry and Entrepreneurial orientation on Market orientation

Firms	Market orientation	p-value
Arable	0.509	0.000
Intensive livestock	0.759	0.000
Flowers	0.610	0.000
Vegetables	0.543	0.001
Fruits	0.546	0.187
EO	0.544	0.000
Constant	1.517	0.000
N	588	
$^1R^2$	0.218	
$^2R^2$	0.263	
^1F	160.176	0.000
^2F	6.9064	0.000

Note: $^1R^2$ and ^1F are the r-square and f-change for the model with industries as the only independent variables and $^2R^2$ and ^2F are the r-square and f-change for the model with the industries and EO.

The F-change for the first model is 160.176 which is significant at 0.01 alpha level. The second model included the dummies of all the industries and EO into the analysis. The model still remains significant (F-change=6.9064, p=0.00, R2=26%).This confirms our third hypothesis that there is positive relation between market orientation and entrepreneurial orientation. The model indicates that dairy farmers are less market oriented as compared to the other industries. Additionally, the results shows that there is a significant relationship (b=0.544, p=0.000) between market orientation and entrepreneurial orientation of firm owners.

Table 2 below looks at the influence of industry on entrepreneurial orientation of firm owners. From the results it can be realised that there is no significant difference in the entrepreneurial orientation across industries (F=1.351, P= 0.241). This implies that the industry the farmers belong to does not predict their entrepreneurial orientation.

Table 2. Influence of Industry on entrepreneurial orientation of firm owners

Firms	EO	p-value
Arable	0.307	0.017
Intensive livestock	0.108	0.482
Flowers	0.221	0.173
Vegetables	0.191	0.236
Fruits	0.325	0.410
Constant	3.847	
N	588	
R^2	0.012	
F	1.351	0.241

Table 3 shows the influence of industry on the three dimensions of entrepreneurial orientation. In general, the results shows that there is no significant difference in innovativeness across industries (F=1.738, 0.124). Moreover, no significant differences in risk taking and pro-activeness across industries were recorded. All these results confirm the results in table 2 that there is no significance difference in the entrepreneurial orientation of firm owners across industries

Table 3. Influence of Industry on Innovativeness, Risk taking and pro-activeness of firm owners

Firms	Innovativeness		Risk taking		Pro-activeness	
	β	p-value	β	p-value	β	p-value
Arable	0.346	0.015	0.199	0.132	0.390	0.010
Intensive livestock	0.062	0.714	0.134	0.397	0.112	0.536
Flowers	0.382	0.033	-0.006	0.974	0.340	0.076
Vegetables	0.176	0.323	0.233	0.162	0.159	0.403
Fruits	0.180	0.680	0.267	0.513	0.479	0.304
Constant	4.265		3.721		3.693	
N	588		588		588	
R^2	0.15		0.007		0.015	
F	1.738	0.124	0.806	0.513	1.690	0.135

The next level of the analysis was to explain the regression coefficients in table 1 in the level one model. Here only the significant coefficients can be explained. Thus since there is no significant difference in entrepreneurial orientation across industries we cannot explain the coefficients. This implies that we cannot test our second hypothesis. We will only explain the coefficients of market orientation across the industries. Following the model, customer dynamics, competitor dynamics and technological dynamics were used as explanatory variables. From the results in the table below it can be seen that there is no significant relationship between market orientation and the dynamics in the environment at 0.05 alpha levels. This is not surprise because only six observations (i.e. coefficients) were included at this level of the analysis which resulted in 2 degrees of freedom. At such minimal number of observations it will be appropriate to test our results at a low confidence interval. In this case we decided to test our results at 85% confidence interval.

The model explained about 90% of variance in the market orientation. This means that the model has a very good explanatory power. In general there is a significant relationship between market orientation and the dynamics in the environment at 85% confidence interval (F=6.034, P= 0.145). From the results it could be observed that firm owners operating in competitive intense environment are more market oriented. This support our H1a, that firm owners operating in competitive intense environment are more market oriented.

The results in the hierarchical linear modelling below also shows that there is no significant relationship between market orientation and customer dynamics (p=0.571). This does not support

our H1b, that firm owners operating in customer dynamic environments are more market oriented. Although the relationship between the market orientation and customer dynamics is positive, the size of the regression coefficient shows that the relationship is very weak (γ=0.125). This shows that firm owners operating in customer dynamic environment are not necessarily market oriented.

Finally, the results shows that there is negative relationship between market orientation and technological turbulence (γ=-0.519, p=0.231). This result also does not support our H1c that firm owners operating in technological turbulent environments are more market oriented.

Table 4. Influence of the environment on Market Orientation of Firm owners.

Environmental dynamics	Market orientation	p-value
Customer dynamics	0.125	0.571
Competitor dynamics	0.806	0.062
Technological turbulence	-0.519	0.231
Constant	-0.988	0.202
N	6	
R^2	0.901	
F	6.034	0.145

CHAPTER FIVE

5.0 CONCLUSIONS AND DISCUSSION

This section of the report will highlight the main issues that came up in the results with respect to the research questions and the purpose of the study.

5.1 CONCLUSIONS

The results show that dairy farmers are less market oriented as compared to the other industries. A possible explanation is that dairy farmers in Netherlands operate under the European law of milk quota (Bergevoet et al., 2004). This limits the dairy farmers as to the amount of milk they can produce even if their customers demand more. The dairy farmers are less market oriented because their environment is less dynamic. They have contractual agreement with their customers whose needs do not change so often. Again competition is less fierce due the production restriction.

The outcome of the research indicates that firm owners do not differ in their entrepreneurial orientation. This implies that the industries that farmers belong to does not necessarily predict their EO. Moreover, no difference was recorded between the different dimensions of EO and the environment

There is a positive relationship between MO and EO of firm owners. Focusing on MO or EO alone will not yield the needed results for firm owners. For instance while MO involves collection and dissemination of market intelligence across departments, it takes proactive, innovative and risk taking attitude of firm owners to fully responds to the needs of customers and competitive threats. Thus it requires MO to identify opportunities and in order to exploit the full benefit of the identified opportunities EO is much needed.

From the results it could be inferred that, the firms' environment influences the MO of firm owners. They are more market oriented in competitive intensity. Since the dynamism in the environment is ongoing, through try and error firm owners will be able to learn from their past mistakes and successes to improve on their future performance.

On the contrary in technological turbulent environment firm owners are less market oriented. Possibly they do not have enough time and resources to figure out how the technology works or they spend much time to study how they could make the technology work. Thus while they keep on struggling with the changing technology, they may end up adopting the wrong technology or may not adopt it all. This in the end will limit their ability to meet the needs of their customers and also weaken their strength in combating the threats of competitors.

5.2 DISCUSSION

The purpose of our study is to find out how the environment influences the market orientation and entrepreneurial orientation of firm owners. That is to find out whether firm owners adapt their market orientation and entrepreneurial orientation to the dynamics in the environment. From the results of the analysis several issues have emerged from the study. We will discuss these issues under three main themes: Relationship of our results with literature, managerial implications, limitations and suggestions for further research.

5.2.1 Relationship with literature.

The results of the study indicate that the environment influences the market orientation of firm owners. The study shows that firm owners operating in competitor dynamic environment are more market oriented. This result is in line with previous findings (Gatignon & Xuereb, 1997; Grinstein, 2008; Jaworski & Kohli, 1996; Kirca et al., 2005). Although the above studies mainly concentrate on the moderating role of the environment on relationship between market orientation and performance, from the results of the analysis it could be observed that with time firm owners will adapt to their environment through learning else they will not survive. When a firm is faced with dynamic customers and more aggressive competitors they become more responsive to the customers' needs and also rearranged their resources such that they will be able to face their competitors squarely.

On the other hand the role of technological turbulence on market orientation has been mixed. Some studies show that technological turbulence weaken the relationship between market orientation and performance (Kirca et al., 2005; Slater & Narver, 1994). Looking at the rate at which technology is changing is possible firm owners are unable to adapt their Market orientation to the environment. This implies that firm owners operating in technological turbulent environment are less market oriented. When small firms are confronted with rapid changing technologies, they do not have time and resources to spend on anything else. Their main focus is how to get their customers satisfied. Because of their limited resources it takes quite a long time for them to figure out how they can introduce such technologies successfully (Grewal & Tansuhaj, 2001). Some firms also concentrate all their attention on how to introduce all kinds of technologies while neglecting their focus on market orientation. Other studies (Rose & Shoham, 2002) found a positive role of technological turbulence on market orientation. Rose & Shoham, 2002 found out that firms in high technological turbulent environment spend less time on market orientation. But when they link the changes in technology to performance it increases their market orientation. To be successful firms should combine a focus on technology with market orientation (Rose & Shoham, 2002)

5.2.2 Managerial Implications

Our study has revealed that, the environment within which firm owners operate influence their market orientation. They are more market oriented in competitor dynamic environments. Technological turbulent on the other hand has a negative influence on the firm owners' market orientation. These findings have some implications for small firm managers.

One major implication for managers to recognise is that, in increasing competitive intensity environments, they can realise market orientation by adapting their market orientation to the dynamics in the environment. Thus contrary to the believe that the environment only moderate the relationship between market orientation and performance, this study shows that it is an antecedent to firm owners market orientation. That is firm owners who want to obtain sustain advantage in the current competitive and customer dynamic environments should place much emphasis on their market orientation. Strong market orientation in dynamic environment should help firm managers to identify more business opportunities.

Another point worth managers' consideration is to recognise the fact that technological turbulence negatively influences their market orientation. Small firm entrepreneurs have very limited resources to cope with the rate of change in technology. But looking at the imperative nature of technology to firms success, it behoves on firm owners to be very strategic in aligning their market orientation to changes in technology. It should carefully be evaluated if it will add more value to the customer and also put the firm at a very comparative advantage position. Firm managers will reap more benefits from technological change if they link their market orientation to performance.

5.2.3 Limitations and suggestions for further research

This study suffers from some limitations that offer opportunities for further research. One major limitation for this research is that we could not test whether the environment influence the entrepreneurial proclivity of firm owners. This is because from the analysis at the level one of the model it was realised that, industries do not differ in their entrepreneurial proclivity. As a result it was not possible to test the model to see if the environment influences the EO of the firm owners. But it is still believe that the environment could influence the firm owners EO. This result could be due to the fact that only six industries were included in the analysis. It is therefore very difficult to find significant difference when working with such a small number of industries. Moreover, the arable farm industry is very broad. This implies that arable farming category is made of farmers who grow different types of crops with a lot of differences within. Future research should include more farm industries and also the term arable farming should be split in order to account for the differences within.

Another limitation of this research is that our model concentrated on only small scale farmers in the Netherlands. This limits our ability to generalise our findings. Future researchers should concentrate on farming industries in other countries and also the effect of the environment on non-farm industries should be exploited.

Moreover, further follow up studies should be conducted on the selected firms to find out if there has been some changes in their performance. This will help us to lay claim that indeed the environment influence the EO and MO approach of firm owners and that they adapt to their environment through learning or if they fail to adapt they will go bankrupt.

In all this research is among the first step in validating the environment and EO and MO relationships. The research must therefore be repeated in different business settings and over time in order to validate the nature and power of the model.

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